

2003 Summer Flounder, Scup, and Black Sea Bass Recreational Specifications

**Environmental Assessment
Regulatory Impact Review and
Initial Regulatory Flexibility Analysis**

Prepared by the Mid-Atlantic Fisheries Management Council
and the National Marine Fisheries Service

March 26, 2003

EXECUTIVE SUMMARY

The proposed action would implement management measures to achieve the recreational harvest limits for the summer flounder, scup, and black sea bass fisheries, published in the Federal Register as part of the 2003 annual quota specifications (68 FR 60, January 2, 2003). This Environmental Assessment analyzes the possession, size, and/or seasonal limits that will most likely achieve the 2003 recreational harvest limits for the three species.

For the summer flounder fishery, the proposed action would implement conservation equivalency, as recommended by the Mid-Atlantic Fishery Management Council (Council) and the Summer Flounder, Scup, and Black Sea Bass Management Board (Board) of the Atlantic States Marine Fisheries Commission (Commission). Conservation equivalency requires the states to develop state-specific management measures (i.e., possession limits, fish size limits, and seasons) to achieve state-specific harvest limits. Under this approach, each state may implement unique management measures appropriate to that state, so long as they are determined by the Commission to provide equivalent conservation. Also, as required under the conservation equivalency guidelines, the Council recommended a precautionary default alternative of an 18-inch minimum fish size, a 1-fish possession limit, and no closed season; these measures would apply to Federal permit holders landing summer flounder in states that do not develop and implement approved conservation equivalency measures.

To achieve the 2003 recreational harvest limits for scup, the proposed action would implement a coastwide 50-fish possession limit, a 10-inch minimum fish size, and open seasons of January 1 through February 28, and July 1 through October 31. The Board adopted state-by-state conservation equivalency measures for 2003 and directed the Commission staff to develop a draft addendum for conservation equivalency using the same parameters that were approved in Addendum VII to the Commission's Interstate Scup Fishery Management Plan (FMP). Because the Federal FMP does not contain provisions for scup conservation equivalency and states will be adopting their own unique measures, it is likely that Federal and state recreational scup measures will differ for the 2003 season. As such, the Federal measures would only apply to party/charter boats with Federal permits.

To achieve the 2003 recreational harvest limits for black sea bass, the proposed action would implement a coastwide 25-fish possession limit, a 12-inch minimum fish size, and open seasons of January 1 through September 1, and September 16 through November 30.

These measures are expected to achieve the Council-recommended 2003 level of recreational landings for summer flounder, scup, and black sea bass. For each species, the Council analyzed the biological, social, and economic impacts of the preferred alternatives and two other alternatives. The proposed action is not expected to result in

significant social or economic impacts, or significant natural or physical environmental effects.

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Environmental Assessment (EA)

1.0 Annual Specification Process

1.1 Introduction

The purpose of this document is to analyze recreational management measures designed to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2003. This document examines the impacts to the environment that could result from implementation of a range of proposed alternatives recommended for these fisheries. These measures include recreational size limits, recreational possession limits, and seasonal closures.

Comprehensive measures enacted by Amendment 2 of the Summer Flounder Fishery Management Plan (FMP) and modified in Amendments 3 through 7 were designed to rebuild the severely depleted summer flounder stock. Amendments 8 and 9 to the Summer Flounder, Scup, and Black Sea Bass FMP implemented recovery strategies to rebuild the scup and black sea bass stocks, respectively. These amendments established Monitoring Committees which meet annually to review the best available scientific data and make recommendations regarding the total allowable landings (TAL) and other management measures in the plan. The Committee's recommendations are made to achieve the target mortality rates established in the amendments to reduce overfishing. The Committee bases its recommendations on the following information: (1) commercial and recreational catch data; (2) current estimates of fishing mortality; (3) stock status; (4) recent estimates of recruitment; (5) virtual population analysis (VPA); (6) target mortality levels; (7) levels of regulatory noncompliance by fishers or individual states; (8) impact of fish size and net mesh regulations; (9) sea sampling data; (10) impact of gear other than otter trawls on the mortality of each species; and (11) other relevant information.

The Council met jointly with the Atlantic State Marine Fisheries Commission's (Commission) Summer Flounder, Scup, and Black Sea Bass Board (Board) in August 2002, to consider the 2003 commercial quotas and recreational harvest limits for these species. The Monitoring Committees made recommendations to the Council which, in turn, made recommendations to the Regional Administrator. The Regional Administrator reviewed the recommendations to ensure that the FMP objectives were achieved. The "2003 Summer Flounder, Scup, and Black Sea Bass Specifications," submitted to NMFS by the Council in October 2002, described the environmental, economic and social impacts of the 2003 commercial quotas and recreational harvest limits for these fisheries (summer flounder, scup, and black sea bass) and also analyzed the impacts of commercial measures aimed at achieving the commercial quotas. The 2003 commercial quotas and recreational harvest limits, and the specific measures to attain the commercial quotas, were implemented by the National Marine Fisheries Service (NMFS) on January 2, 2003 (68 FR 60).

The Council and Board met again in December 2002 to recommend specific measures to attain the recreational harvest limits that had been specified in August 2002. The Council and Board considered the recommendations of the Summer Flounder, Scup, and Black Sea Bass Monitoring Committees, and information provided by Council staff, advisors, and the public in the development of their recommendations for these recreational fisheries.

1.2 Purpose and Need

The purpose of this document is to analyze recreational management measures designed to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2003. This document examines the impacts to the environment that could result from implementation of a range of proposed alternatives recommended for these fisheries. These measures include recreational size limits, recreational possession limits, and seasonal closures.

The management programs for summer flounder, scup, and black sea bass were examined in detail in the Environmental Impact Statements (EIS) prepared for each of the fisheries in Amendment 2 for summer flounder (1992), Amendment 8 for scup (1996), and Amendment 9 for black sea bass (1996). Those analyses considered the impacts of the overall management measures including rebuilding schedules and annual exploitation rates on the environment (biological, socioeconomic, Essential Fish Habitat, and protected resources). Those EIS were updated in Amendment 13 (submitted for Secretarial approval on August 20, 2002). Additionally, the impact of the 2003 recreational harvest limits for these species were analyzed in the 2003 Summer Flounder, Scup, and Black Sea Bass Specification Package, submitted to NMFS on October 15, 2002, and approved on January 2, 2003.

1.3 Management Objectives of the FMP

The management objectives of the FMP are as follows:

- 1) reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to ensure that overfishing does not occur;
- 2) reduce fishing mortality on immature summer flounder, scup, and black sea bass to increase spawning stock biomass;
- 3) improve the yield from the fishery;
- 4) promote compatible management regulations between state and Federal jurisdictions;
- 5) promote uniform and effective enforcement of regulations;
- 6) minimize regulations to achieve the management objectives stated above.

To attain these management objectives the FMP specifies the following measures may be specified annually:

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- * commercial quotas;
- * minimum sizes;
- * gear regulations;
- * recreational harvest limit;
- * recreational possession limit, season, and no-sale provision.

2.0 Methods of Analysis

This EA analyzes the possession, size, and/or seasonal limits that will most likely achieve the 2003 recreational harvest limits for summer flounder, scup, and black sea bass. It is an assessment of the impact of various alternatives on the environment relative to the No Action Alternative, as required by National Environmental Policy Act (NEPA). A full description of each alternative, including a discussion of a no action alternative, is given in section 3.0. The following discussion details the changes in management measures, if any, that will most likely be required to achieve the 2003 recreational harvest limits for summer flounder, scup, and black sea bass.

As published in the 2003 quota specifications (68 FR 60, January 2, 2003), the recreational harvest limit for summer flounder in 2003 is 9.28 million lb (4.21 million kg), 4.5% less than the 2002 recreational harvest limit. However, 2002 recreational summer flounder landings are projected to be 8.13 million lb (3.69 million kg), 12% less than the 2002 recreational harvest limit. Assuming the same level of fishing effort in 2003, no coastwide reductions in landings would be required for summer flounder. Under conservation equivalency, the only state that would be required to reduce landings would be Virginia (by 11%).

The 2003 specifications for scup implemented a recreational harvest limit of 4.01 million lb (1.82 million kg), 48% higher than the recreational harvest limit for 2002. The 2002 recreational scup landings are projected to be 3.76 million lb (1.71 million kg). As a result of the increase in the harvest limit, recreational scup landings can increase by 7% in 2003 relative to the projected landings for 2002. Although it appears that constraints on the fishery could be relaxed, any relaxation should be balanced with the consideration of stock status. The most recent assessment indicates that the scup biomass increased in 2002 and is likely to increase again in 2003. Survey information indicates that regulations may have protected a large 1997 year class and also indicate that strong year classes were produced in 1999-2001. If the 1999, 2000, and 2001 year classes are large and mortality of undersized fish is reduced, substantial biomass could be added to the stock by 2003 and availability of legal-sized fish could increase. Because less fish were landed in the recreational fishery in 2002 than in 2001, possession and size limits should be based on 2001 landings (i.e., 4.26 million lb) to constrain landings in 2003. Additionally, the 2001 landings were expanded to account for seasonal effects. Specifically, Marine Recreational Fisheries Statistical Survey (MRFSS) data for 1996-2000, indicate that the combined effect of the 2001 closed seasons implemented by the states was to reduce landings by 22%. As such, if the

seasons had not been in place, landings could have been 5.46 million lb ($4.26/(1-0.22)$) in 2001. Compared to the 2003 harvest limit of 4.01 million lb, 2001 landings would have to be reduced by 27%.

The black sea bass recreational harvest limit for 2003 is 3.43 million lb (1.56 million kg), the same as the 2002 recreational harvest limit. However, the 2002 recreational black sea bass landings are projected to be 4.40 million lb (2.00 million kg). To determine the reduction necessary to achieve the 2003 recreational harvest limit, the 2002 landings must be expanded to account for the seasonal effect. The combined effect of the 2002 closed season (i.e., the 2001 season that rolled over into 2002) was about 6%. If the closed season had not been in place, landings could have been 4.68 million lb ($(4.40/(1-0.06))$) in 2002. As such, the 2002 expanded landings would have to be reduced by 27% to achieve the 2003 harvest limit of 3.43 million lb.

3.0 Alternatives Being Considered

This section provides a description of all considered management alternatives. Further discussion and evaluation of these alternatives is found in section 6.0 of the EA.

3.1 Alternative 1 (Preferred)

3.1.1 Summer Flounder (No Action)

Based on a Monitoring Committee recommendation, the Council and Board voted to recommend conservation equivalency to achieve the 2003 summer flounder recreational harvest limit. Additionally, the Board agreed to allow states who landed less than their 2002 target to liberalize regulations in 2003.

The Council and Board's preferred alternative (Alternative 1- Conservation Equivalency) would allow the states to implement conservation equivalent management measures. State-specific reductions associated with the 2003 coastwide recreational harvest limit of 9.28 million lb (4.21 million kg) are based on the number of fish landed in 1998, and the number of fish projected to have been landed in 2002 (Table 1). State-specific landings from 1998 are used as a base because 1998 is the last year that recreational summer flounder regulations were consistent along the coast. Recreational landings in 1998 were 6.978 million fish coastwide. As such, the 2003 recreational harvest limit in number of fish (the 2003 recreational harvest limit divided by the mean weight of summer flounder from 2000-2002) would have to be reduced by 40.9% to achieve this limit. State-specific 1998 landings were reduced by 40.9% to derive state-specific targets for 2003. These targets were then compared to 2002 landings to determine if state-specific reductions were necessary. Landings projections for 2002 indicate that Virginia will be the only state required to reduce recreational summer flounder landings by 11% in 2003 (Table 1).

In order to constrain recreational landings to the overall recreational harvest limit, the Commission established conservation equivalency guidelines that require each state, using state-specific tables, to determine and implement an appropriate possession limit, size limit, and closed season to achieve the landings target for each state. The state-specific tables are adjusted to account for the past effectiveness of the regulations in each state.

The Commission requires each state to submit its conservation equivalency proposal by January 15, 2003 (Table 2). The Commission's Summer Flounder Technical Committee will evaluate the proposals and advise the Board of each proposal's consistency with respect to achieving the coastwide recreational harvest limit. After the Technical Committee evaluation, the Board will meet to approve or disapprove each state's proposal. During the comment period for the proposed rule, the Commission will notify NMFS as to which state proposals have been approved or disapproved. If, at the final rule stage, the Commission recommends and NMFS accepts conservation equivalency, then NMFS would waive the Federal recreational measures that would otherwise apply in the Exclusive Economic Zone (EEZ). Federally permitted vessels as well as vessels fishing in the EEZ, would be subject to the recreational fishing measures implemented by the state in which they land. States that do not submit proposals or whose proposals were disapproved by the Commission would be required by the Commission to adopt the precautionary default measures. The Commission would allow states that had been assigned the precautionary default measures to resubmit revised management measures. In this case the Commission would notify NMFS of any resubmitted proposals that were approved after publication of the final rule implementing the recreational specifications. Afterwards, NMFS would publish a notice in the Federal Register to notify the public of any changes in a state's management measures

3.1.2 Scup

The Council voted to recommend a 10-inch total length (TL) minimum fish size, a 50-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through November 30, for 2003 scup recreational measures. It is estimated that the Council's recommended scup measures would reduce recreational landings by 27%, assuming the measures are implemented by all states (Tables 3 and 4).

The Board adopted state-by-state conservation equivalency measures for 2003 and directed the Commission staff to develop a draft addendum for conservation equivalency using the same parameters that were approved in Addendum VII (ASMFC 2002) to the Commission's Interstate Scup FMP. Addendum VII (ASMFC 2002) required states from Massachusetts through New Jersey to develop state-specific management measures. Due to low scup landings in the southern states, the Board approved the retention of existing recreational scup measures from Delaware through North Carolina for 2003. Because the Federal FMP does not contain provisions for

conservation equivalency and states will be adopting their own unique measures under an addendum to the Commission's Interstate FMP, it is likely that Federal and state recreational scup measures will differ for the 2003 season. As such, the Federal measures would only apply to party/charter boats with Federal permits.

3.1.3 Black Sea Bass

In order to constrain recreational black sea bass landings to the 2003 recreational harvest limit the Council and Board recommended a 12-inch TL minimum fish size, a 25-fish possession limit, and open seasons of January 1 through September 1, and September 16 through November 30. It is estimated that these measures would reduce recreational landings by 27% (Tables 5 and 6).

3.2 Alternative 2

3.2.1 Summer Flounder (Non-Preferred: Coastwide)

Based on a Monitoring Committee recommendation, the Council and Board adopted a non-preferred coastwide alternative to be implemented in the EEZ if conservation equivalency is not implemented. These measures include a 17-inch TL minimum fish size, a 4 -fish possession limit, and no closed season. It is estimated that the non-preferred coastwide alternative would reduce recreational landings by 32% coastwide based on 2001 data, assuming the measures are implemented by all states (Table 7). State-specific reductions associated with these management measures would range from 0% in Delaware to 63% in North Carolina (Table 8).

3.2.2 Scup (Non-Preferred: No Action)

The No Action (non-preferred) alternative for scup includes a 10-inch TL minimum fish size, 20-fish possession limit, and open seasons of January 1 through February 28, and July 1 through October 2. It is estimated that this alternative would reduce recreational landings by 57%, assuming the measures are implemented by all states (Tables 3 and 4).

3.2.3 Black Sea Bass (Non-Preferred: No Action)

The No Action (non-preferred) alternative for black sea bass includes an 11.5-inch TL minimum fish size, 25-fish possession limit, and an open season of January 1 through December 31. This alternative is not expected to reduce recreational landings in 2003 (Table 5).

3.3 Alternative 3

3.3.1 Summer Flounder (Non-Preferred: Precautionary Default)

The FMP requires that the Council and Board specify precautionary default measures when conservation equivalency is recommended as the preferred alternative. These would be the measures required to be implemented by a state that either does not submit a summer flounder management proposal or for states whose measures do not achieve the required reduction. For 2003, the precautionary default measures include an 18-inch TL minimum fish size, a 1-fish possession limit, and no closed season. It is estimated that the precautionary default alternative would reduce landings by 67%, assuming the regulations are implemented by all states (Table 7). State-specific reductions would range from 41% in Delaware to an 88% in North Carolina (Table 8).

3.3.2 Scup (Non-Preferred)

A non-preferred alternative recommended to the Council by the monitoring committee includes a 10-inch TL minimum fish size, a 50-fish possession limit, and open seasons of January 1 through February 28, and July 14 through December 31 for the 2003 recreational scup fishery. It is estimated that this alternative would reduce recreational landings by 27%, assuming the coastwide regulations are implemented by all states (Tables 3 and 4).

3.3.3 Black Sea Bass (Non-Preferred)

A non-preferred alternative recommended to the Council by the monitoring committee includes a 12.5-inch TL minimum fish size, a 25-fish possession limit, and an open season of January 1 through December 31. It is estimated that this alternative would reduce recreational landings by 30% (Tables 5 and 6).

3.4 No Action Alternative

Section 5.03(b) of NOAA Administrative Order (AO) 216-6, "Environmental review procedures for implementing the National Environmental Policy Act," states that "an Environmental Assessment (EA) must consider all reasonable alternatives, including the preferred action and the no action alternative." Consideration of the "no action" alternative is important because it shows what would happen if the proposed action is not taken. Defining exactly what is meant by the "no action" alternative is often difficult. The President's Council on Environment Quality (CEQ) has explained that there are two distinct interpretations of the "no action": One interpretation is that the no action alternative is essentially the status quo, i.e., no change from the current management. The other interpretation is the situation that would exist if the proposed action, such as building a railroad facility, did not take place.

The status quo management for these fisheries involves a set of indefinite (i.e., in force until otherwise changed) management measures. These measures would continue as is, even if the proposed specifications are not implemented. However, the current management program includes specifications of possession limits, minimum fish sizes, and fishing seasons that are specific to the 2002 fishing year, and based on the 2002 TALs. Roll-over of the recreational measures specified for the 2002 fishing year would be inappropriate because the existing measures would not be likely to effect the 2003 Council-recommended harvest limit for scup and black sea bass.

For the purposes of this EA, the no action alternative is defined as implementation of the following: (1) For summer flounder, conservation equivalency with precautionary default measures of an 18-inch TL minimum fish size, a 1-fish possession limit, and no closed season; (2) for scup, a 10-inch TL minimum fish size, a 20-fish possession limit, a 10-inch TL minimum fish size, and open seasons of January 1 through February 28, and July 1 through October 2; and (3) for black sea bass, an 11.5-inch TL minimum size, a 25-fish per person possession limit, and an open season of January 1 through December 31.

The implications of the no action alternative are substantial. For scup, the status quo would be overly restrictive, given the 7% increase in landings allowed relative to 2002 (as described in Section 2.0). For black sea bass, the status quo would not be restrictive enough to effect the recommended 27% reduction in landings relative to 2002.

In consideration of the Council-recommended recreational harvest limits established for the 2003 fishing year, implementation of the same recreational measures established for the 2002 fishing year would be inconsistent with the goals and objectives of the FMP and its implementing regulations, and, because it could result in overfishing of the black sea bass fishery, also would be inconsistent with National Standard 1 of the Magnuson-Stevens Act. Therefore, the no action alternative is not considered to be a reasonable alternative to the preferred action and its collective impacts are not analyzed in this EA/RIR/IRFA. The no action measure for summer flounder is analyzed in Alternative 1, in combination with preferred measures for scup and black sea bass. The no action measures for scup and black sea bass are considered as part of Alternative 2, in combination with the non-preferred coastwide measure for summer flounder.

3.5 Research Set-aside Program

As part of the research set-aside program, a number of research projects were submitted to NMFS that would require an exemption from some of the current or proposed regulations for summer flounder, scup, and black sea bass. Under the research set-aside program, the Council, in consultation with the National Marine Fisheries Service Northeast Regional Administrator, and the Commission have recommended five of these research projects (August 5, 2002 letter from Mears to

Furlong). In order to expedite the approval and implementation of these research projects, Council staff agreed to analyze the impacts of these exemptions on the environment for inclusion in the specification package for these species.

In the annual specification process for 2003, the Council approved research set-asides equal to the amounts requested in the five projects that were conditionally accepted by NMFS (August 5, 2002 letter from Mears to Furlong). These set-aside amounts would be 91,163 lb, 66,650 lb, and 67,676 lb, for summer flounder, scup, and black sea bass, respectively. These research set-aside amounts will be deducted from the TALs for each species. The commercial quotas will also be adjusted according to the quota counting procedures outlined in section 1.1 (Table 1).

4.0 Affected Environment

4.1 Physical Environment (Habitat)

For summer flounder, the general geographic range encompasses the shallow estuarine waters and outer continental shelf from Nova Scotia to Florida. Scup is a warm temperate species that occurs from Canada to the Georgia Bight. The population of scup north of Cape Hatteras makes extensive seasonal migrations from inshore summering areas to offshore wintering areas. Black sea bass is basically a warm-temperate species, usually strongly associated with structured, sheltering habitats, such as reefs and wrecks. The population of black sea bass north of Cape Hatteras migrates south and offshore (to off New Jersey and North Carolina) in the winter but returns to coastal structured habitats for the summer.

A complete description of the physical environment (i.e., habitat) for summer flounder, scup, and black sea bass; the impact of fishing on summer flounder, scup, and black sea bass EFH; and the impact of the summer flounder, scup, and black sea bass fisheries on other species' EFH can be found in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.2).

4.2 Human Environment

4.2.1 Port and Community Description

The recreational summer flounder, scup, and black sea bass fisheries are important to many communities along the East Coast. A brief description of the relative importance of summer flounder, scup, and black sea bass recreational landings at the state level follows. The ports and communities that are dependent on summer flounder, scup, and black sea bass are fully described in Amendment 13 (section 3.4).

Data are not available to identify to what extent communities are dependent upon these recreational fisheries. The MRFSS program does not identify port and community level

data. Vessel Trip Report (VTR or “logbook”) data can be analyzed on the port-level for party/charter boat landings. However, MRFSS data indicate that party charter landings represented 14%, 15%, and 64%, of the total number (A+B1) of summer flounder, scup, and black sea bass recreational landings, respectively, from Maine through North Carolina, on average from 1981-2001 (Tables 9-11). As such, VTR data may not be representative of the importance of the entire summer flounder, scup, and black sea bass recreational fisheries to ports. However, for party/charter vessels, the largest number of permit holders for these species are located in Massachusetts, followed by New Jersey, and New York (section 4.2 of the 2002 Summer Flounder, Scup, and Black Sea Bass Specifications).

According to MRFSS estimates the top five states from Maine through North Carolina in 2001 that landed summer flounder were New Jersey, Virginia, New York, North Carolina, and Rhode Island (Table 12). Massachusetts, Connecticut, Delaware, and Maryland each accounted for less than 3% of the total summer flounder landings. VTR data indicate that summer flounder accounted for 27%, 12%, 7%, and 5% of the total catch by party charter vessels in the states of New York, New Jersey, Delaware, and Rhode Island, respectively, from 1996 to 2001 (Table 13).

The top five states that landed scup in 2001 were New York, Rhode Island, Connecticut, Massachusetts, and New Jersey (Table 12). These states accounted for nearly 100% of the total recreational scup landings in 2001. VTR data indicate that scup accounted for 25%, 20%, 9%, 7%, and 6% of the total catch by party charter vessels in the states of New York, Massachusetts, Rhode Island, New Jersey, and Connecticut respectively, from 1996 to 2001 (Table 14).

The top five states that landed black sea bass in 2001 were New Jersey, Virginia, Delaware, North Carolina, and New York (Table 12). New Jersey alone accounted for 64% of the landings. The states of New Hampshire, Rhode Island, Massachusetts, Connecticut, and Maryland each accounted for less than 5% of the total black sea bass recreational landings. VTR data indicate that black sea bass accounted for 61%, 38%, 34%, and 32% of the total catch by party charter vessels in the states of Maryland, North Carolina, Virginia, and New Jersey, respectively, from 1996 to 2001 (Table 15). Black sea bass also accounted for at least 8% of the total catch of party/charter vessels in New York, Delaware, and Rhode Island from 1996-2001 (Table 15).

4.2.2 Analysis of Permit Data

A full description and analysis of the vessels permitted to participate in the commercial and recreational fisheries for summer flounder, scup, and black sea bass is presented in section 4.2 of the “2003 Summer Flounder, Scup, and Black Sea Bass Specifications.” An additional analysis of permit data is in section 5.5 of the RIR/IRFA. This analysis indicates that 760 vessels held some combination of summer flounder, scup, an black sea bass permits in 2001. However, VTR data indicate that less than half of these

vessels reported landings of summer flounder, scup, or black sea bass in 2001.

5.0 Description of Fisheries

5.1 Summer Flounder

Recreational catch and landings have fluctuated since Amendment 2 regulations were implemented in 1993. Landings increased to 8.83 million lb in 1993 from the 1992 level of 7.15 million lb. From 1994 through 1999, recreational landings ranged from 5.42 million lb (1995) to 12.48 million lb (1998). Recreational landings in 2000 were estimated to be 16.47 million lb, the highest in the time series since 1986. Recreational landings dropped to 11.64 million lb in 2001. Based on 2002 MRFSS data for waves 1-5 (January through October), summer flounder recreational landings for 2002 are projected to be 8.13 million lb (3.69 million kg).

5.1.1 Harvest Limits and Management Measures - A Review

As a review, recreational harvest limits have been established since 1993. In both 1993 and 1994, recreational landings were close to the harvest limits. The harvest limit established for 1993 was 8.38 million lb (3.80 million kg; Table 16) In 1993, recreational fishermen landed 8.83 million lb (4.01 million kg), exceeding the target by approximately 0.45 million lb (0.2 million kg).

Most states implemented the coastwide recreational management measures of a 14" TL minimum fish size, a 6-fish possession limit, and a May 15 through September 30 open season (or equivalent) in 1993. However, several states were out of compliance with the plan including Connecticut (no possession limit or season), Maryland (10-fish possession limit), Virginia (10-fish possession limit and no season), and North Carolina (13-inch TL minimum size, no possession limit or season). However, even with the implementation of some management measures in the states, recreational landings increased in 1993 relative to the 1992 landings of 7.15 million lb (3.24 million kg).

The harvest limit established for 1994 was 10.67 million lb (4.84 million kg). Estimated landings in 1994 were 9.33 million lb (4.23 million kg) or 1.34 million lb (0.61 million kg) less than the harvest limit. Most states implemented the coastwide recreational management measures of a 14-inch TL minimum fish size, an 8-fish possession limit, and an April 15 through October 15 season (or equivalent) in 1994. However, two states did not fully implement the season in 1994; Virginia had no opening date but closed October 31 and North Carolina had no closed season at all. In addition, several states maintained the 1993 possession limit and season for their 1994 season (New Hampshire, Connecticut, and New York).

The Council and Board approved a recreational harvest limit of 7.76 million lb (3.52 million kg) for 1995. The landings estimate of 5.42 million lb (2.46 million kg) for 1995

was approximately 2.34 million lb (1.06 million kg) lower than the harvest limit. The limits implemented in 1995 were a 6-fish possession limit in the EEZ and an 8-fish possession limit in state waters, a 14-inch TL minimum fish size, and no closed season. All states had a 14-inch TL minimum fish size in 1995 and most states implemented the 8-fish possession limit although several states (New Hampshire, Connecticut, and New York) had a 6-fish possession limit.

The landings estimate for 1996 was about 2.41 million lb (1.09 million kg) greater than the limit approved by the Council and Board for that year (7.41 million lb or 3.36 million kg). The management measures implemented in 1996 were a 10-fish possession limit, a 14-inch TL minimum fish size, and no closed season.

A harvest limit of 7.41 million lb (3.36 million kg) was adopted for 1997. Recreational landings exceeded this limit by about 4.46 million lb (2.02 million kg). The management measures implemented in 1997 were an 8-fish possession limit and a 14.5-inch minimum size limit.

The recreational harvest limit was unchanged for 1998 at 7.41 million lb (3.36 million kg). The management measures that were proposed by the Council and Board to control landings in 1998 were an 8-fish possession limit and a 15-inch TL minimum fish size. However, some states did not implement these management measures until late in the season. Recreational landings exceeded the harvest limit by 5.07 million lb (2.30 million kg) in 1998.

The recreational harvest limit implemented in 1999 was 7.41 million lb (3.36 million kg). Although the harvest limit was the same as previous years, the Council and Board opted to modify the management system to allow states the flexibility to implement state-specific management measures. Specifically, the Council and Board adopted coastwide management measures of 8 fish, 15-inch TL, and an open season from May 29 to September 11. In addition, they gave the states the option of choosing the coastwide management measures or other combinations of management measures that would reduce their 1998 state-specific landings by 40%. As a result, states in New England opted for the coastwide measures and the other states chose other alternatives including higher size limits and longer seasons.

The states used a form of conservation equivalency again in 2000 to achieve the coastwide harvest limit of 7.41 million lb (3.36 million kg). Specifically, the states were given the option of adopting state specific management measures or the coastwide measures of an 8-fish possession limit, a 15.5 minimum fish size, and an open season from May 10 through October 2 (Table 16). Coastwide management measures were based on number of fish landed and equated to a 41% reduction in landings relative to 1998 estimates. State specific measures also had to reduce landings by 41%. However, as in 1999, states from Massachusetts to New York opted for the coastwide management measures with other states choosing longer seasons and/or smaller size

limits.

The 2001 season was complicated by the different TALs that were initially adopted by the Council and Board. Based on an emergency rule to comply with a court order, the Council recommended that the recreational harvest limit for 2001 be set at 7.16 million lb. However, the Board initially set the overall TAL higher and adopted a recreational harvest limit of 8.2 million lb for 2001. The Commission later revised their TAL to the same level adopted by the Council. The Commission also adopted an addendum that required the states to develop recreational management measures to reduce landings by state-specific percentages based on average landings for 1998-2000, a 43% coastwide reduction, a base year of 1998, and a harvest limit of 7.16 million lb (Table 17). Most states, with the exception of Massachusetts and New York, exceeded their targets in 2001. Coastwide landings exceeded the coastwide recreational harvest limit by 63% in 2001.

In 2001, the Council and Commission adopted, and NMFS approved, Framework 2 to the Summer Flounder, Scup, and Black Sea Bass FMP. This framework, which was first applied in 2002, implemented conservation equivalency as a management tool for the summer flounder recreational fishery and established a procedure to guide the Council and Board in developing recreational management measures for the upcoming year.

The framework established two possible ways that the Council and Commission could manage summer flounder in 2002. The first alternative was to develop coastwide management measures as was done from 1993 through 1998. Regulations would then be consistent from state to state and states would not have the flexibility to develop their own regulations. The other alternative was to implement regulations based on conservation equivalency for 2002. If conservation equivalency was adopted, the framework required that the Council and Board also adopt both a coastwide management measure as a non-preferred alternative and a precautionary default measure. Precautionary default measures are defined as measures that would achieve at least the overall required reduction in landings for each state.

The Council and Board adopted conservation equivalency for 2002. As a result, each state developed regulations to achieve a state-specific target (Table 18). In addition, the Council and Board adopted an 8-fish possession limit and 17-inch TL minimum fish size as a non-preferred, coastwide alternative and a 1-fish possession limit and 18-inch TL minimum fish size as a precautionary default measure. The state management measures implemented in 2002 constrained recreational landings of summer flounder such that landings were 12% below the coastwide recreational harvest limit (Table 16).

5.1.2 Status of the Stock

The summer flounder stock assessment was completed by the Northeast Fisheries Science Center (NEFSC) Southern Demersal Working Group in May and reviewed by the Stock Assessment Review Committee (SARC) in June. The latest assessment indicates that the stock is overfished and overfishing is still occurring relative to the Amendment 12 overfishing definitions. However, the fishing mortality rate estimated for 2001 is 0.27, a significant decline from the 1.32 estimated for 1994 and close to the threshold F of 0.26. In addition, total stock biomass has increased substantially since 1991 to 95 million lb in 2001. Spawning stock biomass has increased each year since 1993 to 84.2 million lb in 2001, the highest value in the time series. Projections indicate that if the TAL in 2002 was not exceeded, total stock biomass will exceed the biomass threshold (117 million lb). At this level, the stock will no longer be overfished.

Year-class estimates indicate that the 1995 through 1999 year classes ranged from 31 to 40 million fish; the average for 1982 to 2001 is about 40 million. The 2000 year class was estimated to be about average and the 2001 year class below average at 27 million fish. However, like last year, “the current assessment method tends to underestimate the abundance of age 0 fish (e.g., by about 20% over the last three years)” in the most recent year.

5.1.3 Stock Characteristics and Ecological Relationships

A full description of stock characteristics and ecological relationships of summer flounder is presented in section 3.1.1 of Amendment 13. Additional information can be found in the 35th Stock Assessment Workshop (SAW-35) documents. The following is taken from the “SAW Southern Demersal Working Group 2002 Advisory Report: Summer Flounder (Draft).”

“An analytical assessment (VPA) of commercial and recreational total catch at age (landings plus discards) was conducted. The natural mortality rate (M) was assumed to be 0.2. Indices of recruitment and stock abundance from NEFSC winter, spring, and autumn, Massachusetts spring and autumn, Rhode Island, Connecticut spring and autumn trawl, Delaware, and New Jersey trawl surveys were used in VPA tuning in an ADAPT framework. Recruitment indices from surveys conducted by the states of North Carolina, Virginia, and Maryland were also used in the VPA tuning. The current VPA tuning configuration is very similar to those used in the 2000 SARC 31 VPA (NEFSC 2000) and in the 2001 SAW Southern Demersal Working Group VPA (MAFMC 2001). The uncertainty associated with the estimates of fishing mortality and stock biomass in 2001 was evaluated with respect to research survey variability.”

“Fishing mortality calculated from the average of the currently fully recruited (ages 3-5) summer flounder has been high, varying between 0.9 and 2.2 during 1982-1997 (55 - 83% exploitation), far in excess of the revised FMP Amendment 12 overfishing

definition, $F_{\text{threshold}} = F_{\text{target}} = F_{\text{max}} = 0.26$ (21% exploitation). The fishing mortality rate has declined substantially since 1997 and was estimated to be 0.27 (22% exploitation) in 2001, the lowest observed in the 20 year time series. There is an 80% probability that the fishing mortality rate in 2001 was between 0.24 and 0.32. The annual partial recruitment of age-1 fish decreased from near 0.50 during the first half of the VPA series to 0.20 since 1994; the partial recruitment of age-2 fish has decreased from 1.00 in 1993 to 0.78 in 1998-2001. These decreases in partial recruitment at age are in line with expectations given recent changes in commercial and recreational fishery regulations. The estimate of F for 2001 may understate actual fishing mortality as retrospective analysis shows that the current assessment method tends to underestimate recent fishing mortality rates (e.g., by about 1/3 over the last three years)."

"Total stock biomass index has increased since substantially since 1989, and in 2001 total stock biomass was estimated to be 42,900 mt (94.58 million lb), near the level of the 1980's, although still 19% below the current biomass threshold. There is an 80% chance that total stock biomass in 2001 was between 39,300 and 46,900 mt (86.61 to 103.40 million lb). The current biomass target (B_{MSY}) required to produce maximum sustainable yield ($\text{MSY}=20,900$ mt; 46.08 million lb) is estimated to be $B_{\text{MSY}} = 106,400$ mt (234.57 million lb), and the current biomass threshold of one-half $B_{\text{MSY}} = 53,200$ mt (117.28 million lb)."

"The arithmetic average recruitment from 1982 through 2001 is 40 million fish at age 0, with a median of 36 million fish. The 1982 and 1983 year classes are the largest in the VPA time series, at 74 and 80 million fish. Recruitment declined from 1983 through 1988, with the 1988 year class the weakest at only 13 million fish. Recruitment since 1988 has generally improved. The 2000 year class is estimated at 39 million fish, above the 1982-2001 median. The 2001 year class is currently estimated to be below average, at 27 million fish. It should be noted that retrospective analysis shows that the current VPA tends to underestimate the abundance of age 0 fish for recent year classes. Recent recruitment per unit of SSB has been lower than that observed during the early 1980s."

"Spawning stock biomass (SSB; Age 0+) declined 72% from 1983 through 1989 (18,800 mt to 5,200 mt; 41.45 to 11.46 million lb), but has increased seven-fold, with improved recruitment and decreased fishing mortality, to 38,200 mt (84.22 million lb) in 2001. Comparison with previous assessments shows a tendency to slightly overestimate the SSB in recent years. The age structure of the spawning stock has expanded, with 72% at ages 2 and older, and 14% at ages 5 and older. Under equilibrium conditions at F_{max} , about 85% of the spawning stock biomass would be expected to be ages 2 and older, with 50% at ages 5 and older."

5.1.4 Economic Environment

Summer flounder continues to be an important component of the recreational fishery. Estimation of primary species sought as reported by anglers in recent intercept surveys from Maine through North Carolina, indicates that summer flounder has increased in importance from 1991 to 2001, from a low of 3.8 million trips in 1992 to a high of 6.1 million trips in 2001. A detailed description of the economic aspects of the commercial and recreational fisheries for summer flounder was presented in section 3.3.1 of Amendment 13.

5.2 Scup

Recreational catch and landings of scup have fluctuated since 1981. Recreational catch peaked in 1986 at 30.87 million fish and then declined to 2.67 million fish in 1998, the lowest value in the times series. Recreational landings peaked at 11.61 million lb in 1986 and then trended downward to a low of 0.88 million lb in 1998. In 2000, catch and landings increased significantly to 11.28 million fish and 5.44 million lb, respectively. Catch and landings dropped in 2001 to 9.93 million fish and 4.26 million lb, respectively. Based on 2001 landings by wave and 2002 data for waves 1-5, scup recreational landings for 2002 are projected to be 3.76 million lb (1.71 million kg).

5.2.1 Harvest Limits and Management Measures - A Review

The Council and Commission approved a recovery strategy that reduces overfishing on scup over a 7 year time frame. That recovery strategy called for minimum fish sizes and commercial gear regulations in 1996, year 1 of the plan. In 1996, the minimum size for the recreational fishery was 7-inch TL (Table 19). The minimum fish size was also 7-inch TL for each year from 1997 to 2000. Several states had larger minimum sizes (Massachusetts - 9-inch, Rhode Island - 9-inch, Connecticut - 8-inch) and maintained them for 1996-2000.

Beginning in 1997, recreational harvest limits were established to achieve the target exploitation rates. The harvest limit in 1997 was 1.947 million lb (0.88 million kg). Estimated landings in 1997 were 1.2 million lb (0.54 million kg) or about 0.74 million lb (0.34 million kg) less than the limit. Similarly, landings in 1998 were 0.875 million lb (0.40 million kg) or about 0.68 million lb (0.31 million kg) less than the limit of 1.553 million lb (0.70 million kg). In 1999, landings exceeded the harvest limit of 1.238 million lb (0.56 million kg) by 52% or about 650,000 lb (295,000 kg).

In 2000, the harvest limit was 1.238 million lb (0.56 million kg), the same limit adopted by the Council and Board for 1999. The Council and Board were presented with projected landings for 1999 that indicated landings would exceed this limit by 32%. In response, they recommended a 50-fish possession limit with a coastwide minimum size of 7-inch TL and no closed season for 2000. Those management measures were

rejected by NMFS as ineffective. In fact, MRFSS data indicated that such a limit would reduce landings by approximately 1% on a coastwide basis, based on 1999 recreational data. Although a coastwide possession limit was never implemented in the EEZ, some states did have a 50-fish possession limit in effect in 2000.

The harvest limit for 2001 was 1.76 million lb (0.80 million kg). At their meeting in December, 2000, the Council adopted coastwide management measures of a 50-fish possession limit, a 9-inch TL minimum size limit, and an open season from August 15 through October 31. The Board postponed their decision until early 2001 and decided to implement a system of conservation equivalency to reduce landings by 33% and allow for different regulations in each of the states (Table 20).

The various size, possession and seasonal limits did not constrain landings to the harvest limit in 2001. Projected landings for 2001 are 4.58 million lb (2.08 million kg) or almost 3 million lb (1.36 million kg) more than the limit of 1.76 million lb (0.80 million kg). In fact, projected landings would have to be reduced by 39% to achieve the harvest limit in 2002 assuming no change in stock status or angler effort.

The Council and Board met in December 2001 to recommend management measures to achieve the harvest limit of 2.71 million lb. The Council recommended that NMFS implement a 10-inch TL minimum fish size, a 50-fish possession limit and open seasons of January 1 through February 28, and July 1 through October 31. However, the Council's recommendation was rejected by NMFS and instead a 20-fish possession limit, a 10-inch TL minimum fish size, and open seasons of January 1 through February 28, and July 1 through October 2 was implemented. The regulations became effective on August 2, 2002.

In addition, the Board postponed action and prepared an addendum to allow states from Massachusetts through New York to develop state-specific management measures for 2002 (Table 21). The Board approved a 50-fish possession limit, a 10-inch TL minimum fish size, and an open season from July 1 through October 31. States from Delaware to North Carolina were allowed to retain their existing measures.

The combination of the 2001 Federal management measures that rolled over into 2002, the Federal management measures that went into place on August 2, and the unique management measures implemented by the states, did not constrain landings to the recreational harvest limit in 2002. The projected landings for 2002 exceed the recreational harvest limit by 28%.

5.2.2 Status of the Stock

The most recent assessment on scup was completed in June, 2002 (SARC 35). That assessment indicated that scup are no longer overfished "but stock status with respect to overfishing cannot currently be evaluated." The SARC also concluded that although

“the relative exploitation rates have declined in recent years the absolute value of F cannot be determined.” However, they did indicate that “survey data indicate strong recruitment and some rebuilding of age structure” in recent years. SARC 35 commented that “the stock can likely sustain modest increases in catches, but managers should do so with consideration of high uncertainty in stock status determination.”

State and Federal survey indices for scup indicate an increase in stock abundance in recent years. The NEFSC spring survey results indicate that spawning stock biomass has increased each year since 1998; the estimate for 2001 (3 yr average) is 3.2 kg/tow or about 15% above the biomass threshold of 2.77 kg/tow. Given that the index is above the threshold, the stock is no longer considered overfished.

Similarly, the 2002 winter survey was at an all time high; the estimate for 2002 is a 374% increase relative to the 2001 value. In addition, the NEFSC autumn trawl survey indicates that strong year classes were produced from 1999-2001. The predominance of the 2000 year class also is evident in several of the state surveys.

Estimates of fishing mortality rates for scup are uncertain. SARC 31 conducted several analyses that indicated that F was at least 1.0 for ages 0-3 scup for the 1984 to 2000 time series. SARC 31 could not estimate F's on older fish because they are not well represented in the surveys. Although the magnitude of the current mortality rates is unknown, relative exploitation rates have changed over the period. Relative exploitation rates based on total landings and the spring survey suggest a general increase in exploitation from 1981 through 1995. Since then, relative exploitation rates have declined; the 2001 value is about 5% of the 1997 value.

5.2.3 Stock Characteristics and Ecological Relationships

The stock characteristics and ecological relationships of scup are fully described in section 3.1.2 of Amendment 13. Scup was last fully assessed at SAW-35 in 2002. As in previous assessment reviews, the SARC concluded that estimates of commercial fishery discards are not reliable due to limited sample size and uncertainty as to their representative nature of the sea sampling data for scup. The uncertainties associated with the catch data led the SARC to conclude that an analytical assessment would be inappropriate as the basis for management decisions for scup at this time. An analytical formulation for scup will not be feasible until the quality and quantity of the input data (biological sampling and estimates of all components of catches) are significantly improved and an adequate time series developed.

Although SARC 31 concluded that the F on age 0-3 scup was at least 1.0, the 35th SARC determined that “absolute estimates of fishing mortality for scup could not be calculated.” However, the relative exploitation index may offer some clue as to current levels of mortality for older fish. Because the index is based predominantly on landings

of scup larger than 9-inch TL (the commercial minimum fish size) and SSB, the index may indicate fishing mortality rates on the larger fish has declined in recent years.

The SARC-35 draft Advisory Report stated that, "Indices of recruitment from the NEFSC fall survey suggest improved recruitment in 1999-2001, with estimated age-0 abundance exceeding the 1984-2001 average of 69.03 fish/tow. NEFSC spring and winter indices of stock biomass and abundance for 2002 were the highest within each respective time series. Other survey indices have increased since the mid-1990s."

The spring survey estimate for 2002 is highly uncertain. SARC 35 noted the "high degree of inter-annual variation in individual survey indices." They noted that the "abundance of all age groups in the survey increased substantially as compared with the 2001 results" suggesting that increased availability of scup to the survey gear was an important determinant in the 2002 survey results. Additional, detailed information is available in the SAW-35 documents.

5.2.4 Economic Environment

A detailed description of the economic aspects of the commercial and recreational fisheries for scup was presented in sections 3.3.2 of Amendment 13.

5.3 Black Sea Bass

Recreational catch and landings of black sea bass have fluctuated since 1981. Recreational catches peaked in 1986 at 28.95 million fish and then fluctuated between 5.05 and 14.06 million fish from 1987 through 1999. Catches increased significantly in 2000 to 16.93 million fish and then dropped to 13.89 million fish in 2001. Recreational landings peaked at 12.39 million lb in 1986 and then fluctuated between 1.15 and 6.21 million lb from 1987 through 1999. Landings were estimated at 3.99 million lb in 2000 and dropped to 3.42 million lb in 2001. Based on 2001 landings by wave and 2002 data for waves 1-5, black sea bass recreational landings for 2002 are projected to be 4.40 million lb (2.00 million kg).

5.3.1 Harvest Limits and Management Measures - A Review

The Council and the Commission approved a recovery strategy that reduces overfishing on black sea bass over an 8-year time frame. That recovery strategy called for minimum fish sizes and commercial gear regulations in 1996 and 1997, years 1 and 2 of the plan. In 1996, the minimum size for the recreational fishery was 9-inch TL (Table 22). However, the minimum fish size was only in place for the last couple of weeks of 1996. The minimum fish size remained at 9-inch TL in 1997.

The Council and Board approved a harvest limit of 3.148 million lb (1.43 million kg) for 1998. The management measures that were proposed to control landings were a 10-

inch TL minimum size limit and a closure from August 1 through August 15. Some states implemented these regulations late or not at all in 1998. In addition, although the plan requires a coastwide possession, size, and/or seasonal limit, some states implemented alternative regulations in 1998. Landings in 1998 were 1.15 million lb (0.52 million kg).

The 1999 harvest limit was also 3.148 million lb (1.43 million kg). For 1999, the Council and Board adopted a 10-inch TL minimum size limit. The landings for 1999 were 1.67 million lb (0.76 million kg) or about 1.5 million lb (0.68 million kg) less than the limit.

The harvest limit remained at 3.148 million (1.43 million kg) for 2000 and the minimum size limit was 10-inch TL. Management measures differed by state with some states implementing a 20-fish possession limit (Massachusetts, Connecticut, and North Carolina) or a 50-fish possession limit (Virginia). The landings for 2000 exceeded the limit by approximately 700,000 lb (317,515 kg).

The harvest limit remained at 3.148 million lb (1.43 million kg) in 2001. The Council and Board adopted a 11-inch TL minimum size, a 25-fish possession limit and a closed season from March 1 through May 9 to control landings in 2001. In addition, Virginia adopted an alternative closed season, North Carolina had a lower size limit, and Massachusetts had 12-inch TL size limit and 20-fish possession limit (Table 23). However, the combination of size, possession and seasonal limits failed to constrain landings to the harvest limit in 2001. Projected landings exceed the limit by about 0.5 million lb (0.23 million kg).

In contrast, the management measures implemented in 2002 did not constrain landings to the harvest limit. In most states, the possession limit was 25 fish combined with a size limit of 11.5-inch TL and an open season all year (Table 24). However, a closed season was in effect in the EEZ, i.e., management measures were complicated by the August implementation of the 2002 regulations by NMFS. Specifically, the 2001 regulations remained in effect until August 2, 2002. As a result, the fishery was closed in the EEZ until May 10, 2002.

5.3.2 Status of the Stock

The most recent assessment on black sea bass, completed in June 1998, indicates that black sea bass are over-exploited and at a low biomass level (SAW 27). Fishing mortality for 1997, based on length based methods, was 0.73. The complete assessment is detailed in the "Report of the 27th Northeast Regional Stock Assessment Workshop."

The NEFSC has provided spring survey results for 2002. Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP, which was partially approved by NMFS in 1999, established a biomass threshold based on this survey. Specifically, the

biomass threshold is defined as the maximum value of a three-year moving average of the NEFSC spring survey catch-per-tow (1977-1979 average of 0.9 kg/tow). The 2001 biomass index is 0.594 kg/tow (the three-year average for 2000-2002) or about 2/3 of the threshold.

Because of the potential influence of extremely small or large number for a single tow, Gary Shepherd, NEFSC (pers. comm.) has suggested that the survey indices be log transformed to give a better indication of stock status. The transformed series indicates a general increase in the exploitable biomass since 1993. The preliminary index for 2002 of 0.626 kg/tow is the highest value in the time series (1968-2002) substantiating fishermen's observations that black sea bass have become more abundant in recent years.

The spring survey can also be used as an index of recruitment. The survey indicates good year classes were produced in 1988, and 1990 through 1992, with a moderate year class in 1995, and poor year classes in 1993, 1994, and 1996 through 1998. The 1999 index was about three times the average for the period and the fourth largest value since 1968. Results for 2000 indicate a strong year class; the index is 2.782 no./tow, the highest in the time series. Preliminary results indicate another good year class (above average) was produced in 2002.

Fishery dependent data can also be used as an indicator of stock status. For example, increased abundance is evident in the recreational data; landing-per-hour fished increased 48% from 1999 to 2001.

Relative exploitation based on the total commercial and recreational landings and the moving average of the transformed spring survey index indicates a significant reduction in mortality from 1998 to 2001 relative to 1996 and 1997 levels. Based on length frequencies from the spring survey, and assuming length of full recruitment at 25 cm, the average F based on two length based methods was 0.75 (48% exploitation rate) in 1998 (G. Shepherd pers. comm.). Length-based estimates are very sensitive to changes in the length used for full recruitment; average F's were 0.51 (37% exploitation) or 1.25 (66% exploitation) if a length of 23 or 27 cm was used in the calculations. Based on the relative index, exploitation rates in 2001 decreased relative to the 1998 values; assuming a 48% rate for 1998, the exploitation rate in 2001 was 33%. The target exploitation rate in 2001 was 37%.

5.3.3 Stock Characteristics and Ecological Relationships

The stock characteristics and ecological relationships are fully described in section 3.1.3 of Amendment 13. In addition, the advisory report on black sea bass from SAW-27 states that "recent catches are well below the historical average, age and size structure is truncated, and survey biomass indices since the late 1980s have been one-tenth of those observed in the late 1970s. Average annual fishing mortality, estimated from

length-based analyses, ranged from 0.56 to 0.79 during 1984-1997 and was 0.73 (48% exploitation) in 1997. Recruitment in 1997, as indicated by survey indices, was well below the 1972-1996 average." Additional, detailed information is available in the SAW-27 documents.

5.3.4 Economic Environment

A detailed description of the economic aspects of the commercial and recreational fisheries for black sea bass is presented in sections 3.3.3 of Amendment 13.

5.4 Marine Recreational Descriptive Statistics

In 1994, sportfishing surveys were conducted by NMFS in the Northeast Region (Maine to Virginia) to obtain demographic and economic information on marine recreational fishing participants from Maine to Virginia. Data from the surveys were then used to assess socioeconomic characteristics of these participants, as well as to identify their marine recreational fishing preferences and their perceptions of current and prospective fishery management regulations. This information will be used in future stages of the research to estimate statistical models of the demand for marine recreational fishing for eight important recreational species. The information that follows is excerpted and paraphrased from a preliminary report by Steinback *et al.* (1999).

"Marine recreational fishing is one of the most popular outdoor recreational activities in America. In 1992, the lowest level of participation during the last ten years, approximately 2.57 million residents of coastal states in the Northeast Region participated in marine recreational fishing in their own state. Participation increased approximately 5% in 1993 (2.7 million) and increased another 14% in 1994 (3.1 million), exceeding the ten-year average of 2.9 million. Although the total number of finfish caught in the Northeast Region has declined over the past ten years effort (trips) has remained relatively stable. An estimated 22.4 million fishing trips were taken in 1994, up from 19.3 million in 1993."

The following discussion contains demographic and socioeconomic characteristics of anglers, as well as their preferences, attitudes, and opinions, toward recreational fishing activities and regulations. There was little or no difference in mean age across subregions. "The largest proportion of anglers in both subregions were 36-45 years old (NE=28%, MA=25%). However, New England (NE) anglers were younger than Mid-Atlantic (MA) anglers. Results show that participation in marine recreational fishing increased with age, peaked between ages of 36 to 45, and subsequently declined thereafter. The resultant age distribution is similar to the findings of other marine recreational studies. However, the distribution is not reflective of the general population in these subregions. Bureau of the Census estimates indicate population peaks between the ages of 25 to 34 in both subregions, declines until the age of 64 and then increases substantially." The complete distribution of recreational anglers by age for

both subregions is as follows: less than 18, 25.2% in NE and 25.6% in MA; between the ages of 18-24, 9.8% in NE and 9.7% in MA; between 25-34, 16.4% in NE and 17.0% in MA; between 35-44, 16.3% in NE and 16.2% in MA; between 45-54, 11.5% in NE and 11.8% in MA; between 55-64, 8.2% in NE and 8.4% in MA; and 65 and over, 12.6% in NE and 11.3% in MA. In this survey, anglers under the age of 16 were not interviewed and are not included in the analysis.

In both subregions, at least 88% of the anglers (age 25 and over) had obtained at least a high school degree (NE=91%, MA=88%). "While the educational background is similar across subregions, a greater portion of the anglers in New England earned college or post graduate/professional degrees (NE=29%, MA=23%). The shape of the educational distribution essentially mirrored the general population in both subregions. However, the average number of anglers without a high school degree was considerably lower than Bureau of the Census estimates (age 25 and over) for the general population. On the other hand, it appears that anglers in New England and the Mid-Atlantic earned less post graduate/professional degrees than Bureau of Census estimates."

When anglers were asked to describe their racial or ethnic origin, almost all of the anglers interviewed in both subregions considered themselves to be white (NE=95%, MA=90%). "In the Mid-Atlantic, most of the remaining individuals were black (7%), leaving 3% to be of other ethnic origins. In New England, the remaining anglers were evenly distributed across other ethnic origins. The high occurrence of white fishermen is representative of the general population of the coastal states in New England. Approximately 94% of the population in 1993 was estimated to be white. However, in the Mid-Atlantic, the percentage of white anglers was considerable higher than Bureau of Census populations estimates, and the percentage of black fishermen was 12% lower."

When anglers were asked to indicate from a range of categories what their total annual household income was, only minor differences between subregions were found. "The largest percentage of household incomes fell between \$30,001 and \$45,000 for both subregions (NE=27%, MA=26%). In comparison to the general population, anglers' annual household incomes are relatively higher in both subregions...Results are consistent with previous studies which showed that angler household incomes are generally higher than the population estimates."

If it is assumed that "years fished" is a proxy for "experience," the survey data shows that anglers in New England are relatively less experienced than anglers in the Mid-Atlantic. The distribution of recreational anglers years of experience is as follows: 0-5 years of experience, 22% in NE and 16% in MA; 6-10 years of experience, 10% in NE and 10% in MA; 11-15 years of experience, 13% in NE and 14% in MA; 16-20 years of experience, 9% in NE and 9% in MA; 21-25 years of experience, 12% in NE and 12% in MA; 26-30 years of experience, 13% in NE and 12% in MA; and 30 or more years of

experience, 21% NE and 26% in MA.

Survey results show that over 50% of the anglers in both subregions indicated boat ownership (NE=51%, MA=53%). These results were obtained when anglers were asked if anyone living in their household owns a boat that is used for recreational saltwater fishing.

Regarding the duration of the interviewed trip, "at least 80% of the anglers in both subregions indicated they were on a one-day fishing trip (NE=80%, MA=84%). One-day fishing trips were defined to be trips in which an angler departs and returns on the same day. Less than one fourth of the respondents indicated the day fishing was part of a longer trip which they spent at least one night away from their residence (NE=20%, MA=16%)."

"Respondents were asked why they chose to fish at the site they were interviewed... 'Convenience' and 'better catch rates' were the main reasons why anglers chose fishing sites in both subregions. Forty-nine percent of the anglers in New England and 57% of the anglers in the Mid-Atlantic indicated 'convenience' as either first or second reason for site choice. 'Better catch rates' was the first or second stated reason for site choice by 51% of the anglers in New England and 50% of the anglers in the Mid-Atlantic. Other notable responses were 'always go there,' 'boat ramp,' 'access to pier,' and 'scenic beauty.'...Results indicate that although anglers chose fishing sites for many different reasons, sites that offered good catch rates and were convenient attracted the most anglers."

Recreational anglers were asked to rate recreational fishing against their other outdoor activities during the last two months. Specifically, they were asked if fishing was their most important outdoor activity, their second most important outdoor activity, or only one of many outdoor activities? "Over 60% of the respondents in both subregions (NE=61%, MA=68%) reported marine recreational fishing was their most important outdoor activity during the past two months. Less than 30% in both subregions (NE=27%, MA=20%) said recreational fishing was only one of many outdoor activities." This is consistent with national outdoor recreation surveys carried over the past three decades indicating that fishing is consistently one of the top outdoor recreational activities in terms of number of people who participate.

Recreational anglers ratings of reasons (7 preestablished reasons) for marine fishing are presented in Table 25. More than 65% of the anglers in both subregions said that it was very important to go marine fishing because it allowed them to: spend quality time with friends and family (NE=81%, MA=85%); enjoy nature and the outdoors (NE=89%, MA=87%); experience or challenge of sport fishing (NE=69%, MA=66%); and relax and escape from my daily routine (NE=83%, MA=86%). "The reasons that were rated as not important by the largest proportion of anglers consisted of: catch fish to eat (NE=42%), to be alone (NE=55%, MA=58%), and to fish in a tournament or when

awards were available (NE=79%, MA=73%). In the Mid-Atlantic, although to catch fish to eat was rated as being somewhat important by the largest proportion of anglers (40%), approximately 31% felt that catching fish to eat was very important. However, in New England, only 20% concurred. It is clear from these responses that marine recreational fishing offers much more than just catching fish to anglers. Over 80% of the respondents in both subregions perceived recreational fishing as a time to spend with friends and family, a time to escape from their daily routine, and time to enjoy nature and outdoors. While catching fish to eat is somewhat important to anglers, findings of this survey generally concur with previous studies that found non-catch reasons are rated highly by almost all respondents while catch is very important for about a third and catching to eat fish is moderately important for about another third."

"The economic survey sought to solicit anglers opinions regarding four widely applied regulatory methods used to restrict total recreational catch of the species of fish for which they typically fish: (1) limits on the minimum size of the fish they can keep; (2) limits on the number of fish they can keep; (3) limits on the times of the year when they can keep the fish they catch; and (4) limits on the areas they fish. Anglers were asked whether or not they support or opposed the regulations." As indicated in Table 26, strong support existed for all regulatory methods in both subregions. Limits on the minimum size of fish anglers could keep generated the highest support in both regions (NE=93%, MA=93%), while limits on the area anglers can fish, although still high, generated relatively lower support (NE=68%, MA=66%).

Regulations which limit the number of fish anglers can keep ranked second (NE=91%, MA=88%). The results from this solicitation indicate that recreational anglers in the Northeast Region appear to be conservation oriented and generally support regulations employed to restrict total catch. Not surprisingly, when analyzing anglers' opinions regarding the four widely applied regulatory methods, it was found that anglers in all modes indicated strong support for the regulatory measures. With minimum size limits generating the strongest support, followed by catch limits, seasonal closures, and lastly, area closures (Table 27). "Although party/charter, private/rental, and shore respondents did offer varying degrees of support for each of a selection of regulatory measures, similar support existed across all modes. Support was highest for common regulatory methods currently being implemented in New England and the Mid-Atlantic (e.g., size and bag limits), than for area and seasonal closures."

5.5 Vessel Trip Report (VTR) Data

Vessel Trip Report data (logbook data) has been collected by NMFS since 1994 for the recreational and commercial fisheries. In the recreational fishery, this data is collected from party/charter vessels that have permits to operate in Federal waters as required by the FMPs or amendments for Summer Flounder, Scup, Black Sea Bass, Northeast Multispecies, and Atlantic Mackerel, Butterfish, and Squids. VTR data was used to describe summer flounder, scup, and black sea bass catch disposition as well as

contribution of these species to the total catch made by party/charter vessels for 1996 through 2001. VTR data for 1994 and 1995 was not used because reporting compliance was medium to low. Furthermore, neither year has been completely audited. As such, the VTR data for 1996 through 2001 is the most recent and complete data submitted by fishermen.

General trends in VTR data (1996-2001) for party/charter boats indicate that for all species combined, landings increased from a low of 3.30 million fish in 1996 to a high of 3.96 million fish in 2001. Summer flounder landings decreased from a high of 369,000 fish in 1997 to a low of 137,000 fish in 2001. Scup landings increased from a low of 252,000 fish in 1997 to a high of 954,000 fish in 2001. Black sea bass landing fluctuated between a high of 1.20 million fish in 1996 and a low of 471,000 fish in 1998. In 2001, 995,000 black sea bass were landed, representing an 8% decrease from 2000 (Table 28). General trends in VTR data indicate that the number of fish discarded by party/charter boats has increased overall since 1996. The number of fish discarded from 2000 to 2001, increased by 84% for scup, 8% for black sea bass, and 4% for all species combined (Table 28). However, the number of summer flounder discarded by party/charter boats decreased by 30% from 2000 to 2001.

Tables 13-15 detail the proportion of summer flounder, scup, and black sea bass to the total catch (by number) made by anglers on party/charter vessels for the combined years of 1996-2001. Summer flounder represented 12% of the total catch (by number) for the 1996-2001 period (Table 13). The contribution of summer flounder to the total catch of party/charter vessels fluctuated throughout the year, ranging from 2% or less in January through April to 22% in July. The largest proportion of summer flounder was caught from May through September (Table 13). Analysis of the recreational landings by state indicates that the proportion of summer flounder in the total catch ranged from less than 1% to 27% for party/charter vessels by state (Table 13).

Vessel trip reporting data indicate that scup represented 11% of the total catch (by number) for the 1996-2001 period (Table 14). The contribution of scup to the total catch of party/charter vessels fluctuated throughout the year, ranging from 5% or less in January through May to 28% in October. The largest proportion of scup was caught from September through November (Table 14). Analysis of the recreational landings by state indicates that the proportion of scup in the total catch ranged from less than 1% to 25% for party/charter vessels by state (Table 14).

Vessel trip reporting data indicate that black sea bass represented 24% of the total catch (by number) for the 1996-2001 period (Table 15). The contribution of black sea bass to the total catch of party/charter vessels fluctuated throughout the year, ranging from 10% in January through April to 50% in November, with the largest proportion of black sea bass caught from May through December (Table 15). Analysis of the recreational landings by state indicates that the proportion of black sea bass to the total catch ranged from less than 1 to 61% for party/charter vessels by state (Table 15).

6.0 Analysis of Impacts on the Environment

The environment in which these fisheries are prosecuted and the impact of these fisheries on the environment were described in complete detail in Amendment 13. The black sea bass and scup fisheries are managed by the Council from Maine to Cape Hatteras, North Carolina, while the summer flounder fishery is managed by the Council from Maine to the southern border of North Carolina. The analyses presented in Amendment 13 included considerations of the impacts of the overall management programs on the environment.

The measures in each of the recreational alternatives do not contain major changes to existing management programs. As stated in the FMP, the recreational specifications may alter the fishing season, minimum fish size, and the possession limit to achieve the recreational harvest limit. Because none of the alternatives contain major changes to existing management programs, it is concluded that the alternatives will not result in significant impacts to the environment. However the impact of each alternative is analyzed below.

6.1 Alternative 1 (Preferred)

Alternative 1, the preferred alternatives for summer flounder, scup, and black sea bass are fully described in this EA under section 3.1.

6.1.1 Biological Impacts

6.1.1.1 Summer Flounder (No Action)

The Preferred Alternative for summer flounder would require states to use conservation equivalency to develop state-specific management measures in 2003. In 2002, state-specific size, possession, and seasonal limits constrained landings below the coastwide harvest limit. Projected landings for 2002 are 8.13 million lb (3.69 million kg) or 1.59 million lb (0.72 million kg) less than the limit of 9.72 million lb (4.41 million kg). Projected 2002 state landings were less than the 2002 state-specific targets for all states, except Virginia which exceeded its target by 5% (Table 29). Coastwide landings in 2003 could be 14% higher than 2002 projected landings and still achieve the 2003 harvest limit of 9.28 million lb (4.21 million kg).

Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. A comparison of projected landings with state-specific targets indicates that in 2002 all states constrained their 2002 landings below their target, except for Virginia. As such Virginia is the only state required to reduce landings in 2003 (by 11%; Table 1). It is expected that state-specific management measures for summer flounder will constrain summer

flounder landings to the recreational harvest limit in 2003. As such, there will be no biological impacts as a result of this alternative (Preferred: No Action Alternative).

6.1.1.2 Scup

The Preferred Alternative for scup includes a 10-inch TL minimum fish size, a 50-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through November 30.

The 2003 specifications for scup implemented a recreational harvest limit of 4.01 million lb (1.82 million kg). This recreational harvest limit is 48% higher than the 2002 limit. However, as indicated in section 2.0 of the EA, an estimated 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit.

Possession and size limits will be used to constrain landings to the harvest limit in 2003. Potential reductions need to be adjusted to account for levels of effectiveness. It is improbable that a regulation will be 100% effective. In fact, analysis of catch and length frequencies indicate that anglers do exceed the possession limit and land scup smaller than the size limit (Table 30). In 2001, the Board, with the assistance of the Commission's Technical Committee, determined that an effective way to deal with this inefficiency was to remove fish less than the size limit or in excess of the possession limit from the data before constructing the table that is used to determine the reductions associated with the size/possession limit combinations. The adjusted table can then be used to guide recommendations on the appropriate limits for 2003 (Table 3).

Recreational limits act to constrain landings as the availability of fish increases. If availability is low, few anglers will be affected by the regulations and landings will be lower than the harvest limit. As availability of scup to anglers increases, as expected for 2003, constraints imposed by the limits increase, i.e., anglers are more constrained by a size limit when there is a good year class of scup produced and more constrained by a possession limit when the availability of larger fish is high. The most recent assessment indicates that substantial biomass could be added to the stock by 2003 and availability of legal-sized fish could increase (section 2.0 of the EA). The correct management measures will allow anglers to land up to the harvest limit but not exceed the limit.

Analysis of length frequencies indicate that landings were constrained by the 10-inch TL size limit implemented in the states from Rhode Island to New Jersey. Approximately 8.8% of the measured fish were less than 10-inch TL in the first four waves of 2002 (Table 30). In 2001, almost 20.1% of the measured fish were less than 10-inch TL. In addition, Massachusetts, one of the four states that accounted for the majority of the landings, was the only state to have higher landings in 2002 relative to 2001; they were also the only state with a majority of the landings that had a 9-inch TL size limit. Additionally, almost all of the scup are sexually mature by 10-inch TL; thus, a 10-inch TL size limit could also increase spawning potential in the stock.

Landing frequencies for the first four waves of 2002 indicate about 90% of the trips had 8 or less fish per trip with about 50% of the trips landing 3 or less scup (Table 31). Anglers were more successful in 2001 than they were in 2002. In 2001, about 90% of the successful trips landed 12 or less scup per trip (Table 32).

If availability of scup increases as expected, the possession limit will act to control landings and will have more of an effect than the size limit. However, the possession limit depends on the length of the closed season. For example, because a 10-inch TL minimum size limit combined with a 15-fish possession limit could reduce landings by 27%, a seasonal closure would not be required. However, maintaining the current 50-fish possession limit with the 10-inch TL minimum size limit, would require that a seasonal closure be implemented to reduce landings. That is why the Council adopted open seasons of January 1 through February 28, and July 1 through November 30 for 2003.

Cumulative reductions associated with size/possession limits and seasonal closures are not additive, i.e., the total recreational reduction does not equate to the sum of the size/possession limit reduction and the seasonal closure reduction. To derive the cumulative effect, an approach similar to that used in other Commission FMPs is used. Specifically, the following equation is used:

$$\text{Total Reduction} = X + [(1-X)*Y]$$

where X=percent reduction associated with seasonal closures and Y=the percent reduction associated with the size/possession limit. In order to achieve a combined effect of 27% with a 50-fish possession limit and a 10-inch TL minimum fish size, the seasonal closure would have to be 19%.

The Council's preferred alternative includes a 10-inch TL minimum fish size, a 50-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through November 30. Employing the formula presented above and using the reductions associated with the size/bag limits shown in Table 3 (adjusted for effectiveness of 2001 scup regulations) and seasonal closures shown in Table 4, the preferred alternative could reduce recreational landings by 27% in 2003. Projected reductions are based on the assumption that regulations would be implemented by all the states. Because these measures should constrain scup landings to the 2003 recreational harvest limit, they are not expected to result in biological impacts (positive or negative) relative to the No Action Alternative (Alternative 2).

The Board adopted conservation equivalency for scup for 2003. As such, it is unlikely that any state will adopt the proposed coastwide management measures and only federally permitted party/charter boats would be impacted by Alternative 1.

6.1.1.3 Black Sea Bass

March 26, 2003

The Preferred Alternative for black sea bass includes a 12-inch TL minimum fish size, a 25-fish possession limit, and open seasons of January 1 through September 1, and September 16 through November 30. The black sea bass recreational harvest limit for 2003 is 3.43 million lb (1.56 million kg), the same as the 2002 recreational harvest limit. However, the 2002 recreational landings are projected to be 4.40 million lb (2.00 million kg) and it is estimated that a 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit for black sea bass.

Possession and size limits can be used to constrain landings to the harvest limit. However, potential reductions need be adjusted to account for levels of effectiveness. It is improbable that a regulation will be 100% effective. In fact, analysis of catch and length frequencies indicate that anglers do exceed the possession limit and land black sea bass smaller than the size limit (Table 33). In 2001, the Board, with the assistance of the Commission's Technical Committee, determined that an effective way to deal with this inefficiency was to remove fish less than the size limit or in excess of the possession limit from the data before constructing the table used to determine the reductions associated with the size/possession limit combinations was constructed. The adjusted table can then be used to guide recommendations on the appropriate limits for 2003.

Recreational limits act to constrain landings as the availability of fish increases. If availability is low, few anglers will be affected by the regulations and landings will be lower than the harvest limit. As availability of black sea bass to anglers increases, as expected for 2003, constraints imposed by the limits increase, i.e., anglers are more constrained by a size limit when there is a good year class of black sea bass produced and more constrained by a possession limit when the availability of larger fish is high. Based on the NEFSC spring survey, black sea bass stock size has increased in recent years and is likely to increase in 2003. In fact, the index for 2002 was the highest value in the time series, 1968-2002. Survey results indicate that the three-year moving average for 2000-2002 is 65% larger than the value for 1999-2001. In addition, the recruitment index for 2000 is the highest in the time series and it appears that the 2002 year class is also above average. The correct limits will allow anglers to land up to the harvest limit but not exceed the limit in 2003.

Analysis of length frequencies indicates that landings were constrained by the 11.5-inch TL size limit in the first four waves of 2002 (Table 33). A total of 9.0% of the measured black sea bass was less than 11.5-inch TL in 2002 samples compared to 20.5% in 2001, the year before the 11.5-inch size limit was implemented.

Landing frequencies for the first four waves of 2002 indicate that 90% of the trips landed 11 or less fish per trip with slightly less than 50% of the successful trips landing a little more than 2 black sea bass (Table 34). This compares to 2001 when 50% of the trips landed slightly less than 2 black sea bass per trip (Table 35).

If availability of black sea bass increases as expected, the possession limit will act to control landings and will have more of an effect than the size limit. However, the size of the possession limit will depend on the length of the closed season. For example, maintaining the current 25-fish possession limit with the 11.5-inch TL minimum size limit, would require that a seasonal closure be implemented to reduce landings by the required 27%. However, a 12.5-inch TL combined with a 25-fish possession limit could reduce landings by 30%, requiring no closed season.

Cumulative reductions associated with size/possession limits and seasonal closures are not additive, i.e., the total recreational reduction does not equate to the sum of the size/possession limit reduction and the seasonal closure reduction. To derive the cumulative effect, an approach similar to that used in other Commission FMPs is used. Specifically, the following equation is used:

$$\text{Total Reduction} = X + [(1-X)*Y]$$

where X=percent reduction associated with seasonal closures and Y=the percent reduction associated with the size/possession limit.

The Council's preferred alternative includes a 12-inch TL minimum fish size, a 25-fish possession limit, and open seasons of January 1 through September 1, and September 16 through November 30. Employing the formula presented above and using the reductions associated with the size/bag limits shown in Table 5 (adjusted for effectiveness of 2002 black sea bass regulations) and seasonal closures shown in Table 6, the preferred alternative could reduce recreational landings by 27% in 2003. Projected reductions are based the assumption that regulations would be implemented by all the states. These measures are expected to constrain black sea bass landings to the 2003 recreational harvest limit. As such, this alternative will result in positive biological impacts relative to the No Action Alternative (Alternative 2).

6.1.2 Socioeconomic Impacts

6.1.2.1 Summer Flounder

The preferred alternative will allow states to develop conservation equivalent measures (section 5.2.1 of the RIR/IRFA). Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. This would enable the summer flounder fishery to operate in a way that dissipates potential adverse economic effects in specific states. Table 36 details the proportion of summer flounder harvested in state and Federal waters. On average (1995-2001), approximately 92% of the harvested summer flounder (by number) came from state waters. The Board will either approve or disapprove each state's measures in February 2003 (Table 2). No analysis is provided here since the measures have yet

to be adopted by the states.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to regulations implemented through conservation equivalency. It is possible that proposed management measures by states could restrict the recreational fishery (i.e., via a reduced possession limit, larger minimum fish size, or closed season) for 2003. However, due to lack of data, these effects cannot be quantified (sections 4.0 and 5.0 of the RIR/IRFA). The proposed recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2003.

There is no data available at the port or community level that shows the dependence of the party/charter boat fishery, the private/rental boat fishery, or the shore fishery on summer flounder, scup, and black sea bass. However, for party/charter vessels, the largest number of permit holders for these species are located in Massachusetts, followed by New Jersey, and New York (section 4.2 of the 2002 Summer Flounder, Scup, and Black Sea Bass Specifications). Projected data from MRFSS indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region (section 5.1.1 of the RIR/IRFA).

A description by port of importance to the commercial summer flounder, scup, and black sea bass fisheries is presented in Amendment 13. In addition to this, demographic and economic information on marine recreational fishing participants by region is presented in section 5.4 of the EA. There is a distinction to be made between negative impacts to individuals and negative impacts to the larger communities. If the number of affected individuals in a community is large (i.e., large numbers of recreational anglers in a community), the degree of impacts on individuals and communities would be expected to be the same. However, where the number of recreational anglers in a community is proportionally small, the degree of impacts on individuals and communities would differ. In this situation, some individual fishermen and their families could find the final recreational management measures for 2003 to have significant impacts, whereas the larger communities and towns in which they live would not. The economic diversity of a community may enable a community to be sustained, although the recreational fishing sector might be adversely impacted. On the other hand, small, remote and less economically diverse communities that are more dependent upon recreational fishing are less likely to be sustained through restrictive regulations.

Even though, the proposed management measures could affect the demand for trips for a specific species, it is not expected that it would affect in a negative way the overall number of recreational fishing trips in the North and Mid-Atlantic regions. This is because recreational anglers may choose not to stop recreational fishing altogether,

and may choose to fish for alternative species (spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), or fish within the new limits established by the 2003 regulations. As such, there should not be significant adverse impacts to ports and communities as a result of the 2003 measures.

6.1.2.2 Scup

The impacts of recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.2.2 of the RIR/IRFA.

In summary, the economic impacts of Alternative 1 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one scup smaller than 10 inches TL, that landed more than 50 scup, or that landed at least one scup during the proposed closed season of March 1 through June 30, and December 1 through December 31. The analysis concluded that the measures would affect 1% or less of the party/charter trips in five of 11 states (Rhode Island, New York, New Jersey, Maryland, North Carolina) to 10% in Massachusetts, with impacts identified for Massachusetts (\$421,057), Rhode Island (\$2,324), New York (\$1,829), New Jersey (\$6,475), Maryland (\$25,450), and North Carolina (\$8,064). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine, New Hampshire, Connecticut, Delaware, and Virginia.

The average maximum gross revenue loss per party/charter vessel associated with the Council's preferred alternative was estimated to be \$8,593 in Massachusetts, \$166 in Rhode Island, \$59 in New York, \$185 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. In addition, although the Federal coastwide measures would apply to federally permitted vessels wherever they fish, state-only permitted vessels will likely be fishing under different recreational measures for scup because the Commission has adopted a conservation equivalency addendum. Furthermore, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is

possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.1.2.3 Black Sea Bass

The impacts of recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.2.3 of the RIR/IRFA.

In summary, the economic impacts of Alternative 1 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one black sea bass smaller than 12-inch TL, that landed more than 25 black sea bass, or that landed at least one black sea bass during the proposed closed season of September 2 through September 15 and December 1 through December 31. The analysis concluded that the measures would affect 1% or less of the party/charter trips in most states to 3% in New Jersey and 4% in Delaware, with impacts identified for Massachusetts (\$1,805), Rhode Island (\$5,404), Connecticut (\$368), New York (\$20,332), New Jersey (\$441,702), Delaware (\$89,544), Maryland (\$41,331), Virginia (\$19,418), and North Carolina (\$364). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine and New Hampshire.

The average maximum gross revenue loss per party/charter vessel associated with the Council's preferred alternative was estimated to be \$19 in Massachusetts, \$193 in Rhode Island, \$46 in Connecticut, \$442 in New York, \$8,334 in New Jersey, \$44,772 in Delaware, \$13,777 in Maryland, \$1,022 in Virginia, and \$52 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. Furthermore, the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the

affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.1.3 EFH Impacts

The environment in which these fisheries are prosecuted was described in Amendment 13, section 3.2.4. The fishery management units for black sea bass and scup are from Maine to Cape Hatteras, North Carolina, while the summer flounder fishery management unit is from Maine to the southern border of North Carolina. The analyses in Amendment 13 include the impacts of the overall management measures on stock health and abundance, spawning stock biomass, and protected species, as well as on the economy and affected fishermen.

The measures in each of the recreational alternatives do not contain major changes to existing management measures. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. The impacts of any changes in recreational harvest limit were analyzed in the EA for the 2003 quota specifications.

The principal gear used in the recreational fishery for summer flounder, scup, and black sea bass fishery is rod and reel and handline. Although quantification of specific gear types on various bottom habitats is poorly understood, rod and reel and handlines are generally not associated with adverse impacts. Finally, because each of the alternatives does not contain major changes to existing management measures, it is concluded that the alternatives will not result in significant impacts to EFH.

6.1.4 Impacts on Protected Resources

Numerous species of marine mammals and threatened or endangered species occur in the Northwest Atlantic Ocean. These species are described in detail in section 5.4.3.1 of Amendment 13. Recreational fisheries, in general, have very limited interactions with marine mammals and endangered or threatened species. The impacts of the summer flounder, scup, and black sea bass recreational fisheries upon endangered and threatened species and marine mammal populations are also described in detail in Amendment 13. However, recreational fishermen do contribute to difficulties for species of endangered and threatened marine life in that it is estimated that recreational fishermen discard over 227 million lb (103 million kg) of litter each year (O'Hara *et al.* 1988). More than nine million recreational vessels are registered in the United States. The greatest concentrations of recreational vessels in the United States are found in the waters off New York, New Jersey, the Chesapeake Bay, and Florida (O'Hara *et al.*

1988). Recreational fishermen are also a major source of debris in the form of monofilament fishing line. The amount of fishing line lost or discarded by the 17 million U.S. fishermen during an estimated 72 million fishing trips in 1986 is not known, but if the average angler snares or cuts loose only one yard of line per trip, the potential amount of deadly monofilament line is enough to stretch around the world (O'Hara *et al.* 1988). Although the recreational fishery may impact these marine species, nothing considered in these alternatives, relative to the status quo, will have a significant impact on marine mammals and threatened or endangered species.

The measures in the alternatives do not contain major changes to existing management measures. Changes in overall fishing effort as a result of changes in recreational harvest limits are unknown. Because the alternatives are not expected to cause large changes in fishing effort, it is concluded that the alternatives will not affect endangered and threatened species or critical habitat in any manner not considered in prior consultations. Therefore, any potential negative impacts on protected species associated with the alternatives considered in the 2003 recreational summer flounder, scup, and black sea bass specifications are expected to be negligible.

6.2 Alternative 2

6.2.1 Biological Impacts

6.2.1.1 Summer Flounder

The Non-Preferred Coastwide Alternative (Alternative 2) adopted by the Council and Board was a 17-inch TL minimum fish size, an 4-fish possession limit, and no closed season for 2002.

The recreational harvest limit for 2003 is 9.28 million lb (4.21 million kg). Based on 2001 MRFSS data for waves 1-5 (January through October), summer flounder recreational landings for 2002 are projected to be 8.13 million lb (3.69 million kg).

In 2002, some states implemented more restrictive minimum size limits and possession limits than in 2001 (Tables 17 and 18). In addition, most states implemented a closed season in 2002. The summer flounder recreational management measures (minimum size, possession limit, and season) implemented by states in 2002 (No Action Alternative) are presented in Table 18.

The decrease in angler catches and landings of summer flounder in 2002 may be explained by regulatory effects, a reduction in the availability of summer flounder to anglers, and a drop in participation in the fishery by anglers. In regard to regulations, 2002 possession limits ranged from 4 to 8 fish in the various states. Analysis of coastwide intercept data indicates that 90% of the trips landed less than 3 fish in 2002 based on data through wave 4 (Table 37). This compares to 90% of the trips landing 4

fish or less in 1992, the year before the fishery was regulated with possession limits (Table 38).

Landings were constrained by the various minimum size limits that were in effect in 2002 based on an analysis of length frequencies (Table 39). However, there was significant numbers of fish measured less than the size limit in some states (Table 39). The proportion of measured fish less than the specific size limit ranged from 1% (Connecticut) to 75% (North Carolina).

Analysis of wave data suggests that some landings may have been affected by seasonal restrictions in 2002 (Table 40). Obviously, greater effects would be associated with seasonal closures in waves with a higher proportion of landings.

It is probable that availability of summer flounder to anglers was also a factor in the reduced landings in 2002. The drop in catch per trip may have resulted from distributional changes in summer flounder abundance. In fact, bottom temperatures in the shelf region off the coast of New Jersey were noticeably warmer in the early spring and somewhat warmer in the early summer relative to more recent years (David Mountain pers. comm.). These temperature changes may have reduced the availability of legal sized flounder to New Jersey anglers in 2002.

Preliminary data also suggests that the number of angler trips directed towards summer flounder may have dropped in 2002. However, analysis of the effort data is complicated by the data collection problems associated with the wave 3 telephone survey data (Alan Lowther pers. comm.). A more complete analysis will be available once the problem is solved. However, a drop in angler effort combined with the reduced catch per trip would result in a reduction in recreational landings.

Because there are no required reductions to achieve the 2003 recreational harvest limit, the tables from 2001 would have to be used to guide management recommendations, e.g., data from 2002 could not be used to evaluate size limits less than the size limit in place for 2002. These tables indicate that the non-preferred coastwide alternative could reduce recreational landings by 32% (Table 7). Projected reductions are based on the assumption that regulations would be implemented by all the states. A 32% reduction in landings is not required to achieve the recreational harvest limit. It is expected that the non-preferred coastwide alternative would reduce the recreational landings below the 2003 recreational harvest limit. As such, this alternative is expected to result in positive biological impacts, relative to the No Action Alternative (Alternative 1).

6.2.1.2 Scup (No Action Alternative)

The No Action Alternative (Alternative 2) for scup includes a 10-inch TL minimum fish size, 20-fish possession limit, and open seasons of January 1 through February 28, and July 1 through October 2. This alternative is the No Action Alternative for scup. It is the

alternative that was implemented by NMFS in the EEZ for the 2002 recreational fishing season. However, this alternative was not implemented by the states. In 2002, the Board adopted conservation equivalency and the management alternatives that were implemented by the states did not constrain recreational landings to the harvest limit. The 2002 scup recreational landings are projected to be 3.76 million lb, while the recreational harvest limit for 2002 was 2.71 million lb. However, the 2003 specifications for scup implemented a recreational harvest limit of 4.01 million lb (1.82 million kg), 48% higher than the recreational harvest limit for 2002 and 7% higher than the 2002 recreational landings. As indicated in section 2.0 of the EA, an estimated 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit.

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 6.1.1.2 of the EA is also relevant to this section. Employing the formula presented in section 6.1.1.2 and using the reductions associated with the size/bag limits shown in Table 3 and seasonal closures shown in Tables 4a-b, this alternative could reduce scup recreational landings by 57% in 2003. Projected reductions are based the assumption that regulations would be implemented by all the states. These measures are expected to constrain scup landings below the 2003 recreational harvest limit. As such, this alternative (No Action Alternative) is expected to result in positive biological impacts.

6.2.1.3 Black Sea Bass

Alternative 2 (No Action Alternative) for black sea bass includes an 11.5-inch TL minimum fish size, 25-fish possession limit, and an open season of January 1 through December 31. This alternative is the No Action Alternative for black sea bass. This alternative did not constrain black sea bass landings to the recreational harvest limit in 2002. The 2002 black sea bass recreational landings are projected to be 4.68 million lb, while the recreational harvest limit for 2002 was 3.43 million lb. The 2003 specifications for black sea bass also implemented a recreational harvest limit of 3.43 million lb (1.1.56 million kg). As indicated in section 2.0 of the EA, an estimated 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit.

Considering that this alternative did not act to constrain recreational black sea bass landings in 2002, it is not expected to achieve the same recreational harvest limit in 2003. Additionally, survey indices indicate that the black sea bass stock biomass may be increasing. These measures are not expected reduce recreational landings of black sea bass in 2003. As such, adverse biological impacts may result from this alternative (No Action Alternative).

6.2.2 Socioeconomic Impacts

6.2.2.1 Summer Flounder

March 26, 2003

The impacts on recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.3.1 of the RIR/IRFA.

In summary, the economic impacts of Alternative 2 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one summer flounder smaller than 17-inch TL or landed more than 4 summer flounder. The analysis concluded that the measures would affect 1% or less of the party/charter trips in most states, with impacts identified for Massachusetts (\$927), Rhode Island (\$15,850), New York (\$155,636), New Jersey (\$22,208), Delaware (\$570), Maryland (\$570), Virginia (\$7,362), and North Carolina (\$161). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine, New Hampshire, and Connecticut.

The average maximum gross revenue loss per party/charter vessel associated with this alternative was estimated to be \$9 in Massachusetts, \$634 in Rhode Island, \$2,993 in New York, \$347 in New Jersey, \$285 in Delaware, \$190 in Maryland, \$409 in Virginia, and \$23 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. In addition, although the Federal coastwide measures would apply to federally permitted vessels wherever they fish, state-only permitted vessels will likely be fishing under different recreational measures for summer flounder because the Commission has adopted a conservation equivalency addendum. Furthermore, the universe of party/charter vessels that participated in the summer flounder fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal summer flounder permit because they only fish in state waters are not represented in this assessment. Considering that 92% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal summer flounder permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.2.2.2 Scup

March 26, 2003

The impacts of recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.3.2 of the RIR/IRFA.

In summary, the economic impacts of Alternative 2 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one scup smaller than 10-inch TL, that landed more than 20 scup, or that landed at least one scup during the proposed closed season of March 1 through June 30, and October 3 through December 31. The analysis concluded that the measures would affect less than 1% of angler trips taken aboard party/charter boats in New Jersey, Delaware, Maryland, and North Carolina; however, a substantial number of angler trips would have been constrained by the Alternative 2 management measures in Massachusetts (11%), Rhode Island (4%), and New York (5%), with impacts identified in Massachusetts (\$486,423), Rhode Island (\$55,664), New York (\$702,429), New Jersey (\$67,060), Maryland (\$25,450), and North Carolina (\$8,064). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified in Maine, New Hampshire, Connecticut, Delaware, and Virginia.

The average maximum gross revenue loss per party/charter vessel associated with this alternative was estimated to be \$9,927 in Massachusetts, \$3,976 in Rhode Island, \$22,659 in New York, \$1,916 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. In addition, although the Federal coastwide measures would apply to federally permitted vessels wherever they fish, state-only permitted vessels will likely be fishing under different recreational measures for scup because the Commission has adopted a conservation equivalency addendum. Furthermore, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release

fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.2.2.3 Black Sea Bass

The impacts of recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.3.3 of the RIR/IRFA.

In summary, the economic impacts of Alternative 2 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one black sea bass smaller than 11.5-inch TL or that landed more than 25 black sea bass. The analysis concluded that the measures would affect 1% or less of the party/charter trips in most states to 2% in New Jersey and 3% in Delaware, with impacts identified for Rhode Island (\$1,960), Connecticut (\$368), New Jersey (\$248,570), Delaware (\$82,988), Maryland (\$16,329), Virginia (\$21,261), and North Carolina (\$119). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine, New Hampshire, Massachusetts, and New York.

The average maximum gross revenue loss per party/charter vessel associated with this alternative was estimated to be \$70 in Rhode Island, \$46 in Connecticut, \$4,690 in New Jersey, \$41,494 in Delaware, \$5,443 in Maryland, \$1,119 in Virginia, and \$17 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. Furthermore, the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.2.3 EFH Impacts

March 26, 2003

The EFH impacts for all recreational specification alternatives for summer flounder, scup, and black sea bass are fully described in section 6.1.3.

6.2.4 Impacts on Protected Resources

Impacts on protected resources for all recreational specification alternatives for summer flounder, scup, and black sea bass are fully described in section 6.1.4.

6.3 Alternative 3

6.3.1 Biological Impacts

6.3.1.1 Summer Flounder

Alternative 3 is the precautionary default measures and includes an 18-inch TL minimum fish size, a 1-fish possession limit, and no closed season. Specific states that fail to implement conservation equivalent measures as specified in Framework 2 to the Summer Flounder, Scup, and Black Sea Bass FMP would be required to implement precautionary default measures. Precautionary default measures are defined as measures that would achieve at least the overall required reduction in landings for each state. The precautionary default measures would reduce state specific landings from 41% to 88% in 2003 (Table 8). The state specific reduction in landings associated with the precautionary default measures are substantially higher than the state reductions to be implemented via conservation equivalency. As such, it is expected that states will avoid the impacts of precautionary approach measures by establishing conservation equivalent management measures.

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 6.2.1.1 of the EA is also relevant to this section. Because there are no required reductions, the tables from last years analysis would have to be used to guide management recommendations, e.g., data from 2002 could not be used to evaluate size limits less than the size limit in place for 2002. These tables indicate that the Non-Preferred Precautionary Default alternative could reduce coastwide recreational landings by 67% (Table 7; adjusted for effectiveness of 2001 summer flounder regulations). Projected reductions are based on the assumption that regulations would be implemented by all the states. A reduction in landings is not required to achieve the recreational harvest limit. It is expected that the non-preferred coastwide alternative would reduce the recreational landings below 2003 recreational harvest limit. As such, this alternative may result in positive biological impacts relative to the No Action Alternative (Alternative 1)

6.3.1.2 Scup

Alternative 3 for scup includes a 10-inch TL minimum fish size, a 50-fish possession limit, and open seasons of January 1 through February 28, and July 14 through December 31 for the 2003 recreational scup fishery. This alternative is a non-preferred alternative recommended to the Council by the monitoring. As indicated in section 2.0 of the EA, an estimated 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit.

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 6.1.1.2 of the EA is also relevant to this section. Employing the formula presented in section 6.1.1.2 and using the reductions associated with the size/bag limits shown in Table 3 and seasonal closures shown in Tables 4a-b, this alternative is expected to reduce recreational landings by 27% in 2003. Projected reductions are based the assumption that regulations would be implemented by all the states. These measures are expected to constrain scup landings to the 2003 recreational harvest limit. As such, this alternative is not expected to result in biological impacts (positive or negative) relative to the No Action Alternative (Alternative 2).

6.3.1.3 Black Sea Bass

Alternative 3 for black sea bass includes a 12.5-inch TL minimum fish size, a 25-fish possession limit, and an open season of January 1 through December 31. This alternative a non-preferred alternative recommended to the Council by the Monitoring Committee. The 2003 black sea bass recreational landings are projected to be 4.40 million lb, while the recreational harvest limit for 2002 was 3.43 million lb. However, the 2003 specifications for black sea bass also implemented a recreational harvest limit of 3.43 million lb (1.1.56 million kg). As indicated in section 2.0 of the EA, an estimated 27% reduction in landings is necessary to achieve the 2003 recreational harvest limit.

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 6.1.1.3 of the EA is also relevant to this section. Employing the formula presented in section 6.1.1.3 and using the reductions associated with the size/bag limits shown in Table 5 and seasonal closures shown in Tables 6a-b, this alternative could reduce black sea bass recreational landings by 27% in 2003. Projected reductions are based the assumption that regulations would be implemented by all the states. These measures are expected to constrain black sea bass landings to the 2003 recreational harvest limit. As such, this alternative is expected to result in positive biological impacts relative to the No Action Alternative (Alternative 2).

6.3.2 Socioeconomic Impacts

6.3.2.1 Summer Flounder

The impacts of recreational management measures on the demand for trips and the social impacts of recreational regulations on ports and communities described in section 6.1.2.1 of the EA also apply here.

As required under conservation equivalency guidelines, the Council and Board also must adopt a Precautionary Default Alternative for Federal permit holders landing summer flounder in states that do not submit approved conservation equivalency measures. The Precautionary Default Alternative consists of one fish per person at 18 inches. The precautionary default measures result in a coastwide reduction in landings of 67% and state reductions ranging from 41% in Delaware to 88% in North Carolina for 2003 (Table 8). The state-specific reduction in landings associated with the Precautionary Default Alternative are substantially higher than the state-specific reductions that are contained in the Conservation Equivalency Alternative (Tables 1 and 8). As such, it is expected that states will avoid the impacts of the Precautionary Default Alternative by establishing conservation equivalent measures. In other words, because states have a choice, it is more rational for the states to adopt the conservation equivalent measures that result in fewer adverse economic impacts than to acquiesce to the much more restrictive measures contained in Non-Preferred Alternative 3 for Summer Flounder - Precautionary Default.

6.3.2.2 Scup

The impacts on recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.4.2 of the RIR/IRFA.

In summary, the economic impacts of Alternative 3 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one scup smaller than 10-inch TL, that landed more than 50 scup, or that landed at least one scup during the proposed closed season of March 1 through July 13. The analysis concluded that the measures would affect 1% or less of the party/charter trips in most states to 11% in Massachusetts, with impacts identified for Massachusetts (\$469,518), Rhode Island (\$9,576), New York (\$81,902), New Jersey (\$19,880), Maryland (\$25,450), and North Carolina (\$8,064). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine, New Hampshire, Connecticut, Delaware, and Virginia.

The average maximum gross revenue loss per party/charter vessel associated with this alternative was estimated to be \$9,582 in Massachusetts, \$684 in Rhode Island, \$2,642 in New York, \$568 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers would continue to take party/charter vessel trips even if the restrictions limit their landings. In addition, although the Federal

coastwide measures would apply to federally permitted vessels wherever they fish, state-only permitted vessels will likely be fishing under different recreational measures for scup because the Commission has adopted a conservation equivalency addendum. Furthermore, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.3.2.3 Black Sea Bass

The impacts of recreational management measures on the demand for trips and the social impacts of recreational measures on ports and communities described in section 6.1.2.1 of the EA also apply here. The economic impacts of the proposed management measures under this alternative are fully described in section 5.4.3 of the RIR/IRFA.

In summary, the economic impacts of Alternative 3 are as follows: Impacted trips were defined as trips taken aboard party/charter vessels in 2002 that landed at least one black sea bass smaller than 12.5-inch TL or that landed more than 25 black sea bass. The analysis concluded that the measures would affect approximately 1% or less of the party/charter trips in most states to 3% in New Jersey and 5% in Delaware, with impacts identified for Rhode Island (\$1,960), Connecticut (\$368), New York (\$3,220), New Jersey (\$483,095), Delaware (\$125,132), Maryland (\$40,395), Virginia (\$29,602), and North Carolina (\$364). The statewide revenue losses associated with these impacts are shown in parentheses. No impacts were identified for Maine, New Hampshire, and Massachusetts.

The average maximum gross revenue loss per party/charter vessel associated with this alternative was estimated to be \$70 in Rhode Island, \$46 in Connecticut, \$70 in New York, \$9,115 in New Jersey, \$62,566 in Delaware, \$13,465 in Maryland, \$1,558 in Virginia, and \$52 in North Carolina. It should be noted that this analysis likely overestimates the potential revenue impacts of these measures because some anglers

would continue to take party/charter vessel trips even if the restrictions limit their landings. Furthermore, the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

There is very little information available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed fishing regulations. It is possible that the proposed management measures could restrict the recreational fishery for 2003 and cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season). However, due to lack of data, these effects cannot be quantified. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.3.3 EFH Impacts

The EFH impacts for all recreational specification alternatives for summer flounder, scup, and black sea bass are fully described in section 6.1.3.

6.3.4 Impacts on Protected Resources

Impacts on protected resources for all recreational specification alternatives for summer flounder, scup, and black sea bass are fully described in section 6.1.4.

6.4 Cumulative Impacts of the Preferred Alternative

Although the measures proposed in this EA are only for the year 2003 recreational fisheries, these measures have the potential to result in cumulative impacts on the environment. The potential combined economic impacts of the summer flounder, scup, and black sea bass alternatives are described in detail in section 5.5 of the RIR/IRFA. The extent of any cumulative impacts from measures established in previous years is largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures compensated for any recreational overages.

The management schemes established by the Council for summer flounder, scup, and black sea bass in the FMP, as previously analyzed in each species' respective EIS, recognize that management measures and fishery specifications established in one fishing year have implications for the measures that follow in subsequent years. In order to end overfishing and remedy the overfished status of these stocks, the Council developed rebuilding programs that have stock biomass targets. To achieve rebuilding, the Council recommends annual specifications that are intended to have a reasonable likelihood of not exceeding the specified target F's for the coming fishing year. Because of the nature of the fisheries (e.g., the landing of these species over in a large number of coastal states) and the inherent time lags encountered in collecting landings that are necessary to make final determinations of actual landings, there is always the possibility that harvest limits may be unintentionally exceeded. On the other hand, in a given year recreational harvest limits may not be achieved.

Overages in the recreational fishery are addressed by way of changes in management measures to reduce the harvest in the following year to the specified level. Thus, the FMP and the annual specifications anticipate the possibility that landings may exceed targets in any given year and provide a remedy that at least partially compensates for such occurrences in terms of maintaining the conservation goals of the FMP and the rebuilding programs, thus mitigating the impacts of those overages. The annual nature of the management measures is intended to provide the opportunity for the Council and NMFS to assess regularly the status of the fisheries and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP and the targets associated with any rebuilding programs under the FMP.

The rebuilding programs under the FMP began in 1993, 1997, and 1998 for summer flounder, scup, and black sea bass, respectively. Because each year's measures build upon the previous year's measures, the cumulative effects of the management program on the health of the stocks and the fishery are assessed from year to year. Projected recreational landings in a given year are used by the Council in recommending recreational management measures for each species in the following year. The Council and NMFS consider angler effort and success, stock availability and the target harvest limits in establishing recreational measures for the upcoming year, including size limits,

seasons, and bag limits. The recreational fisheries have target harvest levels, which do not require the fishery to be closed when attained, as compared to the commercial fishing quotas, which do require the fishery to be closed when the quota is attained. Recreational harvest limits, total landings, and total overages for each of the three recreational fisheries have been as follows (weight in million lb):

Summer Flounder

	Harvest Limit	Landings	Overages (+)/ Underages (-)
1995 -	7.80	5.50	-2.30
1996 -	7.41	10.37	+2.96
1997 -	7.41	11.86	+4.45
1998 -	7.41	12.53	+5.12
1999 -	7.41	8.37	+0.96
2000 -	7.41	15.82	+8.41
2001 -	7.16	11.64	+4.48
2002 -	9.72	8.13	-1.59

^a Projected

Scup

	Harvest Limit	Landings	Overage (+)/ Underage (-)
1997 -	1.95	1.20	-0.75
1998 -	1.55	0.88	-0.67
1999 -	1.24	1.89	+0.65
2000 -	1.24	5.44	+4.22
2001 -	1.76	4.26	+2.50
2002 -	2.71	3.76 ^a	+1.05

^a Projected.

Black Sea Bass

	Harvest Limit	Landings	Overage (+)/ Underage (-)
1997 -	--	4.3	--
1998 -	3.15	1.2	-1.95
1999 -	3.15	1.7	-1.45
2000 -	3.15	4.0	+0.85
2001 -	3.15	3.4	+0.25
2002 -	3.43	4.7 ^a	+1.27

^a Projected.

The summer flounder, scup, and black sea bass recreational fisheries have experienced annual overages and underages. In 2002, summer flounder is projected to have an recreational underage of approximately 1.59 million lb. This is the first time the summer flounder recreational fishery has not exceed their recreational harvest limit since 1999. In 2002, scup, and black sea bass recreational overages are approximately 1.0 and 1.27 million lb, respectively. Even though the recreational overage cannot be deducted from the TAL, the total overage factors into the cumulative impact on the stocks.

Recreational overages in a given year or period have two expected impacts. First, overages result in lower harvest levels in the following year or period for that portion of the fishery, than would otherwise have been allowed. In the recreational fisheries, overages in one year may result in lower bag limits, larger minimum size limits, and/or shorter seasons than would otherwise have been allowed, had the overages not occurred. Increased harvests in one year are thus “paid back” by decreased harvest opportunities the next year. Recreational fishing opportunities for those fishermen not desiring to keep their catch of these species would be affected little, if any, by such occurrences.

The second possible result of recreational overages is the potential that the annual F targets of the FMP will not be met and/or that the rebuilding schedule will be delayed. The significance of any such delays depends on the magnitude of the overages and their resultant impact on the stock size and age structure. While it is not possible to quantify those effects precisely, the fact that the FMP’s management regime takes into account the overages and the current status of the stocks in setting the specifications for the next year mitigates any such impacts. For summer flounder, the actual F has been higher than the target for several years, thus, the rate of rebuilding may have been slowed compared to the amount of rebuilding that might have occurred had F not exceeded the target. Nevertheless, the spawning stock biomass for summer flounder has increased substantially during the rebuilding period and the age structure of the summer flounder stock has expanded. Thus, the summer flounder stock is healthier and more robust than before rebuilding was initiated. Fishing mortality targets have generally been achieved for scup and black sea bass, so overages in individual periods or quarters are not likely to result in impacts on stock rebuilding for those stocks.

The Council and NMFS recognize that overages in any of the fisheries in 2003 could have additional negative impacts on the rate of rebuilding. Given the history of the summer flounder fishery, the mitigating influence of annual overage adjustments, and the fact that the stock has shown continued improvement during the rebuilding period, despite the overages that have occurred, the cumulative impacts of overages are not considered to be significant. Likewise, the impacts of any overages that might occur in 2003 as a result of these fishery specifications are also not considered to be significant.

7.0 Essential Fish Habitat Assessment

Because the gear types used in the summer flounder, scup, and black sea bass fisheries include handlines and rod and reel, which are not associated with adverse impacts to Essential Fish Habitat (EFH), changes to the recreational fishery regulations for the species contained in the FMP would not result in adverse impacts to EFH. In addition, this action establishes measures to achieve the recreational harvest limits established in the 2003 quota specifications. Therefore, no further EFH consultation is required.

8.0 List of Agencies and Persons Consulted in Formulating the Proposed Action

The proposed summer flounder, scup, and black sea bass specifications were submitted to NMFS by the Council.

9.0 List of Preparers of the Environmental Assessment

This environmental assessment document was prepared by the following members of the Council staff: Dr. Christopher M. Moore, Valerie Whalon, and Dr. José L. Montañez. Scott Steinback (NEFSC) also collaborated in the preparation of this document. For further information, contact Dr. Moore at (302) 674-2331.

10.0 List of Acronyms

ASMFC	Atlantic States Marine Fisheries Commission
B	Biomass
CEQ	Council on Environmental Quality
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
F	Fishing Mortality Rate
FR	<u>Federal Register</u>
FMP	Fishery Management Plan
IRFA	Initial Regulatory Flexibility Analysis
M	Natural Mortality Rate
MA	Mid-Atlantic
MAFMC	Mid-Atlantic Fishery Management Council
MRFSS	Marine Recreational Fisheries Statistical Survey
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Order
NEFSC	Northeast Fisheries Science Center

NE	New England
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
PRA	Paperwork Reduction Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SSB	Spawning Stock Biomass
SFA	Sustainable Fisheries Act
TAL	Total Allowable Landings
TL	Total Length
VTR	Vessel Trip Report
VPA	Virtual Population Analysis

11.0 Glossary

Amendment. A formal change to a fishery management plan (FMP). The Council prepares amendments and submits them to the Secretary of Commerce for review and approval. The Council may also change FMPs through a "framework adjustment framework adjustment " (see below).

B. Biomass, measured in terms of total weight, spawning capacity, or other appropriate units of production.

B_{MSY} . Long term average exploitable biomass that would be achieved if fishing at a constant rate equal to F_{MSY} . For most stocks, B_{MSY} is about $\frac{1}{2}$ of the carrying capacity. Overfishing definition control rules usually call for action when biomass is below $\frac{1}{4}$ or $\frac{1}{2}$ B_{MSY} , depending on the species.

B_{target} . A desirable biomass to maintain fishery stocks. This is usually synonymous with B_{MSY} or its proxy.

$B_{threshold}$. 1) A limit reference point for biomass that defines an unacceptably low biomass i.e., puts a stock at high risk (recruitment failure, depensation, collapse, reduced long term yields, etc). 2) A biomass threshold that the SFA requires for defining when a stock is overfished. A stock is overfished if its biomass is below $B_{threshold}$. A determination of overfished triggers the SFA requirement for a rebuilding plan to achieve B_{target} as soon as possible, usually not to exceed 10 years except certain requirements are met. $B_{threshold}$ is also known as $B_{minimum}$, or B_{min} .

Bycatch. Fish that are harvested in a fishery, but which are not sold or kept for personal use. This includes economic discards and regulatory discards. The fish that are being targeted may be bycatch if they are not retained.

Commission. Atlantic States Marine Fisheries Commission.

Committee. The Monitoring Committee, made up of staff representatives of the Mid-Atlantic, New England, and South Atlantic Fishery Management Councils, the Commission, the Northeast Regional Office of NMFS, the Northeast Fisheries Center, and the Southeast Fisheries Center. The MAFMC Executive Director or his designee chairs the Committee.

Conservation equivalency. The approach under which states are required to develop, and submit to the Commission for approval, state-specific management measures (i.e., possession limits, size limits, and seasons) designed to achieve state-specific harvest limits.

Control rule. A pre-determined method for determining rates based on the relationship of current stock biomass to a biomass target. The biomass threshold ($B_{\text{threshold}}$ or B_{min}) defines a minimum biomass below which a stock is considered .

Council. The Mid-Atlantic Fishery Management Council.

Environmental Impact Statement. An analysis of the expected impacts of a fishery management plan (or some other proposed Federal action) on the environment and on people, initially prepared as a "Draft" (DEIS) for public comment. After an initial EIS is prepared for a plan, subsequent analyses are called "Supplemental." The Final EIS is referred to as the Final Supplemental Environmental Impact Statement (FSEIS).

Exclusive Economic Zone. For the purposes of the Magnuson-Stevens Fishery Conservation and Management Act, the area from the seaward boundary of each of the coastal states to 200 nautical miles from the baseline.

Fishing for summer flounder, scup, or black sea bass. Any activity, other than scientific research vessel activity, which involves: (a) the catching, taking, or harvesting of summer flounder, scup, or black sea bass; (b) any other activity which can reasonably be expected to result in the catching, taking, or harvesting of summer flounder, scup, or black sea bass; or (c) any operations at sea in support of, or in preparation for, any activity described in paragraphs (a) or (b) of this definition.

Fishing effort. The amount of time and fishing power used to harvest fish. Fishing power is a function of gear size, boat size, and horsepower.

Fishing mortality rate. The part of the total mortality rate (which also includes natural mortality) applying to a fish population that is caused by man's harvesting. Fishing mortality is usually expressed as an instantaneous rate (F), and can range from 0 for no fishing to very high values such as 1.5 or 2.0. The corresponding annual fishing mortality rate (A) is easily computed but not frequently used. Values of A that would correspond to the F values of 1.5 and 2.0 would be 78% and 86%, meaning that there would be only 22% and 14% of the fish alive (without any natural mortality) at the end of the year that were alive at the beginning of the year. Fishing mortality rates are estimated using a variety of techniques, depending on the available data for a species or stock.

F_{max} · A calculated instantaneous fishing mortality rate that is defined as "the rate of fishing mortality for a given method of fishing that maximizes the harvest in weight taken from a single year class of fish over its entire life span".

F_{MSY} · A fishing mortality rate that would produce MSY when the stock biomass is sufficient for producing MSY on a continuing basis.

Framework adjustments. Adjustments within a range of measures previously specified in a fishery management plan (FMP). A change usually can be made more quickly and easily by a framework adjustment than through an amendment. For plans developed by the Mid-Atlantic Council, the procedure requires at least two Council meetings including at least one public hearing and an evaluation of environmental impacts not already analyzed as part of the FMP.

F_{target} · The target fishing mortality rate, equal to the annual F determined from the selected rebuilding schedule for overfished resources (i.e., summer flounder) and Council selected fishing mortality level for non-overfished resources (i.e., surfclams). Overfishing occurs when the overfishing target is exceeded.

$F_{threshold}$. 1) The maximum fishing mortality rate allowed on a stock and used to define overfishing for status determination. 2) The maximum fishing mortality rate allowed for a given biomass as defined by a control rule.

Landings. The portion of the catch that is harvested for personal use or sold.

Metric ton. A unit of weight equal to 1,000 kilograms (1 kg = 2.2 lb.). A metric ton is equivalent to 2,205 lb. A thousand metric tons is equivalent to 2.2 million lb.

MSY. Maximum sustainable yield. The largest long-term average yield (catch) that can be taken from a stock under prevailing ecological and environmental conditions.

Overfished. An overfished stock is one whose size is sufficiently small that a change in management practices is required in order to achieve an appropriate level and rate of rebuilding.

Overfishing. Overfishing occurs whenever a stock or stock complex is subjected to a rate or level of fishing mortality that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.

Party/Charter boat. Any vessel which carries passengers for hire to engage in fishing.

Recruitment. The addition of fish to the fishable population due to migration or to growth. Recruits are usually fish from one year class that have just grown large enough to be retained by the fishing gear.

Spawning Stock Biomass. The total weight of all sexually mature fish in the population. This quantity depends on year class abundance, the exploitation pattern, the rate of growth, fishing and natural mortality rates, the onset of sexual maturity and environmental conditions.

Status Determination. A determination of stock status relative to $B_{\text{threshold}}$ (defines overfished) and $F_{\text{threshold}}$ (defines overfishing). A determination of either overfished or overfishing triggers a SFA requirement for rebuilding plan (overfished), ending overfishing (overfishing) or both.

Stock. A grouping of a species usually based on genetic relationship, geographic distribution and movement patterns. A region may have more than one stock of a species (for example, Gulf of Maine cod and Georges Bank cod).

TAL. Total allowable landings; the total regulated landings from a stock in a given time period, usually one year.

Total length. The straight-line distance from the tip of the snout to the end of the tail while the fish is lying on its side.

Year-class. The fish spawned or hatched in a given year.

Yield per recruit. The theoretical yield that would be obtained from a group of fish of one age if they were harvested according to a certain exploitation pattern over the life span of the fish. From this type of analysis, certain critical fishing mortality rates are estimated that are used as biological reference points for management, such as F_{max} and $F_{0.1}$.

12.0 Finding of No Significant Environmental Impact

National Oceanic and Atmospheric Administration Order (NAO) 216-6 (revised May 20, 1999) provides nine criteria for determining the significance of the impacts of a proposed action. These criteria are discussed below:

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

The proposed action is not expected to jeopardize the sustainability of any target species that may be affected by the action. As specified in the FMP, this proposed action is intended reduce recreational landings to achieve the $F = 0.26$ target for summer flounder, a 21% target exploitation rate for scup, and a 25% target exploitation rate for black sea bass.

2. Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs?

The proposed action is not expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. The area affected by the proposed action in the summer flounder, scup, and black sea bass fisheries has been identified as EFH for species managed by the Northeast Multispecies; Atlantic Sea Scallop; Spiny Dogfish; Atlantic Mackerel, Squid, and Butterfish; Atlantic Surfclam and Ocean Quahog; Bluefish; Atlantic Billfish; Spiny Dogfish; Monkfish; Atlantic Tunas, Swordfish and Sharks; Calico Scallop; Wreckfish; King and Spanish Mackerel; Atlantic Coast Red Drum; Shrimp; Stone Crab; Snapper-Grouper of the South Atlantic; Coral and Coral Reefs of the Gulf of Mexico and the South Atlantic; and Coastal Migratory Pelagic Resources of the Gulf of Mexico and the South Atlantic Fishery Management Plans. The primary gear utilized in the recreational harvest of summer flounder, scup, and black sea bass is rod and reel or handline. Although quantification of specific gear types on various bottom habitats is poorly understood, rod and reel and handlines are generally not associated with adverse impacts. Finally, because each of the alternatives does not contain major changes to existing management measures, it is concluded that the alternatives will not result in significant impacts to the environment.

3. Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

The proposed action is not expected to have a substantial adverse impact on public health or safety. Each of the alternatives contains only changes to existing management measures (i.e., recreational minimum fish size, recreational possession limit and recreational seasons). Management alternatives will be selected to achieve the recreational harvest limits and to provide a reasonable balance between size limits, seasons and possession limits, so as not to compromise public health or safety.

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

The proposed action is not reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat for these species. As stated in section 6.2 of the EA, the activities to be conducted under the proposed annual recreational specifications are within the scope of the FMP, and do not change the basis for the determinations made in previous consultations.

5. Can the proposed 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 action is not expected to result in cumulative adverse effects that could have a substantial effect on target or non-target species. All of the alternatives that are being considered are designed to achieve the recreational harvest limit specified through the FMP for the 2003 fishing year. The alternatives contain only changes to existing recreational management measures for summer flounder, scup, and black sea bass, including the minimum recreational fish size, recreational possession limit and recreational season for each of the species. Furthermore, bycatch of target and non-target species in the recreational fishery using rod and reel or handline is not expected to be substantial. Therefore, the proposed action is not expected to result in any cumulative adverse effects to target or non-target species.

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

The proposed action is not expected to jeopardize the sustainability of any non-target species. All of the alternatives that are being considered are designed to reduce recreational landings in order to achieve the recreational harvest limit specified through the FMP for the 2003 fishing year. The alternatives contain only changes to existing recreational management measures for summer flounder, scup, and black sea bass, including the minimum recreational fish size, recreational possession limit and recreational season for each of the species. Furthermore, bycatch of non-target species in the recreational fishery using rod and reel or handline is not expected to be substantial.

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

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. As specified in the FMP, this proposed action is intended reduce recreational landings to achieve the $F = 0.26$ target for summer flounder, a 21% target exploitation rate for scup, and a 25% target exploitation rate for black sea bass. The alternatives being considered contain only changes to existing recreational management measures for summer flounder, scup, and black sea bass, including the minimum recreational fish size, recreational possession limit and

recreational season for each of the species. Furthermore, rod and reel and handlines are generally not associated with adverse benthic impacts. The proposed action will likely ensure biodiversity and ecosystem stability over the long term as the species continue to rebuild.

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

As discussed in section 6.0 of the EA, the proposed action is not expected to result in significant social or economic impacts, or significant natural or physical environmental effects. Therefore, there are no significant social or economic impacts interrelated with significant natural or physical environmental impacts.

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

Measures contained in this EA are not expected to be controversial. The proposed action would implement measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2003, as specified through the FMP.

FONSI Statement

For the reasons discussed above, it is hereby determined that the proposed action would not affect significantly the quality of the human environment, and that the preparation of an environmental impact statement for these specifications is not required by section 101(2)(c) of the National Environmental Policy Act nor its implementing regulations.

Assistant Administrator for Fisheries, NOAA

Date

March 26, 2003

REGULATORY IMPACT REVIEW AND INITIAL REGULATORY FLEXIBILITY ANALYSIS

1.0 Introduction

The National Marine Fisheries Service (NMFS) requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new Fishery Management Plan (FMP) or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. This RIR addresses many items in the regulatory philosophy and principles of Executive Order (E.O.) 12866.

Also included is an Initial Regulatory Flexibility Act Analysis (IRFA) to evaluate the economic impacts of the alternatives on small business entities. This analysis is undertaken in support of a complete analysis for the 2003 recreational specifications for summer flounder, scup, and black sea bass.

2.0 Evaluation Of E.O. 12866 Significance

2.1 Description of the Management Objectives

A complete description of the purpose and need and objectives of this proposed rule is found under section 1 of the EA. This action is taken under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and regulations at 50 CFR part 648.

2.2 Description of the Fishery

A description of the summer flounder, scup, and black sea bass fisheries is presented section 5.0 of the EA. A description of ports and communities is found in Amendment

13 to the Summer Flounder, Scup, and Black Sea Bass FMP. An analysis of permit data is found in section 4.2 of the 2003 Summer Flounder, Scup, and Black Sea Bass Specifications.

2.3 A Statement of the Problem

A statement of the problem for resolution is presented under section 1 of the EA.

2.4 A Description of Each Alternative

A full description of the three sets of alternatives analyzed in this section is presented in section 3.0 of the EA. A full description of the TAL derivation process is presented in sections 2.0 and 3.0 of the 2003 Summer Flounder, Scup, and Black Sea Bass Specifications. A brief description of each alternative is presented below for reference purposes.

2.5 RIR Impacts

The proposed action does not constitute a significant regulatory action under E.O. 12866 for the following reasons. First, it will not have an annual effect on the economy of more than \$100 million. The measures considered in this regulatory paper will not affect gross revenues or indirect and induced effects generated by the party/charter, private/rental, or other sectors offering goods and services to anglers engaged in the summer flounder, scup, and black sea bass fisheries to the extent that an annual \$100 million economic impact will occur in any of these fisheries individually or combined.

Projected data from Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that 30,963,432 fishing trips were taken in the Northeast Region (Maine through North Carolina) in 2002. It is estimated that the number of trips by fishing mode was 1,457,894 party/charter boat trips, 15,934,842 private/rental boat trips, and 13,570,696 shore trips (Table 41).

Assuming angler effort in 2003 will be the same as that estimated for 2002, fishing impacts were examined by estimating the number of recreational fishing trips in 2002 that would have been affected by the proposed 2003 management measures. All 2002 fishing trips that would have been constrained by the proposed 2003 measures in each state were considered to be "affected" trips. To date, the first five waves of MRFSS

effort data are available for 2002 (January - October). Wave six effort estimates for 2001 (November - December) were used as a proxy for 2002 effort. Therefore, wave six effort estimates for 2002 were assumed to be the same as in 2001. Potential direct gross revenue losses were estimated by multiplying the number of affected trips by average trip expenditures incurred by anglers in the Northeast region. Total potential losses (direct, indirect, and induced) to businesses that provide goods and services to anglers were approximated by assuming a multiplier effect of 1.5 - 2.0.

The measures proposed under the coastwide management alternative for summer flounder (Alternative 2) are estimated to affect 0.34% of the total fishing trips taken aboard party/charter boats in 2003, 0.65% of the total private/rental boat trips, and 0.02% of the total shore fishing trips, if this alternative is adopted by all of the states.¹ Implementation of the preferred alternative for scup (Alternative 1) is estimated to affect 0.78% of the total 2003 trips taken aboard party/charter boats, 0.10% of the total private/rental boat trips, and 0.06% of the total shore fishing trips. For black sea bass, the preferred alternative measures are predicted to affect 1.01% of the total party/charter trips taken in 2003, 0.03% of the total private/rental trips, and 0.00003% of the total shore fishing trips. As such, the total number of affected party/charter boat, private/rental boat, and shore trips, across all of the Northeast states in 2003 is projected to be 4,957, 103,576, and 2,714 in the summer flounder fishery; 11,437, 16,102, and 7,877 in the scup fishery; and 14,725, 4,780, and less than 10 in the black sea bass fishery, respectively, if these coastwide management alternatives for each species are adopted by all the states.

If the measures proposed under these coastwide alternatives induce reductions in trip taking behavior, businesses that provide goods and services to anglers may see a decline in revenues. Maximum direct gross revenue losses associated with implementation of these measures can be calculated by multiplying the estimated number of affected trips by fishing mode, by projected average angler trip expenditures by mode in 2003. Adjusted mean trip expenditures across all states (2003 equivalent) for party/charter boat trips is \$79.02, \$57.27 for private/rental boat trips, and \$40.34 for shore trips. Therefore, if it is assumed that all of the trips estimated to be affected by the measures proposed under the coastwide alternatives (summer flounder Alternative 2, scup Alternative 1, and black sea bass Alternative 1) will not occur in 2003, revenues for businesses providing goods and services to anglers engaged in these fisheries could decrease by approximately \$10,014,137 in 2003 compared to 2002, across all modes. The contribution of individual species to this total revenue decrease is as follows:

¹At this time it is not possible to determine the impacts of the summer flounder preferred alternative (conservation equivalency), since those management measures have not yet been established.

\$6,432,983 for summer flounder, \$2,143,672 for scup, and \$1,437,482 for black sea bass.

The potential losses presented in the above paragraph include only the direct effects of angler expenditures; the sales generated from initial purchases by anglers (e.g., party/charter access fees paid to owners of for-hire vessels). Indirect and induced effects also occur because businesses providing goods and services to anglers must purchase goods and services, which in turn, generate more sales. These ripple effects (i.e., multiplier effects) continue until the amount remaining in the area of interest is negligible. Although indirect and induced effects could be estimated by constructing a combined input-output model of the Northeast region coastal states, a model of this kind is not currently available. Nevertheless, a reasonable approximation of indirect and induced effects across all the Northeast states can be made by assuming a multiplier effect of 1.5 - 2.0. As such, an angler paying \$50.00 to fish on a party vessel would generate between \$75.00 to \$100.00 worth of revenue for the local economy. It is likely that the multiplier for this sector of the fishery falls within 1.5 - 2.0 considering that anglers spend money on food, beverages, transportation, lodging, gear, ice, etc. As such, the overall economic revenue losses associated with implementation of summer flounder Alternative 2 in the Northeast could range from \$9.649 million ($\$6,432,983 \times 1.5$) to \$12.866 million ($\$6,432,983 \times 2.0$), from \$3.216 million ($\$2,143,672 \times 1.5$) to \$4.287 million ($\$2,143,672 \times 2.0$) with implementation of scup Alternative 1, and from \$2.156 million ($\$1,437,482 \times 1.5$) to \$2.875 million ($\$1,437,482 \times 2.0$) under the measures proposed for black sea bass Alternative 1, if these coastwide alternatives are adopted by all the states. These values combined would result in overall economic revenue losses ranging from \$15.021 million to \$20.028 million.

Importantly, the potential economic losses described above assume the worse potential impact case scenario. Losses of this magnitude are not likely to occur given that anglers will continue to have the ability to engage in catch and release fishing for summer flounder, scup, and black sea bass and because of alternative target species available to anglers. Unfortunately, the absolute magnitude of change in demand is difficult to predict since very little information is available to empirically estimate how sensitive the affected anglers might be to the proposed regulations. Because the alternatives described above effect the number and size of the fish that can be kept or landed, but do not prohibit anglers from engaging in catch and release fishing, the overall losses are likely to be substantially lower.

The Council and Commission's preferred summer flounder alternative is to allow states to implement conservation equivalent measures. Since those management measures have not yet been established, they are not incorporated into this analysis. The non-preferred coastwide Alternative 2 for summer flounder included in the above analysis

was completed for comparative purposes (in the absence of specific state management measures under conservation equivalency).

Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. This would enable the summer flounder fishery to operate in a way that dissipates potential adverse economic effects in specific states. Table 36 details the proportion of summer flounder harvested in state and Federal waters. On average (1995-2001), approximately 92% of the harvested summer flounder (by number) came from state waters.

This action will not adversely affect, in the long-term, competition, jobs, the environment, public health or safety, or state, local, or tribal government communities. Second, this action will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the summer flounder, scup or black sea bass fisheries in the EEZ. Third, this action will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of their participants. And, fourth, the proposed action does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866. Based on the results of the RIR, this action is not significant under E.O. 12866.

3.0 Paperwork Reduction Act of 1995

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the Federal paperwork burden for individuals, small business, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government.

The Council is not proposing measures under this regulatory action that require review under PRA. There are no changes to existing reporting requirements previously approved under OMB Control Nos. 0648-0202 (Vessel permits), 0648-0229 (Dealer reporting) and 0648-0212 (Vessel logbooks).

4.0 Initial Regulatory Flexibility Analysis

4.1 Impacts on Small Entities

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule: (A) will not, if promulgated, have a significant economic impact on a substantial number of small entities; or (B) prepare an Initial Regulatory Flexibility Analysis. The Small Business Administration (SBA) defines a small business in the commercial fishing and recreational fishing activity, as a firm with receipts (gross revenues) of up to \$3.5 and \$5.0 million, respectively.

The purpose and need, and objectives and legal basis for this action are described in Sections 1.2 and 2.1 of the EA.

This rule would apply to the following small entities: summer flounder, scup or black sea bass charter/party permit holders, as well as those actively participating in the recreational fisheries in state waters. While permit holders represent the universe of entities whose normal activities might be directly affected by these regulations, not all permit holders choose to fish in a given year. Those who actively participate, i.e., land fish, would be the group of permit holders that are directly impacted by the regulations. Latent fishing power (in the form of unfished permits) represents a real and considerable force to alter the impacts on a fishery, but vessels actively participating in the fishery are dependent upon a particular species. It is impossible to predict how many - or who - will or will not participate in these fisheries in 2003.

Data from the Northeast permit application database indicates that in 2001 there were 760 vessels permitted to take part in the summer flounder, scup, and/or black sea bass fisheries in the EEZ. The Northeast landings database indicates that a total of 368 party/charter vessels participated in the summer flounder, scup, and/or black sea bass fisheries in the Northeast in 2001.

4.2 Recordkeeping and Reporting

As stated in section 3.0 of the RIR/IRFA, this proposed action does not propose new reporting or recordkeeping measures. There are no changes to existing reporting requirements. Currently, all summer flounder, scup or black sea bass federally-permitted

dealers must submit weekly reports of fish purchases. The owner or operator of any vessel issued a moratorium vessel permit for summer flounder, scup or black sea bass, must maintain on board the vessel, and submit, an accurate daily fishing log report for all fishing trips, regardless of species fished for or taken. The owner of any party or charter boat issued a summer flounder, scup or black sea bass permit other than a moratorium permit and carrying passengers for hire must submit an accurate daily fishing log report for each charter or party fishing trip that lands summer flounder, scup, or black sea bass, unless such a vessel is also issued another permit that requires regular reporting, in which case a fishing log report is required for each trip regardless of species retained.

4.3 Relevant Federal Rules

This proposed action will not duplicate, overlap, or conflict with any other Federal rules.

4.4 Significant Alternatives to the Proposed Rule

There is no need to further mitigate economic impacts on small entities because the Council selected the alternative determined to result in the least severe impacts. Specifications of recreational fish size limits, possession limits, and open fishing seasons is constrained by the conservation objectives of the FMP, and implemented at 50 CFR part 648 under the authority of the Magnuson-Stevens Act. The Council did not consider alternatives that would compromise the biological health of the stocks.

5.0 Analysis of Impacts of Proposed Measures

This analysis will present information relative to the impacts of this proposed action on small entities. The basic approach is an assessment of various management measures from the standpoint of determining the resulting changes in gross revenue for party/charter vessels in each state in the Northeast. Estimates of the impacts upon profitability are not provided because data on costs and revenues for party/charter vessels are not available in the NMFS files containing vessel data. As such, gross revenues for party/charter vessels participating in these fisheries were estimated by employing various assumptions which are described below. The effects of actions were analyzed by employing quantitative approaches to the extent possible. Where quantitative data were not available, qualitative analyses were conducted. The MAFMC invites public comment on this IRFA, and the qualitative and quantitative aspects of it in particular.

Impacts were examined by estimating the number of angler trips aboard party/charter vessels in 2002 that would have been affected by the proposed 2003 management measures. All 2002 party/charter fishing trips that would have been constrained by the proposed 2003 measures in each Northeast state were considered to be “affected” trips. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2001 (November - December) were used as a proxy for 2002 effort. Therefore, wave six effort estimates for 2002 were assumed to be the same as in 2001. Potential losses in gross revenues to party/charter boat owners were estimated by multiplying the number of affected trips in each state by the average party/charter fee incurred by anglers in a particular state.

5.1 General Fishing Trends

A detailed description of the fishery for summer flounder, scup, and black sea bass is presented in section 5.0 of the EA. The information presented below is intended to further characterize recent fishing trends for the summer flounder, scup, and black sea bass fisheries.

5.1.1 Summer Flounder

Summer flounder recreational data indicate that for the 1993 to 2001 period recreational landings were less than the recreational harvest limits only two years (1994 and 1995; Table 42). From 1996 to 2001, recreational landings have been above the recreational harvest limit ranging from 0.96 million lb (0.44 million kg) in 1999 to 9.06 million lb (4.11 million kg) in 2000. For 2002, recreational landings are projected to be 1.59 million lb (0.72 million kg) below the recreational harvest limit of 9.72 million lb (4.41 million kg).

The proposed recreational harvest limit for 2003 is 9.28 million lb (4.21 million kg). This recreational harvest limit is approximately 5% lower than the recreational harvest limit implemented in 2002 (9.72 million lb or 4.41 million kg), but over 14% above the projected recreational landings for that year (Table 42). The proposed recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2003.

Recreational Fishing Effort

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine

through North Carolina; Table 41). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

The contribution of summer flounder to the total catch (by number) made by party/charter vessels varied by month for the period 1996-2001 (Table 13). The contribution of summer flounder to the total catch of party/charter vessels fluctuated throughout the year, ranging from less than 3% from October through April to 22% in July, with the largest proportion (> 9%) of summer flounder caught from May through September.

Expenditures for Recreational Fishing

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner 2001). As part of this survey, anglers were asked to delineate trip expenditures and purchases of durable equipment used primarily for saltwater recreational fishing. Results of the survey were used to project the potential losses associated with the proposed 2003 regulations.

Survey results indicate that the average trip expenditure in the Northeast Region in 1998 was \$49.78 for anglers fishing from a private/rental boat, \$35.06 for shore anglers, and \$68.60 for anglers that fished from a party/charter boat (Table 43). Trip expenditures included the following consumable items: (1) travel; (2) food, drink, and refreshments; (3) lodging at motels, cabins, lodges, or campgrounds; (4) public transportation or car rental; (5) boat fuel; (6) guide or package fees; (7) access and/or boat launching fees; (8) equipment rental such as boat, fishing or camping equipment; (9) bait; and (10) ice. Expenditures on durable items such as rods, reels, tackle, special fishing clothing, etc., were also estimated in the Steinback and Gentner report but are not included in the subsequent analysis. Although expenditures on durable items may also be affected by the proposed regulations, the extent of the impact would be difficult to quantify since these items could be used for many trips.

5.1.2 Scup

Scup recreational landings have declined over 89% for the period 1991 through 1998 (Table 44). The number of fishing trips has also declined over 73% for the same time period. This decrease in the recreational fishery has occurred both with and without any recreational measures being in place, and it is perhaps a result from the stocks being over-exploited and at a low biomass level. In addition, party/charter boats may be targeting other species that are relatively more abundant than scup (e.g., striped bass), thus accounting for the decrease in the number of fishing trips in this fishery.

Recreational harvest limits in the scup fishery were first implemented in 1997 (Table 44). Recreational landings in 1997 and 1998 were below the recreational harvest limit for those years. However, in 1999, 2000, and 2001 recreational landings were above the recreational harvest limit for those years. Recreational landings are projected to be 3.76 million lb (1.71 million kg) in 2002 or about 39% above the recreational harvest limit of 2.71 million lb (1.23 million kg).

The recreational harvest limit for 2003 is 4.01 million lb (1.82 million kg). This recreational harvest limit is approximately 48% above the recreational harvest limit implemented in 2002 (2.71 million lb or 1.23 million kg) and about 7% above the projected recreational landings in 2002 (Table 44). Since there is no mechanism to deduct overages directly from the recreational harvest limit, any overages to the recreational harvest limit must be addressed by the way of adjustments to the management measures (fish size, bag limit and/or season). The scup recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2003.

Recreational Fishing Effort

The discussion regarding recreational fishing effort presented in section 5.1.1 of the RIR/IRFA also applies here.

The contribution of scup to the total catch (by number) made by party/charter vessels varied by month for the period 1996-2001 (Table 14). The contribution of scup to the total catch of party/charter vessels fluctuated throughout the year, ranging from less than 5% from January through May and December to 28% in October, with the largest proportion (> 18%) of scup caught from September through November.

Expenditures for Recreational Fishing

The discussion regarding expenditures for recreational fishing presented in section 5.1.1 of the RIR/IRFA also applies here.

5.1.3 Black Sea Bass

Black sea bass recreational data indicate that in three of the last five years (2000, 2001, and 2002) recreational landings have been more than the recreational harvest limits (Table 45). In 1998 and 1999 recreational landings of black sea bass were below the recreational harvest limit established for those years. For the year 2000, recreational landings of black sea bass were 4.01 million lb (1.82 million kg) or 0.86 million lb (0.39 million kg) above the recreational harvest limit. For the year 2001, recreational landings of black sea bass were 3.42 million lb (1.55 million kg) or 0.27 million lb (0.12 million kg) above the recreational harvest limit. In 2002 recreational landings are projected to be 1.25 million lb (0.57 million kg) above the recreational harvest limit of 3.43 million lb (1.56 million kg).

The proposed recreational harvest limit for 2003 is 3.43 million lb (1.56 million kg). Based on projected 2002 landings and the proposed recreational harvest limit for 2003, landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. Since there is no mechanism to deduct overages directly from the recreational harvest limit, any overages to the recreational harvest limit must be addressed by the way of adjustments to the management measures (fish size, bag limit and/or season). The proposed recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2003.

Recreational Fishing Effort

The discussion regarding recreational fishing effort presented in section 5.1.1 of the RIR/IRFA also applies here.

The contribution of black sea bass to the total catch (by number) made by party/charter vessels varied by month for the period 1996-2001 (Table 15). The contribution of black sea bass to the total catch of party/charter vessels fluctuated throughout the year, ranging from less than 10% from March through April to 50% in November, with the largest proportion (> 30%) of black sea bass caught from September through November.

Expenditures for Recreational Fishing

The discussion regarding expenditures for recreational fishing presented in section 5.1.1 of the RIR/IRFA also applies here.

5.2 Alternative 1 (Preferred)

5.2.1 Summer Flounder (No Action: Conservation Equivalency)

NMFS approved Framework 2 to the Summer Flounder, Scup, and Black Sea Bass FMP in 2001. This framework implemented conservation equivalency as a management tool for the summer flounder recreational fishery. Under this alternative, the Council and Commission may choose to implement either coastwide measures or conservation equivalency. For 2003, the Council and Board adopted conservation equivalency as a preferred alternative. As a result, each state will be required to implement recreational measures that it chooses to achieve its required reductions, if any are needed. The Board will either approve or disapprove each state's measures in February 2003 (Table 2). No analysis is provided here since the measures have yet to be adopted by the states. Landings projections for 2002 indicate that Virginia will be the only state required to reduce summer flounder landings by 11% in 2003 (section 3.1.1 of the EA; Table 1).

5.2.2 Scup

This alternative would implement a 10-inch TL minimum fish size, a 50-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through November 30 for 2003 (or a closed season of March 1 through June 30, and December 1 through December 31). These management measures could reduce landings by 27% (section 3.1.2 of the EA), which is the recommended reduction based on projected 2001 landings adjusted for 2001 seasonal effects, and the proposed recreational harvest limit for 2003, assuming no change in angler effort or stock abundance. Current scup recreational measures in the EEZ are a 10-inch TL minimum size, a 20-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through October 2 (or a closed season of March 1 through June 30, and October 3 through December 31). The difference between the measures in this alternative and the status quo is an increase in the possession limit and a shorter fishing season.

The Preferred Scup Alternative would allow for open seasons of January 1 through February 28, and July 1 through November 30 for 2003. VTR data indicates that the monthly contribution of scup to the total catch of party/charter vessels averaged about 3% during the proposed closed period of time in the Northeast Region (Table 14). However, scup comprised over 20% of total catches in Massachusetts during May and June, and over 10% of the total catches in Rhode Island during December. It is possible that a scup seasonal closure during those months could affect recreational satisfaction to such an extent that the demand for recreational party/charter trips could decrease for that time period. However, taking into consideration that on average (1995-2001), approximately 89% of the harvested scup (by number) came from state waters and that states through the Atlantic States Marine Fisheries Commission may implement alternative reduction strategies through the Commission's conservation equivalency procedures, the demand for recreational party/charter trips may not be significantly affected.

Party/Charter Effort Subject to Scup Alternative 1 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the scup measures proposed under Alternative 1 for the 2003 fishing year (Table 46). In New York, for example, it was estimated that 0.01% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 45 (0.01%) angler trips taken aboard party/charter boats in 2002 landed at least one scup that was less than 10 inches, landed more than 50 scup, or landed a scup during the closed seasons. Less than 1% of angler trips taken aboard party/charter boats in Rhode Island, New York, New Jersey, Maryland, and North Carolina in 2002 would have been affected by the proposed 2003 measures. However, in Massachusetts, it was estimated that almost 10% (10,340 angler trips) of total angler effort aboard party/charter boats in 2002 would have been constrained by the Alternative 1 management measures. In particular, according to the MRFSS landings data, these trips would have been constrained by the proposed closed season from March 1 through June 30. Party/charter boat anglers in the remaining states in the Northeast would not

have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 46 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 1 in the Northeast.

Gross Revenue Impacts of Scup Alternative 1 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target scup could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in six of the eleven Northeast states (Table 46). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the scup fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$8,593 (\$421,045/49) in Massachusetts, \$166 in Rhode Island, \$59 in New York, \$185 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina (Table 46). As such, if the regulations proposed under Alternative 1 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower than described above because it is most likely that states will implement conservation equivalent measures in 2003. Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. This would enable the scup fishery to operate in a way that mitigates potential adverse economic effects in specific states. In addition, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels

that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for scup and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and ONeil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and ONeil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 1.

5.2.3 Black Sea Bass

The preferred alternative would implement a coastwide 12-inch TL minimum fish size, a 25-fish per person possession limit, and open seasons of January 1 through September 1, and September 16 through November 30 (or a closed season of September 2 through September 15, and December 1 through December 31). These management measures could reduce landings by approximately 27% (section 3.1.3 of the EA). Based on projected 2002 landings and the proposed recreational harvest limit for 2003, landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. As such, the reduction in landings associated with this alternative (27%) is sufficient to achieve the harvest limit. Current black sea bass recreational measures in the EEZ include 11.5-inch TL minimum size, a

25-fish per person possession limit, and an open season of January 1 through December 31 (or no closed season). As such, the difference between the preferred coastwide black sea bass recreational measures for 2003 and the status quo is an increase in the minimum fish size and a shorter fishing season.

The Preferred Black Sea Bass Alternative would allow for open seasons of January 1 through September 1, and September 16 through November 30 for 2003. VTR data indicates that the monthly contribution of black sea bass to the total catch of party/charter vessels is significant for several states during the proposed closed period of time in the Northeast Region (Table 15). For example, the contribution of black sea bass to the total catch during the entire month of September and December was 34% and 17%, respectively. It is possible that a black sea bass seasonal closure during those time periods could affect recreational satisfaction to such an extent that the demand for recreational party/charter trips could decrease for that time period.

Party/Charter Effort Subject to Black Sea Bass Alternative 1 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the black sea bass measures proposed under Alternative 1 for the 2003 fishing year (Table 47). In Rhode Island, for example, it was estimated that 0.36% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 133 (0.36%) angler trips taken aboard party/charter boats in 2002 landed at least one black sea bass that was less than 12 inches, landed more than 25 black sea bass, or landed a black sea bass during the closed seasons. Less than 1% of angler trips taken aboard party/charter boats in Massachusetts, Rhode Island, Connecticut, New York, Maryland, Virginia, and North Carolina in 2002 would have been affected by the proposed 2003 measures. Approximately 3% of angler trips would have been constrained in New Jersey and about 3.5% would have been affected in Delaware. Party/charter boat anglers in Maine and New Hampshire would not have

been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 47 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 1 in the Northeast.

Gross Revenue Impacts of Black Sea Bass Alternative 1 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target black sea bass could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in nine of the eleven Northeast states (Table 47). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the black sea bass fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$19 (\$1,792/95) in Massachusetts, \$193 in Rhode Island, \$46 in Connecticut, \$442 in New York, \$8,334 in New Jersey, \$44,772 in Delaware, \$13,777 in Maryland, \$1,022 in Virginia, and \$52 in North Carolina (Table 47). As such, if the regulations proposed under Alternative 1 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower because the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is possible that some party/charter vessels could fish only in state waters and, thus, do not hold a

Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for black sea bass and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and ONeil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and ONeil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 1.

5.3 Alternative 2

5.3.1 Summer Flounder (Non-Preferred: Coastwide)

Alternative 2 for summer flounder would implement a coastwide 17-inch TL minimum fish size and a 4-fish per person possession limit. These management measures could reduce landings by approximately 32% (section 3.2.1 of the EA). Based on projected 2002 landings and the proposed recreational harvest limit for 2003, landings do not have to be reduced on a coastwide basis to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. A 32% reduction in landings is not required to achieved the recreational harvest limit. The implementation of the management measures under this alternative would reduce the recreational landings below 2003 harvest limit.

March 26, 2003

Party/Charter Effort Subject to Summer Flounder Alternative 2 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the summer flounder measures proposed under the non-preferred alternative for the 2003 fishing year (Table 48). In New Jersey, for example, it was estimated that 0.15% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 546 (0.15%) angler trips taken aboard New Jersey party/charter boats in 2002 landed at least one summer flounder that was less than 17 inches or landed more than 4 summer flounder. Angler effort in Massachusetts, Rhode Island, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina would also have been affected by the proposed 2003 measures by approximately 1% or less. Party/charter boat anglers in the remaining states in the Northeast would not have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 48 shows the projected number of party/charter trips by state that will likely be affected by the proposed regulations under this non-preferred alternative in the Northeast.

Gross Revenue Impacts of Summer Flounder Alternative 2 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This expenditure estimate was adjusted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips in each Northeast state to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target summer flounder could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in all Northeast states except for Maine, New Hampshire, and Connecticut. Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the summer flounder fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$9 (\$977/103) in Massachusetts, \$634 in Rhode Island, \$2,993 in New York, \$347 in New Jersey, \$285 in Delaware, \$190 in Maryland, \$409 in Virginia, and \$23 in North Carolina (Table 48). As such, if the regulations proposed under Alternative 2 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower considering the states, through the Atlantic States Marine Fisheries Commission, will implement alternative measures for summer flounder through conservation equivalency. Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. Since those management measures have not yet been established they are not incorporated into this analysis. In addition, the universe of party/charter vessels that participated in the summer flounder fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal summer flounder permit because they only fish in state waters are not represented in this assessment. Considering that 92% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal summer flounder permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for summer flounder and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and O'Neil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and O'Neil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under this non-preferred alternative.

5.3.2 Scup (Non-Preferred: No Action)

This alternative would implement a 10-inch TL minimum fish size, a 20-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through October 2 for 2003 (or a closed season of March 1 through June 30, and October 3 through December 31). These management measures could reduce landings by approximately 57% (section 3.2.2 of the EA). Based on projected 2001 landings adjusted for 2001 seasonal effects, and the proposed recreational harvest limit for 2003, it was estimated that landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. As such, the reduction in landings associated with this alternative (57%) is higher than the necessary reduction in landings to achieve the harvest limit. Current scup recreational measures in the EEZ are a 10-inch TL minimum size, a 20-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through October 2 (or a closed season of March 1 through June 30, and October 3 through December 31).

This Non-Preferred (No Action) Alternative would allow for open seasons of January 1 through February 28, and July 1 through October 2. VTR data indicates that the monthly contribution of scup to the total catch of party/charter vessels averaged about 9% during the proposed closed period of time in the Northeast Region (Table 14). However, scup comprised 13% total catches in Connecticut in October, over 16% of total catches in Massachusetts during May, June, and October, over 20% of the catches in New Jersey during October and November, over 20% of the catches in New York during October and November, and over 10% of the catches in Rhode Island from October through December. It is possible that a scup seasonal closure during those months could affect recreational satisfaction to such an extent that the demand for recreational party/charter trips could decrease for that time period. However, taking into consideration that on average (1995-2001), approximately 89% of the harvested scup (by number) came from state waters and that states through the Atlantic States Marine

Fisheries Commission may implement alternative reduction strategies through the Commission's conservation equivalency procedures, the demand for recreational party/charter trips may not be significantly affected.

Party/Charter Effort Subject to Scup Alternative 2 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the scup measures proposed under Alternative 2 for the 2003 fishing year (Table 49). In Rhode Island, for example, it was estimated that 3.75% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 1,367 (3.75%) angler trips taken aboard party/charter boats in 2002 landed at least one scup that was less than 10 inches, landed more than 20 scup, or landed a scup during the proposed closed seasons. Less than 1% of angler trips taken aboard party/charter boats in New Jersey, Delaware, Maryland, and North Carolina in 2002 would have been affected by the proposed 2003 measures. However, a substantial number of angler trips would have been constrained by the Alternative 2 management measures in Massachusetts (11,945), Rhode Island (1,367), and New York (17,250). Party/charter boat anglers in the remaining states in the Northeast would not have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 49 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 2 in the Northeast.

Gross Revenue Impacts of Scup Alternative 2 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this

survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target scup could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in seven of the eleven Northeast states (Table 49). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the scup fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$9,927 (\$486,400/49) in Massachusetts, \$3,976 in Rhode Island, \$22,659 in New York, \$1,916 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina (Table 49). As such, if the regulations proposed under Alternative 2 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower than described above because it is most likely that states will implement conservation equivalent measures in 2003. Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. This would enable the scup fishery to operate in a way that dissipates potential adverse economic effects in specific states. In addition, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for scup and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very

little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and O'Neil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and O'Neil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 2.

5.3.3 Black Sea Bass (Non-Preferred: No Action)

This non-preferred alternative would implement a coastwide 11.5-inch TL minimum fish size, a 25-fish per person possession limit, and an open season of January 1 through December 31 (or no closed season). These measures were in place in 2002. This alternative is not expected to reduce recreational landings in 2003 (section 3.2.3 of the EA). Based on projected 2002 landings and the proposed recreational harvest limit for 2003, landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. As such, the reduction in landings associated with the proposed management measures under this alternative will not provide the necessary reduction in landings to achieve the harvest limit.

Party/Charter Effort Subject to Black Sea Bass Alternative 2 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the black sea bass measures proposed under Alternative 2 for the 2003 fishing year (Table 50). In Maryland, for example, it was estimated that 0.22% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 401 (0.22%) angler trips taken aboard party/charter boats in 2002 landed at least one black sea bass that was less than 11.5 inches or landed more than 25 black sea bass. Less than 1% of angler trips taken aboard party/charter boats in Massachusetts, Rhode Island, Connecticut, Maryland, Virginia, and North Carolina in 2002 would have been affected by the proposed 2003 measures. Approximately 2% of angler trips would have been constrained in New Jersey and about 3% would have been affected in Delaware. Party/charter boat anglers in Maine, New Hampshire, and New York would not have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 50 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 2 in the Northeast.

Gross Revenue Impacts of Black Sea Bass Alternative 2 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target black sea bass could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in eight of the eleven Northeast states (Table 50). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the black sea bass fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$70 in Rhode Island, \$46 in Connecticut, \$4,690 in New Jersey, \$41,494 in Delaware, \$5,443 in Maryland, \$1,119 in Virginia, and \$17 in North Carolina (Table 50). As such, if the

regulations proposed under Alternative 2 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower because the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is possible that some party/charter vessels could fish only in state waters and, thus, do not hold a Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for black sea bass and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and ONeil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and ONeil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 2.

5.4 Alternative 3

5.4.1 Summer Flounder (Non-Preferred: Precautionary Default)

As required under conservation equivalency guidelines, the Council and Board also must adopt a Precautionary Default Alternative for Federal permit holders landing summer flounder in states that do not submit approved conservation equivalency measures. The Precautionary Default Alternative consists of one fish per person at 18 inches. The precautionary default measures result in a coastwide reduction in landings of 67% and state reductions ranging from 41% in Delaware to 88% in North Carolina for 2003 (section 3.3.1 of the EA). The state-specific reduction in landings associated with the Precautionary Default Alternative are substantially higher than the state-specific reductions that are contained in the Conservation Equivalency Alternative (Tables 1 and 8). As such, it is expected that states will avoid the impacts of the Precautionary Default Alternative by establishing conservation equivalent measures. In other words, because states have a choice, it is more rational for the states to adopt the conservation equivalent measures that result in fewer adverse economic impacts than to acquiesce to the much more restrictive measures contained in Non-Preferred Alternative 3 for Summer Flounder - Precautionary Default.

5.4.2 Scup

This alternative would implement a 10-inch TL minimum fish size, a 50-fish per person possession limit, and open seasons of January 1 through February 28, and July 14 through December 31 for 2003 (or a closed season of March 1 through July 13). These management measures could reduce landings by approximately 27% (section 3.3.2 of the EA). Based on projected 2001 landings adjusted for 2001 seasonal effects, and the proposed recreational harvest limit for 2003, it was estimated that landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. As such, the reduction in landings associated with this alternative (27%) is sufficient to achieve the harvest limit. Current scup recreational measures in the EEZ are a 10-inch TL minimum size, a 20-fish per person possession limit, and open seasons of January 1 through February 28, and July 1 through October 2 (or a closed season from March 1 through June 30, and October 3 through December 31). The difference between the measures in this alternative and the status quo is an increase in the possession limit and a longer fishing season.

The Non-Preferred Scup Alternative would allow for open seasons of January 1 to February 28, and July 14 through December 31 for 2003. VTR data indicates that the monthly contribution of scup to the total catch of party/charter vessels ranged from 0.27% in March to 6% in June (Table 14). However, scup comprised over 20% of total catches in Massachusetts during May and June. It is possible that a scup seasonal closure during those months could affect recreational satisfaction to such an extent that the demand for recreational party/charter trips could decrease for that time period. However, taking into consideration that on average (1995-2001), approximately 89% of

the harvested scup (by number) came from state waters and that states through the Atlantic States Marine Fisheries Commission may implement alternative reduction strategies through the Commission's conservation equivalency procedures, the demand for recreational party/charter trips may not be significantly affected.

Party/Charter Effort Subject to Scup Alternative 3 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the scup measures proposed under Alternative 3 for the 2003 fishing year (Table 51). In New York, for example, it was estimated that 0.56% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 2,011 (0.56%) angler trips taken aboard party/charter boats in 2002 landed at least one scup that was less than 10 inches, landed more than 50 scup, or landed a scup during the proposed closed seasons. Less than 1% of angler trips taken aboard party/charter boats in 2002 in Rhode Island, New York, New Jersey, Maryland, and North Carolina would have been affected by the proposed 2003 measures. In Massachusetts, however, almost 11% of angler effort aboard party/charter boats in 2002 would have been constrained by the Alternative 3 management measures. Party/charter boat anglers in the remaining states in the Northeast would not have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 51 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 3 in the Northeast.

Gross Revenue Impacts of Scup Alternative 3 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine

Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target scup could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in six of the eleven Northeast states (Table 51). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the scup fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$9,582 (\$469,502/49) in Massachusetts, \$684 in Rhode Island, \$2,642 in New York, \$568 in New Jersey, \$25,450 in Maryland, and \$2,688 in North Carolina (Table 51). As such, if the regulations proposed under Alternative 3 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower than described above because it is most likely that states will implement conservation equivalent measures in 2003. Conservation equivalent recreational management measures would allow each state to develop specific recreational measures to allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals. This would enable the scup fishery to operate in a way that dissipates potential adverse economic effects in specific states. In addition, the universe of party/charter vessels that participated in the scup fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal scup permit because they only fish in state waters are not represented in this assessment. Considering that 94% of the landings in 2001 came from state waters it is probable that some party/charter vessels fish only in state waters and, thus, do not hold a Federal scup permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for scup and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the

absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and O'Neil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and O'Neil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 3.

5.4.3 Black Sea Bass

This non-preferred alternative would implement a 12.5-inch TL minimum fish size, a 25-fish per person possession limit, and an open season of January 1 through December 31. These management measures could reduce landings by approximately 30% (section 3.3.3 of the EA). Based on projected 2002 landings and the proposed recreational harvest limit for 2003, landings would have to be reduced 27% to achieve the harvest limit in 2003 assuming no change in angler effort or stock abundance. As such, the reduction in landings associated with the proposed management measures (30%) under this alternative are estimated to achieve the necessary reduction in landings. Current black sea bass recreational measures in the EEZ include an 11.5-inch TL minimum size, a 25-fish per person possession limit, and an open season of January 1 through December 31. As such, the difference between this non-preferred coastwide black sea bass recreational alternative for 2003 and the status quo is an increase in the minimum fish size.

Party/Charter Effort Subject to Black Sea Bass Alternative 3 Management Measures

Projected data from the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that anglers fished 30.96 million days in 2002 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 5% (1.46 million) of the

angler fishing days in 2002. Party/charter anglers fishing in Massachusetts, New York, New Jersey, Maryland, and North Carolina comprised 82% of the total projected party/charter effort in the Northeast Region. To date, the first five waves of MRFSS effort data are available for 2002. Wave six effort estimates for 2002 were assumed to be the same as in 2001.

Staff at the Northeast Fisheries Science Center estimated the proportion of effort that fished from party/charter boats in 2002 that would have been affected by the implementation of the black sea bass measures proposed under Alternative 3 for the 2003 fishing year (Table 52). In Virginia, for example, it was estimated that 1.01% of the trips aboard party/charter boats in 2002 would have been affected by the 2003 measures. In other words, 727 (1.01%) angler trips taken aboard party/charter boats in 2002 landed at least one black sea bass that was less than 12.5 inches or landed more than 25 black sea bass. Less than 1% of angler trips taken aboard party/charter boats in Rhode Island, Connecticut, New York, Maryland, and North Carolina in 2002 would have been affected by the proposed 2003 measures. Approximately 3% of angler trips would have been constrained in New Jersey, 5% in Delaware, and 1% in Virginia. Party/charter boat anglers in Maine, New Hampshire, and Massachusetts would not have been affected by the proposed measures. Assuming angler effort in 2003 is similar to 2002 and catch rates remain about the same, Table 52 shows the projected number of party/charter trips by state that would likely be affected by the proposed regulations under Alternative 3 in the Northeast.

Gross Revenue Impacts of Black Sea Bass Alternative 3 Management Measures on Party/Charter Vessels

During 1998, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' Marine Recreational Statistics Survey (MRFSS; Steinback and Gentner, 2001). As part of this survey, anglers were asked to delineate trip expenditures including the amount spent on guide or package fees. Survey results indicate that the average access fee paid to fish aboard a party/charter boat in the Northeast in 1998 was \$35.60 (Table 43). This value was converted to its 2003 equivalent (\$40.72) and was used in conjunction with the estimated number of affected trips to project the potential losses to the for-hire fishing sector associated with the proposed 2003 regulations.

Party and charter vessels that target black sea bass could be directly impacted by the proposed regulations. The measures are predicted to affect party/charter boat anglers in eight of the eleven Northeast states (Table 52). Total party/charter boat earnings associated with the affected trips can be estimated by multiplying the number of

potentially affected trips in each state in 2003 by the average fee paid by party/charter anglers in the Northeast region (\$40.72 - 2003 equivalent). These earnings were apportioned to the number of federally permitted party/charter vessels that participated in the black sea bass fishery in 2001 according to homeport state in the Northeast logbook database. The potential impact per boat was estimated to range up to \$70 in Rhode Island, \$46 in Connecticut, \$70 in New York, \$9,115 in New Jersey, \$62,566 in Delaware, \$13,465 in Maryland, \$1,558 in Virginia, and \$52 in North Carolina (Table 52). As such, if the regulations proposed under Alternative 3 result in a decrease in the number of recreational fishing trips, on average, each party/charter vessel in these states could see a decrease in gross revenue in 2003.

Actual losses will likely be even lower because the universe of party/charter vessels that participated in the black sea bass fishery is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that over 19% of the landings in 2001 came from state waters it is possible that some party/charter vessels could fish only in state waters and, thus, do not hold a Federal black sea bass permit. Therefore, the party/charter losses shown in this assessment would be spread over a greater number of vessels resulting in lower estimated losses per vessel.

In addition to this, anglers will continue to have the ability to engage in catch and release fishing for black sea bass and because of alternative target species available to anglers, overall recreational demand should not be adversely affected. Unfortunately, the absolute magnitude of change in recreational demand is difficult to predict because very little information is available to empirically estimate how sensitive the affected party/charter boat anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

While keeping fish is moderately important to anglers in the Mid-Atlantic, over 42% of anglers in New England in 1994, indicated catching fish to eat was not an important reason for marine fishing (Steinback and O'Neil 1998). Although these anglers are not likely to be the ones constrained by the regulations, findings of this study generally concur with previous studies that found non-catch reasons for participating in marine recreational fishing were rated much higher than keeping fish for food. In combination with alternative target species available to anglers, the findings of the Steinback and O'Neil (1998) study suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the landings restrictions proposed under Alternative 3.

5.5 Combined Summer Flounder, Black Sea Bass, and Scup Fishery Impacts

In 2001, 760 vessels held a Federal party/charter permit for summer flounder, black sea bass or/or scup. A portion of these vessels held only a summer flounder, black sea bass or scup permit, but most of the vessels held permits for at least two of the species and a large number of vessels held permits for all three species. However, according to 2001 Northeast logbook data less than one-half of the vessels (368) that held Federal permits reported angler landings of summer flounder, black sea bass or scup in 2001 (Table 53). Of the vessels that reported angler landings, a small number landed only one of the species, but most landed at least two of the species and some landed all three species during the course of the 2001 fishing year. In Massachusetts, for example, 43 vessels that held Northeast permits for all three species in 2001 reported landings on Northeast trip reports in 2001. There were 11 vessels in Massachusetts that held only black sea bass permits and reported landings in 2001; 2 vessels that held black sea bass and scup permits that reported landings; 39 vessels that held black sea bass and summer flounder permits that reported landings; 4 vessels that held only scup permits and reported landings; and 21 vessels that held only summer flounder permits and reported landings.

Potential revenue losses in 2003 may be higher than discussed in sections 5.2, 5.3, and 5.4 of the RIR/IRFA for party/charter vessels that land more than one of the regulated species. Although a cumulative impact assessment of losses for all the various combinations of summer flounder, scup, and black sea bass alternatives is not provided (because this would result in 18 possible combinations of alternatives), one particularly onerous combination of alternatives was analyzed. Table 54 shows the effect of the management measures proposed under Alternative 2 for summer flounder in combination with the measures proposed under Alternative 1 for scup, and the measures proposed under Alternative 1 for black sea bass. These are the alternatives that are likely to be implemented in 2003, with the exception of summer flounder. The coastwide measures proposed under Alternative 2 for summer flounder are likely to be considerably more restrictive than the state-by-state conservation equivalent measures that will be developed under Alternative 1. However, since the conservation equivalent measures have yet to be adopted by the states it was not possible to analyze this alternative in combination with the preferred scup and black sea bass alternatives. Therefore, the maximum gross revenue losses associated with vessels that land summer flounder in 2003 will be considerably lower than shown in Table 54.

The cumulative maximum gross revenue loss per vessel varies by the combination of permits held and by state under this combination of alternatives (Table 54). In Rhode Island, for example, losses could reach \$993 for each vessel that lands all three species in 2003 as compared to 2002. In contrast, each party/charter vessel that lands all three

species in Maryland could lose considerably more - up to \$39,417 in 2003. For vessels that land only black sea bass, maximum gross revenue losses were estimated at \$193 for each Rhode Island vessel, but \$13,777 for each Maryland vessel that takes passengers for-hire. On average, the largest potential losses under this combination of summer flounder, scup, and black sea bass management measures are projected for party/charter vessels operating out of Delaware, Maryland, New Jersey, and Massachusetts in 2003.

The revenue losses shown in Table 54, however, represent the maximum potential gross revenue losses per vessel. These losses were calculated by assuming that all of the angler trips estimated to be constrained by the proposed measures will not occur. Given that anglers will continue to have the ability to engage in catch and release fishing for summer flounder, scup, and black sea bass and because of alternative target species available to anglers, the reduction in effort and associated expenditures should be substantially lower than indicated in this analysis. The lack of appropriate demand models limits our ability to empirically determine how sensitive the affected anglers might be to the proposed regulations. Although the proposed regulations may change the number and size of the fish that can be landed, they do not prohibit anglers from engaging in catch and release fishing. Therefore the demand for fishing trips should remain relatively unaffected.

6.0 Coastal Zone Management Act

The Council has determined that this action is consistent to the maximum extent practicable with the enforceable policies of approved coastal management programs of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Pennsylvania, Delaware, Virginia, North Carolina, South Carolina, Georgia, and Florida. This determination was submitted on March 17, 2003, for review by the responsible state agencies under section 307 of the Coastal Zone Management Act. Copies of the correspondence are on file at the Council office.

TABLES

Table 1. Summer flounder landings (number) by state for 1998 and the 2003 target (in number and assuming a 40.9% reduction in the 1998 landings), and the 2002 projected landings (based on waves 1-5). The percent reduction necessary to achieve the 2003 recreational harvest limit relative to 2002 landings is also presented.

<u>State</u>	<u>1998</u>	<u>2003</u> <u>Target</u>	<u>2002</u> ¹	<u>%</u> <u>Reduction</u>
MA	383	226	154	0
RI	395	233	194	0
CT	261	154	99	0
NY	1230	726	699	0
NJ	2728	1612	1033	0
DE	219	129	107	0
MD	206	122	74	0
VA	1165	689	774	11
NC	391	231	187	0

¹Projected.

Table 2. Procedure for establishing summer flounder recreational management measures.

August

Council/Board recommend recreational harvest limit.

October

MRFSS data available for current year through wave 4.

November

Monitoring Committee meeting to develop recommendations to Council:

Overall % reduction required.

Use of coastwide measures or state conservation equivalency.

**Precautionary default measures.

**Coastwide measures.

December

Council/Board meeting to make recommendation to NMFS

State Conservation Equivalency

or

Coastwide measures.

State Conservation Equivalency Measures

Late December

Commission staff summarizes and distributes equivalency guideline to states.

Early January

Council staff submits recreational measure package to NMFS. Package includes:

Overall % reduction required.

- Recommendation to implement conservation equivalency and precautionary default measures (Preferred Alternative).

-Coastwide measures (Non-preferred Alternative).

States submit conservation equivalency proposals to ASMFC.

January 15

ASMFC distributes state conservation equivalency proposals to Technical Committee.

Late January

ASMFC Technical Committee meeting:

-Evaluation of proposals.

-ASMFC staff summarizes Technical Committee recommendations and distributes to Board.

February

Board meeting to approve/disapprove proposals and submits to NMFS within two weeks, but no later than end of February.

March 1 (on or around)

NMFS publishes proposed rule for recreational measures announcing the overall % reduction required, state conservation equivalency measures and precautionary default measures (as the preferred alternative), and coastwide measures as the non-preferred alternative.

March 15

During comment period, Board submits comment to inform whether conservation equivalency proposals are approved.

April

NMFS publishes final rule announcing overall % reduction required and one of the following scenarios:

-State specific conservation equivalency measures with precautionary default measures, or

-Coastwide measures.

Coastwide Measures

Early January

Council staff submits recreational measure package to NMFS. Package includes:

-Overall % reduction required.

-Coastwide measures.

February 15

NMFS publishes proposed rule for recreational measures

announcing the overall % reduction required and Coastwide measures.

April

NMFS publishes final rule announcing overall % reduction required and Coastwide measures.

**Precautionary default measures - measures to achieve at least the % required reduction in each state, e.g., one fish possession limit and 15.5 inch bag limit would have achieved at least a 41% reduction in landings for each state in 1999.

**Coastwide measures - measure to achieve % reduction coastwide.

Table 3. The effect of various size and possession limits on 2001 scup recreational landings. The tables contain the proportional reduction in number of scup landed adjusting for the effectiveness of the 2001 management measures.

	Size (TL")	
BAG	9	10
1	0.845	0.859
2	0.722	0.746
3	0.629	0.665
4	0.549	0.596
5	0.484	0.538
6	0.425	0.486
7	0.374	0.441
8	0.327	0.400
9	0.295	0.370
10	0.266	0.342
15	0.182	0.262
20	0.123	0.208
25	0.081	0.169
30	0.059	0.146
35	0.038	0.125
40	0.024	0.111
45	0.017	0.104
50	0.013	0.100

Table 4a. Average percent of scup landed (in number) by wave, based on 1996-2000 MRFSS landings data.

<u>State</u>	<u>Wave 1</u>	<u>Wave 2</u>	<u>Wave 3</u>	<u>Wave 4</u>	<u>Wave 5</u>	<u>Wave 6</u>
MA	0.0	0.0	37.4	31.5	31.1	0.0
RI	0.0	0.0	4.9	48.1	45.7	1.3
CT	0.0	0.0	8.2	49.6	42.2	0.0
NY	0.0	0.0	22.0	27.7	48.8	1.5
NJ	0.0	0.3	0.0	3.0	78.6	18.1
DE	0.0	0.0	0.0	9.0	89.9	1.1
MD	0.0	0.0	0.0	46.2	0.0	53.8
VA	0.0	0.0	0.0	0.0	87.8	12.2
NC	0.0	3.3	40.9	31.3	24.5	0.0
Coast	0.0	0.4	12.6	27.4	49.8	9.8

Table 4b. Projected reduction in scup landings (in number) associated with closing one day per wave, based on 1996-2000 MRFSS landings data.

<u>State</u>	<u>Wave 1</u>	<u>Wave 2</u>	<u>Wave 3</u>	<u>Wave 4</u>	<u>Wave 5</u>	<u>Wave 6</u>
MA	-	-	0.61	0.51	0.51	-
RI	-	-	0.08	0.78	0.75	0.02
CT	-	-	0.13	0.80	0.69	0.00
NY	-	-	0.36	0.45	0.80	0.02
NJ	-	0.01	-	0.05	1.29	0.30
DE	-	-	-	0.15	1.47	0.02
MD	-	-	-	0.74	-	0.88
VA	-	-	-	-	1.44	0.20
NC	-	0.05	0.67	0.50	0.40	-
Coast	-	0.01	0.21	0.44	0.82	0.16

Table 5. The effect of various size and possession limits on 2002 black sea bass recreational landings. The tables contain the proportional reduction in number of black sea bass landed adjusting for the effectiveness of 2002 management measures.

BAG	Size (TL ")		
	11.5	12.0	12.5
1	0.777	0.788	0.799
2	0.612	0.634	0.661
3	0.484	0.516	0.560
4	0.391	0.436	0.495
5	0.317	0.372	0.448
6	0.257	0.322	0.413
7	0.209	0.281	0.390
8	0.175	0.252	0.373
9	0.148	0.233	0.359
10	0.127	0.216	0.347
11	0.108	0.204	0.337
12	0.092	0.193	0.330
13	0.079	0.183	0.324
14	0.067	0.176	0.319
15	0.056	0.168	0.315
20	0.016	0.142	0.302
25	0.000	0.136	0.298

Table 6a. Average percent of black sea bass landed (in number) by wave, 1996-2000, based on 1996-2000 MRFSS landings data.

<u>State</u>	<u>Wave 1</u>	<u>Wave 2</u>	<u>Wave 3</u>	<u>Wave 4</u>	<u>Wave 5</u>	<u>Wave 6</u>
MA	0.0000	0.0000	23.4694	24.6675	51.6401	0.2230
RI	0.0000	0.0029	1.8545	20.2479	64.9094	12.9853
CT	0.0000	0.0000	6.5206	62.5768	30.9027	0.0000
NY	0.0000	0.0000	9.6851	38.9277	47.8741	3.5131
NJ	0.0000	1.7127	26.9043	15.4321	52.4008	3.5500
DE	0.0000	0.7649	36.8219	29.6058	24.1154	8.6920
MD	0.0000	3.3434	34.1283	13.5413	16.8959	32.0911
VA	0.0000	3.5027	29.7212	17.9100	25.5224	23.3438
NC	0.0000	8.5527	26.8782	30.8952	15.9682	17.7056
Coast	0.0000	2.1402	27.0501	17.6799	42.1276	11.0022

Table 6b. Projected reduction in black sea bass landings (in number) associated with closing one day per wave, based on 1996-2000 MRFSS landings data.

<u>State</u>	<u>Wave 1</u>	<u>Wave 2</u>	<u>Wave 3</u>	<u>Wave 4</u>	<u>Wave 5</u>	<u>Wave 6</u>
MA	0.0000	0.0000	0.3847	0.3979	0.8466	0.0037
RI	0.0000	0.0000	0.0304	0.3266	1.0641	0.2129
CT	0.0000	0.0000	0.1069	1.0093	0.5066	0.0000
NY	0.0000	0.0000	0.1588	0.6279	0.7848	0.0576
NJ	0.0000	0.0281	0.4411	0.2489	0.8590	0.0582
DE	0.0000	0.0125	0.6036	0.4775	0.3953	0.1425
MD	0.0000	0.0548	0.5595	0.2184	0.2770	0.5261
VA	0.0000	0.0574	0.4872	0.2889	0.4184	0.3827
NC	0.0000	0.1402	0.4406	0.4983	0.2618	0.2903
Coast	0.0000	0.0351	0.4434	0.2852	0.6906	0.1804

Table 7. The effect of various size and possession limits on 2001 summer flounder recreational landings. The tables contain the proportional reduction in number of summer flounder landed adjusting for the effectiveness of 2001 regulations.

		Size (TL")						
BAG	-	15.5	16	17	18	19	20	
-	0.000	0.003	0.056	0.264	0.467	0.662	0.770	
1	0.402	0.405	0.438	0.546	0.672	0.808	0.882	
2	0.189	0.192	0.239	0.401	0.576	0.750	0.838	
3	0.108	0.111	0.163	0.350	0.539	0.721	0.816	
4	0.067	0.071	0.124	0.320	0.513	0.701	0.798	
5	0.042	0.046	0.099	0.299	0.496	0.685	0.787	
6	0.024	0.028	0.081	0.284	0.484	0.676	0.780	
7	0.011	0.014	0.067	0.273	0.474	0.669	0.775	
8	0.000	0.004	0.057	0.265	0.467	0.662	0.770	

Table 8. The effect of various size and possession limits on 2001 summer flounder recreational landings by state. The tables contain the proportional reduction in number of summer flounder landed and are adjusted for the effectiveness of regulations in each state.

		Coast						
		Size (TL")						
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.409	0.413	0.413	0.435	0.488	0.543	0.592	0.652
2	0.164	0.170	0.170	0.216	0.306	0.393	0.462	0.552
3	0.081	0.089	0.090	0.146	0.249	0.344	0.419	0.521
4	0.040	0.049	0.050	0.113	0.222	0.320	0.400	0.507
5	0.024	0.034	0.035	0.098	0.209	0.308	0.391	0.500
6	0.016	0.026	0.027	0.091	0.202	0.303	0.387	0.496
7	0.012	0.022	0.023	0.087	0.198	0.300	0.385	0.494
8	0.009	0.019	0.020	0.084	0.196	0.299	0.384	0.493

		Massachusetts						
		Size (TL")						
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.238	0.238	0.238	0.238	0.238	0.286	0.524	0.571
2	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
3	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
4	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
5	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
6	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
7	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476
8	0.000	0.000	0.000	0.000	0.000	0.190	0.429	0.476

		Rhode Island						
		Size (TL")						
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.417	0.417	0.417	0.417	0.417	0.417	0.417	0.462
2	0.167	0.167	0.167	0.167	0.167	0.167	0.167	0.295
3	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.250
4	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.235
5	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.227

6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.220
7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.220
8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.220

Connecticut

Size (TL")

Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.414	0.414	0.414	0.414	0.414	0.414	0.414	0.477
2	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.270
3	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.207
4	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.189
5	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.171
6	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.153
7	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.144
8	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.135

Table 8 (continued). The effect of various size and possession limits on 2001 summer flounder recreational landings by state. The tables contain the proportional reduction in number of summer flounder landed and are adjusted for the effectiveness of regulations in each state.

New York								
Size (TL")								
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.345	0.345	0.345	0.345	0.345	0.345	0.400	0.468
2	0.123	0.123	0.123	0.123	0.123	0.123	0.217	0.319
3	0.047	0.047	0.047	0.047	0.047	0.047	0.149	0.255
4	0.021	0.021	0.021	0.021	0.021	0.021	0.128	0.238
5	0.009	0.009	0.009	0.009	0.009	0.009	0.115	0.226
6	0.004	0.004	0.004	0.004	0.004	0.004	0.111	0.221
7	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.217
8	0.000	0.000	0.000	0.000	0.000	0.000	0.106	0.217

New Jersey								
Size (TL")								
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.379	0.379	0.379	0.379	0.479	0.567	0.644	0.712
2	0.154	0.154	0.154	0.154	0.318	0.465	0.572	0.655
3	0.080	0.080	0.080	0.080	0.268	0.430	0.548	0.636
4	0.042	0.042	0.042	0.042	0.243	0.411	0.532	0.622
5	0.028	0.028	0.028	0.028	0.235	0.403	0.526	0.617
6	0.024	0.024	0.024	0.024	0.231	0.399	0.524	0.614
7	0.021	0.021	0.021	0.021	0.230	0.398	0.524	0.614
8	0.019	0.019	0.019	0.019	0.229	0.397	0.524	0.614

Delaware								
Size (TL")								
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.308	0.308	0.308	0.308	0.308	0.308	0.308	0.408
2	0.124	0.124	0.124	0.124	0.124	0.124	0.124	0.258
3	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.217
4	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.201
5	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.194

6	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.187
7	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.181
8	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.174

Maryland

Size (TL")

Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.370	0.370	0.370	0.370	0.370	0.370	0.410	0.450
2	0.020	0.020	0.020	0.020	0.020	0.020	0.120	0.290
3	0.010	0.010	0.010	0.010	0.010	0.010	0.110	0.280
4	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.280
5	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.280
6	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.280
7	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.280
8	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.280

Table 8 (continued). The effect of various size and possession limits on 2001 summer flounder recreational landings by state. The tables contain the proportional reduction in number of summer flounder landed and are adjusted for the effectiveness of regulations in each state.

Virginia								
Size (TL")								
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.513	0.513	0.513	0.563	0.613	0.686	0.723	0.758
2	0.225	0.225	0.225	0.348	0.439	0.539	0.596	0.656
3	0.116	0.116	0.116	0.270	0.374	0.487	0.547	0.620
4	0.055	0.055	0.055	0.229	0.335	0.452	0.522	0.602
5	0.028	0.028	0.028	0.203	0.310	0.429	0.508	0.594
6	0.013	0.013	0.013	0.189	0.298	0.423	0.504	0.591
7	0.005	0.005	0.005	0.181	0.292	0.421	0.502	0.588
8	0.001	0.001	0.001	0.178	0.289	0.421	0.502	0.588

North Carolina								
Size (TL")								
Bag	0	15.0	15.5	16.0	16.5	17.0	17.5	18.0
1	0.329	0.329	0.329	0.474	0.599	0.691	0.783	0.882
2	0.099	0.099	0.099	0.289	0.493	0.645	0.743	0.868
3	0.026	0.026	0.026	0.243	0.474	0.632	0.743	0.868
4	0.000	0.000	0.000	0.230	0.474	0.632	0.743	0.868
5	0.000	0.000	0.000	0.230	0.474	0.632	0.743	0.868
6	0.000	0.000	0.000	0.230	0.474	0.632	0.743	0.868
7	0.000	0.000	0.000	0.230	0.474	0.632	0.743	0.868
8	0.000	0.000	0.000	0.230	0.474	0.632	0.743	0.868

Table 9. The number of summer flounder landed by mode, Maine through North Carolina, 1981-2001.

	<u>TOTAL</u>		
	<u>SHORE</u>	<u>P/C</u>	<u>P/R</u>
1981	3,145,682	1,362,254	5,058,638
1982	1,120,521	5,936,006	8,416,174
1983	3,963,674	3,574,229	13,458,397
1984	1,250,472	2,495,735	13,623,841
1985	786,184	1,152,248	9,127,759
1986	1,237,032	1,608,909	8,774,922
1987	406,095	1,150,096	6,308,571
1988	945,864	1,134,353	7,879,445
1989	180,270	141,320	1,395,175
1990	261,898	413,242	3,118,445
1991	565,403	597,608	4,904,636
1992	275,473	375,245	4,351,388
1993	342,226	1,013,464	5,138,355
1994	447,183	836,363	5,419,145
1995	241,904	267,349	2,816,463
1996	206,929	659,878	6,130,180
1997	255,066	930,636	5,981,121
1998	316,315	360,776	6,302,005
1999	213,446	300,808	3,592,740
2000	569,613	648,756	6,582,708
2001	226,995	329,703	4,736,910
% of total	10	14	76

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division.

Table 10. The number of scup by mode, Maine through North Carolina, 1991-2001.

	<u>TOTAL</u>		
	<u>SHORE</u>	<u>P/C</u>	<u>P/R</u>
1981	772,163	1,054,555	7,256,990
1982	833,430	1,393,724	4,226,957
1983	2,227,111	2,996,661	3,612,789
1984	1,299,566	227,735	4,530,010
1985	1,121,593	325,847	9,362,606
1986	1,898,860	3,228,151	19,696,034
1987	522,310	583,976	8,809,699
1988	698,339	1,137,624	4,226,347
1989	882,604	1,033,319	7,260,511
1990	433,825	1,302,788	6,305,464
1991	1,619,333	2,250,042	9,403,917
1992	974,362	1,017,369	5,743,164
1993	283,540	1,762,051	3,616,037
1994	228,365	914,892	3,122,102
1995	222,397	837,390	1,359,241
1996	120,595	450,864	2,399,998
1997	141,116	451,031	1,321,999
1998	117,057	163,916	929,148
1999	197,877	821,996	2,230,778
2000	550,951	1,140,055	5,552,865
2001	766,084	768,894	3,563,842
% of total	10	15	74

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division.

Table 11. The number of black sea bass landed by mode for recreational fishermen, Maine through North Carolina, 1991-2001.

	TOTAL		
	SHORE	P/C	P/R
1981	452,102	1,440,172	841,479
1982	81,445	8,104,206	2,063,333
1983	222,010	4,005,707	1,403,510
1984	98,228	1,128,295	1,264,893
1985	163,445	2,393,046	1,659,701
1986	1,021,523	16,695,386	4,187,086
1987	71,956	1,157,244	2,238,164
1988	140,755	1,691,299	2,227,900
1989	237,967	1,991,670	2,419,648
1990	289,380	2,268,913	1,710,456
1991	250,678	2,586,148	2,621,275
1992	45,368	2,043,188	1,780,225
1993	54,676	4,579,664	1,562,229
1994	243,346	2,005,888	1,321,626
1995	275,980	5,197,229	1,413,574
1996	70,522	2,631,734	1,062,026
1997	8,337	3,950,335	908,840
1998	7,073	777,874	474,072
1999	19,230	621,353	771,258
2000	171,566	1,791,255	1,666,237
2001	82,958	1,797,948	1,033,867
% of total	4	64	32

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division.

Table 12. The percentage contribution by state to the total summer flounder, scup, and black sea bass recreational landings (MRFSS Type A+B1 in number of fish), 2001.

State	Percent Summer Flounder Landings	Percent Scup Landings	Percent Black Sea Bass Landings
NH	0.00	0.00	0.10
RI	5.07	22.25	4.10
MA	2.87	17.27	1.98
CT	2.89	19.92	0.30
NY	13.22	34.01	5.47
NJ	39.11	6.32	63.83
DE	2.75	0.02	6.74
MD	2.63	0.00	3.96
VA	25.28	0.01	7.70
NC	6.18	0.20	5.84
TOTAL	100.00	100.00	100.00

Table 13. The percentage (%) contribution of summer flounder to the total catch by party/charter vessels by state and month, 1996 - 2001.

<u>STATE</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
CT	0.00%	0.00%	0.00%	0.00%	2.15%	3.61%	3.51%	1.62%	0.41%	0.00%	0.00%	0.00%	1.44%
DE				0.02%	7.61%	12.64%	4.86%	11.71%	6.62%	1.47%	0.55%	0.26%	6.67%
ME	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.01%
MD	0.00%	0.00%	0.00%	0.01%	0.11%	0.30%	0.20%	0.18%	0.28%	0.05%	0.02%	0.00%	0.16%
MA	0.00%	0.00%	0.00%	0.00%	0.03%	0.41%	1.78%	0.53%	0.16%	0.03%	0.00%	0.00%	0.49%
NH			0.00%	0.00%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NJ	0.00%	0.00%	0.00%	0.10%	7.16%	15.50%	23.21%	24.17%	12.52%	3.51%	0.23%	0.04%	11.86%
NY	0.00%	0.00%	0.12%	1.13%	49.88%	54.86%	50.51%	34.67%	11.33%	1.91%	0.29%	0.00%	27.09%
NC	0.00%	0.00%	0.00%	0.00%	1.65%	1.33%	1.12%	0.92%	0.19%	0.11%	0.00%	0.00%	0.94%
RI	0.00%	0.00%	0.00%	0.00%	6.09%	24.33%	25.12%	2.14%	1.11%	0.08%	0.20%	0.02%	4.95%
VA	0.00%	0.00%	0.00%	10.96%	5.34%	4.25%	1.31%	0.63%	1.41%	0.74%	3.32%	0.31%	2.14%
All	0.00%	0.00%	0.01%	0.34%	12.99%	18.82%	21.59%	15.60%	9.16%	2.42%	0.36%	0.03%	11.64%

Source: Unpublished NMFS Vessel Trip Report data.

Table 14. The percentage (%) contribution of scup to the total catch by party/charter vessels by state and month, 1996 - 2001.

<u>STATE</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
CT	0.00%	0.00%	0.00%	0.00%	0.01%	1.39%	2.37%	4.92%	8.08%	12.94%	2.13%	0.26%	5.86%
DE				0.00%	0.00%	0.00%	0.00%	1.03%	0.06%	0.43%	0.00%	0.00%	0.22%
ME	0.00%	0.00%	0.00%	0.05%	0.01%	0.02%	0.01%	0.01%	0.00%	3.76%	0.00%	0.00%	0.32%
MD	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.23%	2.63%	0.39%	0.27%	0.49%
MA	0.00%	0.00%	0.00%	0.02%	23.35%	37.94%	22.14%	13.49%	24.99%	16.56%	0.07%	0.00%	19.79%
NH			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NJ	1.76%	0.95%	0.62%	0.00%	0.02%	0.02%	0.29%	2.71%	6.85%	21.78%	22.45%	3.64%	6.50%
NY	0.00%	0.00%	0.00%	0.00%	0.21%	0.77%	14.20%	21.67%	46.34%	54.36%	33.88%	1.81%	24.99%
NC	0.00%	0.00%	0.00%	0.00%	0.00%	0.58%	1.44%	1.87%	0.88%	0.43%	0.00%	0.00%	1.05%
RI	0.00%	0.00%	0.00%	0.00%	1.38%	0.55%	11.57%	3.07%	12.97%	44.21%	32.68%	11.28%	9.14%
VA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%	0.00%	0.38%	0.10%	0.00%	0.00%	0.08%
All	1.14%	0.63%	0.27%	0.00%	4.89%	5.97%	5.88%	7.40%	18.98%	28.20%	22.36%	2.68%	11.08%

Source: Unpublished NMFS Vessel Trip Report data.

Table 15. The percentage (%) contribution of black sea bass to the total catch by party/charter vessels by state and month, 1996 - 2001.

<u>STATE</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>TOTAL</u>
CT	0.13%	0.00%	0.00%	0.00%	0.04%	0.10%	0.05%	0.19%	0.96%	0.55%	0.32%	0.00%	0.39%
DE				0.14%	69.05%	41.59%	10.56%	11.07%	34.01%	40.64%	0.00%	0.00%	17.36%
ME	0.00%	0.00%	0.00%	0.00%	0.02%	0.04%	0.00%	0.00%	0.00%	0.26%	0.00%	0.00%	0.03%
MD	0.00%	0.00%	0.04%	20.09%	96.73%	92.91%	46.07%	18.37%	44.95%	91.93%	97.32%	86.64%	60.60%
MA	0.00%	0.00%	0.00%	0.00%	2.36%	2.53%	3.59%	2.66%	4.60%	2.18%	0.35%	0.00%	2.51%
NH			0.00%	0.00%	0.00%	0.00%	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%
NJ	13.05%	17.48%	16.11%	3.43%	37.38%	31.19%	17.61%	19.12%	45.36%	58.85%	53.12%	18.52%	32.44%
NY	0.10%	0.02%	0.05%	0.47%	7.51%	15.63%	12.60%	21.59%	25.20%	25.66%	33.72%	7.81%	19.06%
NC	0.00%	1.78%	6.93%	17.45%	29.90%	37.40%	43.38%	38.24%	50.82%	28.97%	5.99%	0.00%	37.88%
RI	4.84%	0.00%	0.00%	0.08%	0.08%	1.15%	3.51%	0.57%	52.34%	8.32%	23.27%	17.40%	8.79%
VA	89.91%	68.51%	0.16%	50.01%	63.33%	18.03%	8.26%	5.25%	57.01%	90.68%	94.18%	94.03%	34.42%
All	10.09%	14.43%	7.04%	3.05%	24.40%	22.42%	13.65%	12.70%	33.89%	46.52%	50.75%	17.16%	23.84%

Source: Unpublished NMFS Vessel Trip Report data.

Table 16. Summary of federal management measures for the summer flounder recreational fishery, 1993-2002.

<u>Measure</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Harvest Limit (m lb)	8.38	10.67	7.76	7.41	7.41	7.41	7.41	7.41	7.16	9.72
Landings (m lb)	8.83	9.33	5.42	9.82	11.87	12.48	8.37	16.47	11.64	8.13 ^a
Possession Limit	6	8	6/8	10	8	8	8	8	3	^b
Size Limit (in TL)	14	14	14	14	14.5	15	15	15.5	15.5	^b
Open Season	5/15- 9/30	4/15- 10/15	-	-	-	-	5/29- 9/11	5/10- 10/2	5/25- 9/4	^b

^a Projected.

^b State specific conservation equivalency measures.

Table 17. Summer flounder recreational management measures by state, 2001.

<u>State</u>	<u>Minimum Size</u> <u>(inches)</u>	<u>Possession</u> <u>Limit</u>	<u>Open</u> <u>Season</u>
Massachusetts	16.5	7	May 26 - Sept. 5
Rhode Island	17.5	6	May 26 - Sept. 2
Connecticut	17.5	6	All year
New York	17.0	7	May 2 - Oct. 31
New Jersey	16.0	8	May 12 - Sept. 11
Delaware	17.5	8	May 5 - Dec. 31
Maryland	17.0	8	Apr. 25 - July 24 Aug. 7 - Dec. 31
Potomac River Fisheries Commission	16.0	8	July 13 - Dec. 31
Virginia	15.5	8	Mar. 29 - Jul. 24 Aug. 8 - Dec. 31
North Carolina	15.5	8	All year except May 1 - May 14

Table 18. Summer flounder recreational management measures by state, 2002.

<u>State</u>	<u>Minimum Size</u> <u>(inches)</u>	<u>Possession</u> <u>Limit</u>	<u>Open</u> <u>Season</u>
Massachusetts	16.5	7	All year
Rhode Island	18.0	5	May 25 - Sept. 20
Connecticut	17.0	6	All year
New York	17.0	7	May 2 - Oct. 31
New Jersey	16.5	8	May 18 - Sept. 24
Delaware	17.5	4	May 16 - Dec. 31
Maryland	17.0	8	Jan. 1 - July 24 Aug. 12 - Dec. 31
Potomac River Fisheries Commission	17.0	8	Jan. 1 - July 24 Aug. 12 - Dec. 31
Virginia	17.5	8	Mar. 29 - Jul. 23 Aug. 8 - Dec. 31
North Carolina	15.5	8	July 4-Nov. 19

Table 19. Summary of management measures for the scup recreational fishery, 1996-2002.

<u>Measure</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002^c</u>
Harvest Limit (m lb)	-	1.947	1.553	1.238	1.238	1.76	2.71
Landings (m lb)	2.156	1.198	0.875	1.886	5.443	4.262	3.76 ^a
Possession Limit	-	-	-	-	-	50	20
Size Limit (in TL) ^b	7	7	7	7	-	9	10
Open Season	-	-	-	-	-	8/15-10/31	1/1-2/28 7/1-10/2

^aProjected.

^bCoastwide minimum size limit, some states have larger minimum size limits.

^cThe Board developed a conservation equivalency program for scup in 2002.

Table 20. Scup recreational management measures by state, 2001.

<u>State</u>	<u>Minimum Size</u>	<u>Possession Limit</u>	<u>Open Season</u>
Massachusetts	9"	50 fish	Jan. 1-Oct. 6
Rhode Island	10"	50 fish	May 26-Sept. 2
Connecticut	9"	25 fish	June 3-Oct. 23
New York	9"	50 fish	July 1-Nov. 17
New Jersey	9"	50 fish	July 4-Dec. 31
Delaware	8"	50 fish	All year
Maryland	7"	50 fish	All year
Virginia	8"	50 fish	All year
North Carolina	8"	50 fish	All year

(with the exception of May 1-May 14)

Table 21. Scup recreational management measures by state, 2002.

<u>State</u>	<u>Minimum Size</u>	<u>Possession Limit</u>	<u>Open Season</u>
Massachusetts	9"	100 fish for anglers on party charter boats 50 fish for all other anglers	May 10 - December 31
Rhode Island	10"	Period 1: 8 fish Period 2: 50 fish	Period 1: July 1 - August 23 Period 2: August 24 - December 31
Connecticut	10"	50 fish	July 13 - September 25
New York	10"	50 fish	Party/Charter Boats: June 25 - November 30 All other anglers: October 1 - November 30
New Jersey	10"	50 fish	July 1 - Dec. 31
Delaware	8"	50 fish	All year
Maryland	8"	50 fish	All year
Virginia	8"	50 fish	All year
North Carolina	8"	50 fish	All year

Table 22. Summary of management measures for the black sea bass recreational fishery, 1996-2002.

<u>Measure</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Harvest Limit (m lb)	-	-	3.15	3.15	3.15	3.15	3.43
Landings (m lb)	4.0	4.3	1.2	1.7	4.0	3.4	4.40 ²
Possession Limit	-	-	- ¹	- ¹	- ¹	25	25
Size Limit (TL in)	9	9	10	10	10	11	11.5
Open Season	-	-	1/1- 7/30	-	-	1/1- 2/28	-
			8/16- 12/31			5/10- 12/31	

¹There was no federal possession limit but some states implemented a 20 fish possession limit in these years.

²Projected.

Table 23. Black sea bass recreational management measures by state, 2001.

<u>State</u>	<u>Minimum Size</u>	<u>Possession Limit</u>	<u>Open Season</u>
Massachusetts	12"	20	5/10-12/31
Rhode Island	11"	25	1/1-2/28 5/10-12/31
Connecticut	11"	25	5/10-12/31
New York	11"	25	1/1-2/28 5/10-12/31
New Jersey	11"	25	1/1-2/28 5/10-12/31
Delaware	11"	25	1/1-2/28 5/10-12/31
Maryland	11"	25	1/1-2/28 5/10-12/31
PRFC	11"	25	1/1-2/28 5/10-12/31
Virginia	11"	25	4/1-7/14 8/15-12/31
North Carolina	10"	25 fish-N. of Cape Hatteras	1/1-2/28 5/10-12/31- N. of Cape Hatteras

Table 24. Black sea bass recreational management measures by state, 2002.

<u>State</u>	<u>Minimum Size</u>	<u>Possession Limit</u>	<u>Open Season</u>
Massachusetts	12"	20	All year
Rhode Island	11.5"	25	All year
Connecticut	11.5"	25	All year
New York	11.5"	25	All year
New Jersey	11.5"	25	All year
Delaware	11.5"	25	5/10-12/31

Maryland	11.5"	25	1/1-2/28 5/10-12/31
PRFC	11.5"	25	All year
Virginia	11.5"	25	All year
North Carolina	11.5"	25 fish-N. of Cape Hatteras	All year

Table 25. Recreational anglers' ratings (mean) of reasons for marine fishing, by subregion.

Statement	New England			Mid-Atlantic		
	Not Important	Somewhat Important	Very Important	Not Important	Somewhat Important	Very Important
To Spend Quality Time with Friends and Family	4.4%	14.3%	81.3%	3.0%	12.0%	85.0%
To Enjoy Nature and the Outdoors	1.4%	10.1%	88.5%	1.1%	11.6%	87.3%
To Catch Fish to Eat	42.2%	37.4%	20.4%	29.3%	40.1%	30.6%
To Experience the Excitement or Challenge of Sport Fishing	6.2%	24.9%	68.8%	8.4%	26.0%	65.6%
To be Alone	55.0%	27.9%	17.1%	57.7%	25.8%	16.4%
To Relax and Escape from my Daily Routine	3.4%	13.3%	83.3%	2.6%	11.9%	85.5%
To Fish in a Tournament or when Citations are Available	78.6%	14.0%	7.4%	73.4%	17.1%	9.5%

Source: Steinback *et al.*, 1999.

Table 26. Recreational anglers' ratings (mean) of fishing regulation methods, by subregion.

Type of Regulation	New England		Mid-Atlantic	
	Support	Oppose	Support	Oppose
Limits on the Minimum Size of Fish You Can Keep	92.5%	7.5%	93.2%	6.8%
Limits on the Number of Fish You Can Keep	91.1%	8.9%	88.3%	11.7%
Limits on the Times of the Year When You Can Keep the Fish You Catch	78.8%	21.2%	77.1%	22.9%
Limits on the Areas You Can Fish	67.9%	32.1%	66.0%	34.0%

Source: Steinback *et al.*, 1999.

Table 27. Recreational anglers' ratings (mean) of fishing regulation methods, by mode.

Type of Regulation	Party/Charter		Private/Rental		Shore	
	Support	Oppose	Support	Oppose	Support	Oppose
Limits on the Minimum Size of Fish You Can Keep	92.1%	7.9%	94.4%	5.6%	90.1%	9.9%
Limits on the Number of Fish You Can Keep	87.9%	12.1%	90.0%	10.0%	87.7%	12.3%
Limits on the Times of the Year When You Can Keep the Fish You Catch	79.2%	20.8%	78.3%	21.7%	75.0%	25.0%
Limits on the Areas You Can Fish	74.4%	25.6%	65.9%	34.1%	63.6%	36.4%

Source: Steinback *et al.*, 1999.

Table 28. Party/charter boats catch disposition (number of fish) from VTR data for all species, summer flounder, scup, and black sea bass, ME-NC, 1996-2001.

	All species		Summer flounder		Scup		Black sea bass	
	Landings (# of fish)	Discards (# of fish)	Landings (# of fish)	Discards (# of fish)	Landings (# of fish)	Discards (# of fish)	Landings (# of fish)	Discards (# of fish)
1996	3,385,534	1,281,615	346,648	384,972	318,946	47,831	1,197,819	199,731
1997	3,836,547	1,306,266	369,334	304,634	252,359	46,530	871,321	140,667
1998	3,590,045	2,058,840	324,681	334,433	398,024	101,558	471,049	278,223
1999	3,772,959	1,957,156	200,632	529,749	418,735	69,778	672,475	405,757
2000	3,893,901	1,901,499	250,380	381,379	669,089	130,275	1,080,271	737,392
2001	3,961,027	1,977,552	137,250	268,107	953,974	239,410	995,870	799,760

Source: Unpublished NMFS Vessel Trip Report data.

Table 29. Projected recreational summer flounder landings (in number of fish) relative to targets, for 2002, by state.

<u>State</u>	<u>2002 Target</u>	<u>2002 Landings*</u>	<u>% Difference</u>
MA	241,000	153,853	36
RI	249,000	194,052	22
CT	164,000	99,481	39
NY	775,000	699,287	10
NJ	1,719,000	1,033,089	40
DE	138,000	106,729	23
MD	130,000	74,241	43
VA	734,000	773,598	-5
NC	246,000	186,867	24

*Projected based on 2001 data.

Table 30. The percent of measured scup (MRFSS Type A fish) less than 7, 8, 9, and 10" TL by state, 2000, 2001, and 2002. The number in parentheses is sample size.

2000					
<u>State</u>	<u>7"</u>	<u>8"</u>	<u>9"</u>	<u>10"</u>	
ME	-	-	-	-	(0)
NH	-	-	-	-	(0)
MA	35.7	42.9	42.9	42.9	(28)
RI	0	0	0.7	9.3	(151)
CT	0	2.3	21	57.4	(176)
NY	0.6	19.6	31.9	46.6	(163)
NJ	25	25	100	100	(4)
DE	0	0	60	100	(10)
MD	-	-	-	-	(0)
VA	0	0	0	0	(1)
NC	0	0	0	0	(2)
Total	2.2	9.2	20.9	40.6	(535)
2001					
<u>State</u>	<u>7"</u>	<u>8"</u>	<u>9"</u>	<u>10"</u>	
ME	-	-	-	-	(0)
NH	-	-	-	-	(0)
MA	0	0	2.7	15.1	(73)
RI	0	2.1	9.2	27.7	(523)
CT	0	0.3	0.9	7.3	(328)
NY	0	0	8.2	22.5	(49)
NJ	0	0	1.8	26.8	(56)
DE	0	0	40	60	(5)
MD	-	-	-	-	(0)
VA	-	-	-	-	(0)
NC	0	0	0	0	(3)
Total	0	1.2	5.8	20.2	(1037)
2002 ¹					
<u>State</u>	<u>7"</u>	<u>8"</u>	<u>9"</u>	<u>10"</u>	
ME	-	-	-	-	(0)
NH	-	-	-	-	(0)
MA	0	0	0.4	3.7	(243)
RI	0	0	0.7	10.8	(297)
CT	0	0	0	7.53	(93)
NY	0	0	1.4	21.4	(70)
NJ	0	0	0	5.0	(20)
DE	0	0	0	0	(1)
MD	0	0	0	0	(1)
VA	-	-	-	-	(0)
NC	-	-	-	-	(0)
Total	0	0	0.6	8.8	(725)

¹Waves 1-4

Table 31. The percent of successful anglers landing 1 to 25 scup (MRFSS Type A fish) per trip, waves 1-4, 2002.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	89	29.77	89	29.77
2	41	13.71	130	43.48
3	48	16.05	178	59.53
4	35	11.71	213	71.24
5	14	4.68	227	75.92
6	20	6.69	247	82.61
7	3	1.00	250	83.61
8	23	7.69	273	91.30
10	4	1.34	277	92.64
12	1	0.33	278	92.98
13	2	0.67	280	93.65
14	2	0.67	282	94.31
15	1	0.33	283	94.65
19	5	1.67	288	96.32
21	3	1.00	291	97.32
25	8	2.68	299	100.00

Table 32. The percent of successful anglers landing 1 to 50 scup (MRFSS Type A fish) per trip, 2001.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	177	25.73	177	25.73
2	115	16.72	292	42.44
3	73	10.61	365	53.05
4	37	5.38	402	58.43
5	52	7.56	454	65.99
6	35	5.09	489	71.08
7	34	4.94	523	76.02
8	31	4.51	554	80.52
9	7	1.02	561	81.54
10	34	4.94	595	86.48
11	9	1.31	604	87.79
12	9	1.31	613	89.10

13	14	2.03	627	91.13
15	11	1.60	638	92.73
17	1	0.15	639	92.88
18	7	1.02	646	93.90
20	4	0.58	650	94.48
21	3	0.44	653	94.91
22	3	0.44	656	95.35
23	2	0.29	658	95.64
24	3	0.44	661	96.08
25	6	0.87	667	96.95
28	4	0.58	671	97.53
32	1	0.15	672	97.67
35	3	0.44	675	98.11
36	3	0.44	678	98.55
42	3	0.44	681	98.98
44	1	0.15	682	99.13
47	2	0.29	684	99.42
48	1	0.15	685	99.56
50	3	0.44	688	100.00

Table 33. Measured black sea bass (MRFSS Type A fish) less than 10" TL (1992-1999) , 11" (2000-2001), and 11.5" (2002) by state and year.

<u>State</u>	<u>Year</u>										
	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002¹</u>
ME											
NH									0	7.1	0
MA	14.3	0	0	0	0	0	0	-	44.4	0	0
RI	23.1	2.3	5.3	32.2	10.0	28.6	15.6	2.9	17.4	2.7	0
CT	50.0	55.6	-	44.4	0	0	0	0	0	0	0
NY	54.7	45.5	70.3	60.9	25.0	55.2	0	37.9	42.2	4.4	5.9
NJ	39.4	38.1	35.0	60.2	37.0	36.2	8.4	3.1	47.0	2.5	3.1
DE	52.1	51.1	56.5	55.4	36.7	24.0	8.5	4.8	26.1	9.8	12.1
MD	35.0	21.2	29.2	34.7	0	15.0	10.0	3.0	37.2	6.4	2.6
VA	31.5	42.6	47.8	50.5	52.7	20.1	18.9	15.3	9.3	6.3	8.4
NC	30.6	37.1	29.8	39.9	26.5	26.3	33.5	17.4	31.7	22.5	17.1
TOTAL	38.4	40.7	44.3	48.6	42.3	26.5	18.4	13.1	25.6	8.2	9.0

*waves 1-4

Table 34. The percent of successful anglers landing 1 to 30 black sea bass (MRFSS Type A fish) per trip, waves 1-4, 2002.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	286	31.29	286	31.29
2	148	16.19	434	47.48
3	124	13.57	558	61.05
4	70	7.66	628	68.71
5	55	6.02	683	74.73
6	31	3.39	714	78.12
7	23	2.52	737	80.63
8	44	4.81	781	85.45
9	16	1.75	797	87.20
10	12	1.31	809	88.51
11	12	1.31	821	89.82
12	19	2.08	840	91.90
13	16	1.75	856	93.65
14	3	0.33	859	93.98
15	15	1.64	874	95.62
16	4	0.44	878	96.06
17	5	0.55	883	96.61
18	8	0.88	891	97.48
20	5	0.55	896	98.03
22	2	0.22	898	98.25
23	2	0.22	900	98.47
25	1	0.11	901	98.58
26	1	0.11	902	98.69
27	2	0.22	904	98.91
28	9	0.98	913	99.89
30	1	0.11	914	100.00

Table 35. The percent of successful anglers landing 1 to 84 black sea bass (MRFSS Type A fish) per trip, 2001.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	453	33.58	453	33.58
2	238	17.64	691	51.22
3	112	8.30	803	59.53
4	100	7.41	903	66.94
5	61	4.52	964	71.46
6	64	4.74	1028	76.20
7	24	1.78	1052	77.98
8	46	3.41	1098	81.39
9	20	1.48	1118	82.88
10	47	3.48	1165	86.36
11	13	0.96	1178	87.32
12	31	2.30	1209	89.62
13	14	1.04	1223	90.66
14	18	1.33	1241	91.99
15	12	0.89	1253	92.88
16	4	0.30	1257	93.18
17	3	0.22	1260	93.40
18	10	0.74	1270	94.14
19	5	0.37	1275	94.51
20	18	1.33	1293	95.85
21	3	0.22	1296	96.07
22	8	0.59	1304	96.66
23	1	0.07	1305	96.74
24	16	1.19	1321	97.92
25	13	0.96	1334	98.89
26	2	0.15	1336	99.04
27	1	0.07	1337	99.11
28	2	0.15	1339	99.26
29	2	0.15	1341	99.41
30	3	0.22	1344	99.63
34	3	0.22	1347	99.85
39	1	0.07	1348	99.93

84	1	0.07	1349	100.00
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Table 36. Summer flounder, scup, and black sea bass recreational landings (MRFSS Type A+B1 in number of fish) by year and area, Maine through North Carolina.

Year	Summer Flounder		Scup		Black Sea Bass	
	State < 3 mi	EEZ > 3 mi	State < 3 mi	EEZ > 3 mi	State < 3 mi	EEZ > 3 mi
1995	95.94%	4.06%	67.22%	32.78%	19.71%	80.29%
1996	94.26%	5.74%	93.29%	6.71%	23.95%	76.05%
1997	90.83%	9.17%	91.18%	8.82%	14.07%	85.93%
1998	93.87%	6.13%	89.12%	10.88%	16.13%	83.87%
1999	88.30%	11.70%	91.70%	8.30%	27.36%	72.64%
2000	88.76%	11.24%	91.66%	8.34%	33.86%	66.14%
2001	92.33%	7.67%	93.51%	6.49%	19.44%	80.56%
Average	91.88%	8.12%	88.56%	11.44%	21.60%	78.40%

Source: MRFSS.

Table 37. The percent of successful anglers landing 1 to 15 summer flounder (MRFSS Type A fish) per trip, waves 1-4, 2002.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1207	54.99	1207	54.99
2	607	27.65	1814	82.64
3	241	10.98	2055	93.62
4	67	3.05	2122	96.67
5	34	1.55	2156	98.22
6	10	0.46	2166	98.68
7	5	0.23	2171	98.91
8	18	0.82	2189	99.73
9	1	0.05	2190	99.77
10	4	0.18	2194	99.95
15	1	0.05	2195	100.00

Table 38. The percent of successful anglers landing 1 to 30 summer flounder (MRFSS Type A fish) per trip, 1992.

C_PER_T	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1622	51.9	1622	51.9
2	652	20.9	2274	72.8
3	395	12.6	2669	85.4
4	186	6.0	2855	91.4
5	120	3.8	2975	95.2
6	57	1.8	3032	97.0
7	20	0.6	3052	97.7
8	28	0.9	3080	98.6

9	3	0.1	3083	98.7
10	17	0.5	3100	99.2
11	1	0.0	3101	99.2
12	10	0.3	3111	99.6
13	3	0.1	3114	99.6
14	1	0.0	3115	99.7
15	7	0.2	3122	99.9
16	1	0.0	3123	99.9
21	1	0.0	3124	100.0
30	1	0.0	3125	100.0

Table 39. The percent of measured summer flounder (MRFSS Type A fish) less than 15" TL (1998 and 1999), 15.5" TL (2000), and state specific size limits (2001 and 2002). The number in parentheses is sample size.

State	1998		1999		2000		2001			2002		
	% Below Size Limit	Number Measured	% Below Size Limit	Number Measured	% Below Size Limit	Number Measured	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	0	(1)	-	-	-	-	-	-
MA	-	-	25	(24)	23.3	(43)	3.9	(26)	16.5	20.0	(60)	16.5
RI	2.9	(105)	11.9	(160)	18.1	(282)	14.8	(196)	17.5	12.2	(230)	18.0
CT	11.2	(402)	15.5	(258)	2.9	(379)	3.1	(129)	17.5	6.7	(75)	17.0
NY	11.1	(350)	5.9	(272)	5.5	(325)	5.8	(274)	17.0	6.9	(246)	17.0
NJ	13.5	(281)	4.1	(635)	9.8	(705)	14.7	(1169)	16.0	6.4	(548)	16.5
DE	15.7	(1314)	19	(216)	5.2	(249)	9.2	(325)	17.5	7.5	(267)	17.5
MD	11.7	(622)	3.8	(263)	9.1	(243)	4.0	(101)	17.0	5.2	(77)	17.0
VA	33.3	(150)	0.5	(183)	4.4	(386)	3.9	(1094)	15.5	24.5	(885)	17.5
NC	7.4	(838)	59.4	(544)	56.0	(703)	66.6	(915)	15.5	75.4	(475)	15.5
Coast	56.2	(1239)	18.9	(2555)	17.1	(3316)	17.2	(4229)	15.5	-	(2863)	-

Table 40. Percent of summer flounder landings for each wave, 1994-1998.

	<u>Jan-Feb</u>	<u>Mar-Apr</u>	<u>May-Jun</u>	<u>Jul-Aug</u>	<u>Sep-Oct</u>	<u>Nov-Dec</u>
NH	0%	0%	0%	0%	100%	0%
MA	0%	0%	25%	71%	4%	0%
RI	0%	0%	26%	70%	3%	0%
CT	0%	0%	17%	76%	7%	0%
NY	0%	0%	28%	59%	13%	0%
NJ	0%	0%	25%	47%	28%	0%
DE	0%	0%	25%	64%	10%	0%
MD	0%	3%	27%	61%	9%	0%
VA	0%	3%	41%	38%	16%	0%
NC	0%	6%	26%	32%	30%	7%
Coast	0%	0.9%	28%	51%	19%	0%

Table 41. MRFSS projected total estimated angler effort (fishing trips) in 2002, by state.

State	Party/Charter	Private/Rental	Shore
ME	12,697	422,057	470,901
NH	29,120	142,674	147,050
MA	105,829	2,413,821	1,582,261
RI	36,455	556,127	823,398
CT	51,740	978,296	612,697
NY	359,935	2,064,321	1,764,021
NJ	365,477	2,950,031	2,103,556
DE	62,469	583,757	431,982
MD	183,636	1,683,049	1,164,701
VA	72,185	2,241,765	951,888
NC	178,350	1,898,944	3,518,241
Total	1,457,894	15,934,842	13,570,696

Table 42. Number of summer flounder recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2003.

Year	Number of Fishing Trips ^a	Recreational Harvest Limit (million lb)	Recreational Landings of Summer Flounder (million lb) ^b
1991	4,536,651	None	7.96
1992	3,820,071	None	7.15
1993	4,671,638	8.38	8.83
1994	5,769,037	10.67	9.33
1995	4,683,754	7.76	5.42
1996	4,885,179	7.41	9.82
1997	5,595,636	7.41	11.87
1998	5,268,926	7.41	12.48
1999	4,219,909	7.41	8.37
2000	5,583,298	7.41	16.47
2001	6,129,094	7.16	11.64
2002	N/A	9.72	8.13 ^c
2003	-	9.28 ^d	-

^a Estimated number of recreational fishing trips (expanded) where the primary or secondary target species was summer flounder, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.

^b From Maine through North Carolina. Source: MRFSS.

^c Projected landings based on 2001 data.

^d Adjusted for research set-aside.

N/A = Data not available.

Table 43. Average daily trip expenditures by recreational fishermen in the Northeast region by mode, in 1998.

Expenditures	Party/Charter	Private/Rental	Shore
	\$		
Travel	4.00	4.09	4.41
Food, drink, refreshments	17.10	15.51	16.73
Lodging at motels, cabins, lodges, campgrounds	5.49	1.65	5.37
Public transportation or car rental	1.06	0.53	0.76
Boat fuel	0	15.24	0
Guide or package fees	35.60	0	0
Access and/or boat launching fees	0.67	3.06	0.44
Equipment	1.70	0.37	0.22
Bait	1.67	6.64	5.21
Ice	1.31	2.69	1.92
Total	68.60	49.78	35.06

Table 44. Number of scup recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2003.

Year	Number of Fishing Trips ^a	Recreational Harvest Limit (million lb)	Recreational Landings of Scup (million lb) ^b
1991	793,593	None	8.09
1992	499,780	None	4.41
1993	499,703	None	3.20
1994	435,625	None	2.63
1995	242,956	None	1.34
1996	241,322	None	2.16
1997	198,754	1.95	1.20
1998	213,842	1.55	0.88
1999	231,596	1.24	1.89
2000	462,388	1.24	5.43
2001	484,594	1.76	4.26
2002	N/A	2.71 ^d	3.76 ^c
2003	-	4.01 ^d	-

^aEstimated number of recreational fishing trips where the primary target species was scup, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.

^bFrom Maine to North Carolina. Source MRFSS.

^cProjected landings based on 2001 data.

^dAdjusted for research set-aside.

N/A = Data not available.

Table 45. Number of black sea bass recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2003.

Year	Number of Fishing Trips ^a	Recreational Harvest Limit (million lb)	Recreational Landings of BSB (million lb) ^b
1991	288,691	None	4.19
1992	263,957	None	2.71
1993	299,404	None	4.84
1994	253,888	None	2.95
1995	313,537	None	6.21
1996	231,090	None	4.00
1997	310,898	None	4.27
1998	137,734	3.15	1.15
1999	136,452	3.15	1.70
2000	246,134	3.15	4.01
2001	287,977	3.15	3.42
2002	N/A	3.43 ^d	4.68 ^c
2003	-	3.43 ^d	-

^aEstimated number of recreational fishing trips (expanded) where the primary target species was black sea bass, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.

^bFrom Maine to Cape Hatteras, North Carolina. Source MRFSS.

^cProjected landings based on 2001 data.

^dAdjusted for research set-aside.

N/A = Data not available.

Table 46. Preferred Scup Alternative 1 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	9	\$0
NH	29,120	0.0%	0	12	\$0
MA	105,829	9.77%	10,340	49	\$8,593
RI	36,455	0.16%	57	14	\$166
CT	51,740	0.0%	0	3	\$0
NY	359,935	0.01%	45	31	\$59
NJ	365,477	0.04%	159	35	\$185
DE	62,469	0.0%	0	0	\$0
MD	183,636	0.34%	625	1	\$25,450
VA	72,185	0.0%	0	7	\$0
NC	178,350	0.11%	198	3	\$2,688

Table 47. Preferred Black Sea Bass Alternative 1 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	15	\$0
NH	29,120	0.0%	0	20	\$0
MA	105,829	0.04%	44	95	\$19
RI	36,455	0.36%	133	28	\$193
CT	51,740	0.02%	9	8	\$46
NY	359,935	0.14%	499	46	\$442
NJ	365,477	2.97%	10,847	53	\$8,334
DE	62,469	3.52%	2,199	2	\$44,772
MD	183,636	0.55%	1,015	3	\$13,777
VA	72,185	0.66%	477	19	\$1,022
NC	178,350	0.01%	9	7	\$52

Table 48. Non-preferred Coastwide Alternative 2 for Summer Flounder - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	13	\$0
NH	29,120	0.0%	0	20	\$0
MA	105,829	0.02%	24	103	\$9
RI	36,455	1.07%	389	25	\$634
CT	51,740	0.0%	0	11	\$0
NY	359,935	1.06%	3,822	52	\$2,993
NJ	365,477	0.15%	546	64	\$347
DE	62,469	0.02%	14	2	\$285
MD	183,636	0.007%	14	3	\$190
VA	72,185	0.25%	181	18	\$409
NC	178,350	0.002%	4	7	\$23

Table 49. Non-Preferred Scup Alternative 2 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	9	\$0
NH	29,120	0.0%	0	12	\$0
MA	105,829	11.29%	11,945	49	\$9,927
RI	36,455	3.75%	1,367	14	\$3,976
CT	51,740	0.0%	0	3	\$0
NY	359,935	4.79%	17,250	31	\$22,659
NJ	365,477	0.45%	1,647	35	\$1,916
DE	62,469	0.11%	71	0	\$0
MD	183,636	0.34%	625	1	\$25,450
VA	72,185	0.0%	0	7	\$0
NC	178,350	0.11%	198	3	\$2,688

Table 50. Non-Preferred Black Sea Bass Alternative 2 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	15	\$0
NH	29,120	0.0%	0	20	\$0
MA	105,829	0.04%	0	95	\$0
RI	36,455	0.13%	48	28	\$70
CT	51,740	0.02%	9	8	\$46
NY	359,935	0.0%	0	46	\$0
NJ	365,477	1.67%	6,105	53	\$4,690
DE	62,469	3.26%	2,038	2	\$41,494
MD	183,636	0.22%	401	3	\$5,443
VA	72,185	0.72%	522	19	\$1,119
NC	178,350	0.00002%	3	7	\$17

Table 51. Non-Preferred Scup Alternative 3 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	9	\$0
NH	29,120	0.0%	0	12	\$0
MA	105,829	10.89%	11,530	49	\$9,582
RI	36,455	0.64%	235	14	\$684
CT	51,740	0.0%	0	3	\$0
NY	359,935	0.56%	2,011	31	\$2,642
NJ	365,477	0.13%	488	35	\$568
DE	62,469	0.0%	0	0	\$0
MD	183,636	0.34%	625	1	\$25,450
VA	72,185	0.0%	0	7	\$0
NC	178,350	0.11%	198	3	\$2,688

Table 52. Non-Preferred Black Sea Bass Alternative 3 - effected party/charter effort and the estimated maximum gross revenue loss per party/charter vessel (federally permitted) in each state in the Northeast Region (ME-NC).

State	MRFSS Projected Total Estimated Angler Effort in 2003 Aboard Party/Charter Boats	Estimated Percent of Angler Party/Charter Effort Subject to Measures	Estimated Angler Trips Aboard Party/Charter Boats Subject to Measures	Number of Participating Party/Charter Vessels (VTR 2001)	Average Estimated Maximum Gross Revenue Loss per Party/Charter Vessel in 2003 (\$'s)
ME	12,697	0.0%	0	15	\$0
NH	29,120	0.0%	0	20	\$0
MA	105,829	0.0%	0	95	\$0
RI	36,455	0.13%	48	28	\$70
CT	51,740	0.02%	9	8	\$46
NY	359,935	0.02%	79	46	\$70
NJ	365,477	3.25%	11,864	53	\$9,115
DE	62,469	4.92%	3,073	2	\$62,566
MD	183,636	0.54%	992	3	\$13,465
VA	72,185	1.01%	727	19	\$1,558
NC	178,350	0.01%	9	7	\$52

Table 53. Number of vessels that held federal Northeast party/charter permits in 2001 and reported landings in 2001, by permitted species/species groups^a.

State	Held Fluke, BSB, and Scup	Held BSB Only	Held BSB and Scup	Held BSB and Fluke	Held Scup Only	Held Fluke Only	Held Fluke and Scup	Total Permits
ME	8	2	1	4	0	1	0	16
NH	12	2	0	6	0	2	0	22
MA	43	11	2	39	4	21	0	120
RI	13	6	1	8	0	4	0	32
CT	3	0	0	5	0	3	0	11
NY	26	6	2	12	1	12	2	61
NJ	27	3	2	21	1	11	5	70
DE	0	1	0	1	0	1	0	3
MD	1	0	0	2	0	0	0	3
VA	7	2	0	10	0	1	0	20
NC	3	2	0	2	0	2	0	9
Total	144	35	8	110	6	58	7	368

a-Columns are based on the combinations of permits held and are mutually exclusive.

Table 54. Cumulative effect of the measures proposed under Alternative 2 for summer flounder, Alternative 1 for Scup and Black Sea Bass (Preferred Alternatives). Values indicate the estimated maximum gross revenue loss in 2002 per party/charter vessel by permitted species/species group and homeport state^a.

State	Held Fluke, BSB, and Scup	Held BSB Only	Held BSB and Scup	Held BSB and Fluke	Held Scup Only	Held Fluke Only	Held Fluke and Scup
ME	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NH	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MA	\$8,621	\$19	\$8,612	\$28	\$8,593	\$9	\$8,602
RI	\$993	\$193	\$359	\$827	\$166	\$634	\$800
CT	\$46	\$46	\$46	\$46	\$0	\$0	\$0
NY	\$3,494	\$442	\$501	\$3,435	\$59	\$2,993	\$3,052
NJ	\$8,866	\$8,334	\$8,519	\$8,681	\$185	\$347	\$532
DE	\$45,057	\$44,772	\$44,772	\$45,057	\$0	\$285	\$285
MD	\$39,417	\$13,777	\$39,227	\$13,967	\$25,450	\$190	\$25,640
VA	\$1,431	\$1,022	\$1,022	\$1,431	\$0	\$409	\$409
NC	\$2,763	\$52	\$2,740	\$75	\$2,688	\$23	\$2,711

a-Revenue losses are shown for all possible mutually exclusive combinations of summer flounder, scup, and black sea bass permits for active vessels by state.