2011 Summer Flounder, Scup, and Black Sea Bass Recreational Specifications

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

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Mid-Atlantic Fishery Management Council
in cooperation with the
National Marine Fisheries Service

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1.0 EXECUTIVE SUMMARY

The proposed action would implement recreational fishery management measures to achieve the recreational harvest limits for the summer flounder, scup, and black sea bass fisheries. These management measures would be designed to achieve the recreational harvest limits for summer flounder, scup, and black sea bass. This Environmental Assessment analyzes the possession, size, and/or seasonal limits that will achieve the 2011 recreational harvest limits for the three species.

Summer Flounder Alternatives

For the summer flounder fishery, the preferred alternative (status quo alternative 1) would implement conservation equivalency, as recommended by the Mid-Atlantic Fishery Management Council (MAFMC) and the Atlantic States Marine Fisheries Commission (Commission). Conservation equivalency requires the states to develop state-specific or regional management measures (i.e., possession limits, fish size limits, and/or seasonal limits) to achieve state-specific or regional harvest limits. Under this approach, each state or region may implement unique management measures appropriate to that state or region, so long as they are determined by the Commission to provide equivalent conservation as coastwide measures developed to achieve the overall recreational harvest limit. Also, as required under the conservation equivalency guidelines, the Council recommended precautionary default measures of a 20.0-inch total length (TL) minimum fish size, a 2-fish per person possession limit, and an open season from May 1 through September 30 for 2011; these measures would apply to Federal permit holders landing summer flounder in states that do not implement conservation equivalency measures or for which conservation equivalency measures are not approved by the Board. In addition, the Council and Commission adopted a non-preferred coastwide alternative (no action alternative 2) to be implemented in the Exclusive Economic Zone (EEZ; 3-200 miles) if conservation equivalency is not implemented. These measures include a 18.5-inch TL minimum fish size, a 2-fish per person possession limit, and an open season from May 1 through September 30 for 2011.

There were no habitat or protected resources impacts associated with alternatives 1 and 2. However, the conservation equivalency measures under alternative 1 are expected to have neutral to positive socioeconomic impacts relative to the no action alternative (alternative 2). Alternative 2 is expected to have neutral to negative socioeconomic impacts relative to 2010. The biological impacts associated with alternative 1 are expected to be neutral to positive. For alternative 2, biological impacts could range from slight negative to slight positive. Conservation equivalency recreational management measures under alternative 1 would require each state or region to develop specific recreational measures to allow the fishery to operate in each state or region during critical fishing periods while still achieving conservation goals. This would enable the summer flounder fishery to operate in a way that potentially dissipates potential adverse economic effects in specific states.

Scup Alternatives

For scup, the Council evaluated three alternatives. The preferred alternative (alternative 1 - status quo/no action) would implement a 10.5-inch TL minimum fish size, a 10-fish per person possession limit, and open season of June 6 through September 26 for 2011. There were no habitat or protected resources impacts associated with the preferred alternative or alternatives 2 and 3. The preferred alternative is expected to result in neutral to slight negative biological impacts and neutral to positive social and economic impacts when compared to alternatives 2 and 3. Alternative 2 is the status quo and includes a 10.5-inch TL minimum fish size, a 15-fish per person possession limit, and open seasons of January 1 through February 28 and October 1 through October 31 for 2011. This alternative is expected to result in neutral to positive biological impacts and neutral to negative social and economic impacts. Alternative 3 would implement a 11.0-inch TL minimum fish size, a 10-fish per person possession limit, and open season of May 24 through September 26 for 2011. This alternative is expected to result in neutral to positive biological impacts when compared to alternative 1. Alternative 3 is expected to result in neutral to negative social and economic impacts when compared to status quo alternative 1.

In addition, the Board adopted state-by-state conservation equivalency measures for scup in 2011 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 2011 season. As such, the Federal measures would apply to any vessel operating in Federal waters to any federally permitted party/charter vessel regardless of where they fish.

Black Sea Bass Alternatives

For black sea bass, the Council evaluated three alternatives. The preferred alternative (alternative 1) would implement a 13.0-inch TL minimum fish size, a 25-fish per person possession limit, and open seasons of July 1 through October 1 and November 1 through December 31 for 2011. Non-preferred alternative 2 (status quo/no action) includes a coastwide 12.5-inch TL minimum fish size, a 25-fish per person possession limit, and open season of May 22 through October 11 and November 1 through December 31 for 2011. Alternative 2 is the status quo alternative, and there are no biological, habitat, or protected resources impacts associated with this alternative when compared to 2010. However, neutral to slight positive social and economic impacts are anticipated. Alternative 3 includes a 12.5-inch TL minimum fish size, a 10-fish per person possession limit, and open season of January 1 through December 31 for 2011. There were no habitat or protected resources impacts associated with the preferred alternative or alternatives 2 and 3. However, there may be slight positive biological impacts associated with alternative 1 and when compared to alternatives 2 and 3. In addition, it is expected that alternative 1 and 3 may result in neutral to slight negative social and economic impacts and alternative 3 may result in neutral to positive social and economic impacts, when compared to the status quo.

Table ES-1 presents a qualitative summary of the impacts of the various alternatives. The environmental impacts of the proposed measures were analyzed and the anticipated level of significance of these impacts is discussed in accordance with the National Environmental Policy Act (NEPA) and National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6. Because none of the preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environment, a "Finding of No Significant Impact" is determined.

The measures are expected to achieve the levels of recreational landings for summer flounder, scup, and black sea bass for 2011 as implemented by the National Marine Fisheries Service (NMFS). For each species, the Council analyzed the biological, social, and economic impacts of the preferred alternatives and one or two other alternatives. The proposed action is not expected to result in significant social or economic impacts or significant natural or physical environmental effects.

Table ES-1. Overall qualitative summary of expected impacts from various alternatives considered in this document. A minus sign signifies an expected negative impact, a plus sign signifies a positive impact, zero is used for null impact, and (?) indicates uncertainty associated with a given impact. (S=short-term; L=long-term). Slight impacts are denoted as "sl", such as slight negative (sl-) and unknown are given as "u".

		Environmental Dimensions				
Species	**Alternative**	**Biological**	**EFH**	**Protected Resources**	**Economic**	**Social**
Summer Flounder	**Alternative 1*** Conservation Equivalency preferred; status quo	0/+	0	0	0/+	0/+
	Alternative 2 Coastwide non-preferred; no action	sl-u/sl+u	0	0	0/-	0/-
Scup	**Alternative 1** non-preferred; status quo; no action	0/sl-	0	0	0/+	0/+
	Alternative 2 non-preferred	0/+	0	0	0/-	0/-
	Alternative 3 non-preferred	0/+	0	0	0/-(u)	0/-(u)
Black Sea Bass	**Alternative 1** preferred	0/+	0	0	0/-	0/-
	Alternative 2 non-preferred status quo; no action	0/-	0	0	0/+	0/+
	Alternative 3 non-preferred	0/-	0	0	0/+	0/+

* Alternative 1 includes precautionary default measures; these measures are required to be implemented by a state or states that do not submit a summer flounder management proposal for conservation equivalency or for those states whose measures do not achieve the required reduction. The impacts anticipated with the precautionary default are as follows biological (0/+), EFH (0), protected resources (0), economic (-), and social (-).

2.0 LIST OF ACRONYMS

ABC	Acceptable Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACL	Annual Catch Limit
ADAPT VPA	Adaptive Approach (age-structured) Virtual Population Analysis
AM	Accountability Measure
APA	Administrative Procedures Act
ASAP	Age Structured Assessment Program
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
CEQ	Council on Environmental Quality
CPUE	Catch Per Unit Effort
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
DPSWG	Data Poor Stocks Working Group
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
GRA	Gear Restricted Area
HPTRP	Harbor Porpoise Take Reduction Plan
IMPLAN	Impact Analysis for Planning
I/O	Input-Ouput
IQA	Information Quality Act
IRFA	Initial Regulatory Flexibility Analysis
LNG	Liquified Natural Gas
LOF	List of Fisheries
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MFMT	Maximum Fishing Mortality Threshold
MRFSS	Marine Recreational Fisheries Statistical Survey
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Administrative Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRDC	Natural Resources Defense Council
OY	Optimal Yield
PBR	Potential Biological Removal

PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SAFMC	South Atlantic Fishery Management Council
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SFA	Sustainable Fisheries Act
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SPR	Spawn Per Recruit
SSC	Scienctific and Statistical Committee
TAL	Total Allowable Landings
TED	Turtle Excluder Device
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

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ENVIRONMENTAL ASSESSMENT

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 Purpose and Need of the Action

This action is needed to establish management measures for the 2011 fishing year that will achieve recreational harvest limits for summer flounder, scup, and black sea bass in Federal waters and for vessels in possession of a Federal fisheries permit. The purpose of this action is to propose measures (i.e., recreational fish size limits, possession limits, and/or fishing seasonal limits) that would constrain recreational landings in 2011 to the annual recreational harvest limit. In addition, specific to the summer flounder fishery, the purpose of this document is to provide an alternative whereby states may determine and implement appropriate management measures to achieve their recreational harvest limits. The combined effect of these state management measures must achieve the same level of conservation as would Federal coastwide measures developed to adhere to the overall recreational harvest limit.

Background of Specification Process

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. 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), Amendment 8 (for scup), and Amendment 9 (for black sea bass). 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 EISs were updated in Amendment 13 (approved on March 4, 2003; 68 FR 10181; MAFMC 2002). A summary of the management actions taken in the FMP (Amendments, and framework adjustments to the FMP (frameworks)) is given in Box 4.1.

Box. 4.1 Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.

Year	Document	Plan Species	Management Action
1988	Original FMP	summer flounder	- Established management plan for summer flounder
1991	Amendment 1	summer flounder	- Established an overfishing definition for summer flounder
1993	Amendment 2	summer flounder	- Established rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements for summer flounder - Created the Summer Flounder Monitoring Committee
1993	Amendment 3	summer flounder	- Revised the exempted fishery line - Increased the large mesh net threshold - Established otter trawl retentions requirements for large mesh use
1993	Amendment 4	summer flounder	- Revised state-specific shares for summer flounder quota allocation
1993	Amendment 5	summer flounder	- Allowed states to combine or transfer summer flounder quota
1994	Amendment 6	summer flounder	- Set criteria for allowance of multiple nets on board commercial vessels for summer flounder - Established deadline for publishing catch limits, commercial mgmt. measures for summer flounder
1995	Amendment 7	summer flounder	- Revised the F reduction schedule for summer flounder
1996	Amendment 8	summer flounder and scup	- Incorporated Scup FMP into Summer Flounder FMP and established scup measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1996	Amendment 9	summer flounder and black sea bass	- Incorporated Black Sea Bass FMP into Summer Flounder FMP and established black sea bass measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1997	Amendment 10	summer flounder, scup, and black sea bass	- Modified commercial minimum mesh requirements, continued commercial vessel moratorium, prohibited transfer of fish at sea, and established special permit for party/charter sector for summer flounder
1998	Amendment 11	summer flounder, scup, and black sea bass	- Modified certain provisions related to vessel replacement and upgrading, permit history transfer, splitting, and permit renewal regulations
1999	Amendment 12	summer flounder, scup, and black sea bass	- Revised FMP to comply with the SFA and established framework adjustment process

Box. 4.1 Cont. Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.			
Year	Document	Plan Species	Management Action
2001	Framework 1	summer flounder, scup, and black sea bass	-Established quota set-aside for research for all three species
2001	Framework 2	summer flounder	- Established state-specific conservation equivalency measures for summer flounder
2003	Amendment 13	summer flounder, scup, and black sea bass	- Addressed disapproved sections of Amendment 12 and included new EIS
2003	Framework 3	scup	- Allowed the rollover of winter scup quota - Revised start date for summer quota period for scup fishery
2003	Framework 4	scup	- Established system to transfer scup at sea
2004	Framework 5	summer flounder, scup, and black sea bass	- Established multi-year specification setting of quota for all three species
2006	Framework 6	summer flounder	- Established region-specific conservation equivalency measures for summer flounder
2007	Amendment 14	scup	- Established rebuilding schedule for scup
2007	Framework 7	summer flounder, scup, and black sea bass	- Built flexibility into process to define and update status determination criteria for each plan species - Scup GRAs made modifiable through framework adjustment process
2008	Amendment 16	summer flounder, scup, and black sea bass	- Established standardized bycatch reporting methodology

Amendments 2, 8, and 9 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 makes TAL recommendations that achieve the target mortality rates established in the amendments to reduce overfishing. The Committee bases its recommendations on the following information that may be relevant: (1) commercial and recreational catch data; (2) current estimates of fishing mortality; (3) stock status; (4) recent estimates of recruitment; (5) population assessment models; (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 Board in August 2010 to consider the 2011 commercial quotas and recreational harvest limits for summer flounder, scup, and black sea bass. The Science and Statistical Committee (SSC) and 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 2011 Summer Flounder, Scup, and Black Sea

Bass Specifications, which were submitted to NMFS by the Council in October 2010, described the environmental, economic, and social impacts of the 2011 commercial quotas and recreational harvest limits for summer flounder, scup, and black sea bass, as well as the impacts of commercial measures aimed at achieving the commercial quotas. NMFS implemented summer flounder, scup, and black sea bass commercial quotas and recreational harvest limits for 2011, effective January 1, 2010 (75 FR 81498; December 28, 2010).

The Council and Commission met again in December 2010 to recommend specific measures to attain the recreational harvest limits that had been specified in August 2010. The Council recommendations were based on the information available at that time, as detailed in the proposed rule (75 FR 70192; November 17, 2010). There were no modifications to the TAL for summer flounder, scup, or black sea bass between proposed and final rules. However, the Council recommended and Board voted to increase the scup TAL for 2011. A supplement which evaluates the impacts of the proposed TAL has been prepared and submitted to NMFS for consideration. In this specifications package, all recreational management alternatives (possession, sizes, and seasonal limits) are evaluated for the 2011 fishing year for summer flounder, scup, and black sea bass as outlined in the December 28, 2010 final rule. The Council and Commission 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.

4.2 Management Objective 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; and
6) minimize regulations to achieve the management objectives stated above.

To attain these management objectives, the FMP states the following measures including commercial quotas, minimum sizes, gear regulations, recreational harvest limits, recreational possession limits, seasons, and no-sale provisions may be specified annually. The proposed action is intended to meet the objectives stated above by setting the minimum fish size, possession limits, and fishing seasons for the 2011 summer flounder, scup, and black sea bass recreational fisheries.

4.3 Methods of Analysis

This EA, in conjunction with the supplement to the 2011 Summer flounder, Scup, and Black Sea Bass Specifications, analyzes the possession, size, and/or seasonal limits that will most likely achieve the 2011 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 NEPA. A full description of each alternative, including discussion of a no action alternative, is given for each species in section 5.0 of the EA. The following discussion details the changes in management measures, if any, that will most likely be required to achieve the 2011 recreational harvest limits for summer flounder, scup, and black sea bass. Data from the Marine Recreational Fisheries Statistics Survey (MRFSS) are the primary sources of recreational landings information; catch is provided for two month "waves" (i.e., wave 1 = January and February, wave 2 = March and April) with 6 waves per year.

The 2011 summer flounder recreational harvest limit is 11.58 million lb (5.25 million kg), as published in final rule (75 FR 81498; December 28, 2010). The recreational harvest limit implemented for 2011 is higher than the 2010 recreational harvest limit of 8.59 million lb (3.90 million kg). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2009, summer flounder recreational landings for 2010 are projected to be 4.98 million lb (2.25 million kg). Under conservation equivalency, states develop state-specific or regional measures that meet state-specific or regional recreational harvest targets. A state is required to adjust measures if a reduction in landings is required; no state was required to reduce landings for 2011.

The 2011 scup recreational harvest limit is 4.30 million lb (1.95 million kg), as published in final rule (75 FR 81498; December 28, 2010). On December 15, 2010 the Council recommended an increase in the 2011 scup TAC above those implemented in the final rule. This recommendation is still under consideration and will be addressed by NMFS through rulemaking, if needed. The recreational harvest limit is higher than the 2010 recreational harvest limit of 3.01 million lb (1.37 million kg). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2009, scup recreational landings for 2010 are projected to be 5.74 million lb (2.60 million kg). Assuming the same level of fishing effort in 2011 as in 2010, a coastwide reduction in landings of 25% would be required to achieve the 2011 recreational harvest limit for scup. If the TAC is increased as recommended by the Council on December 15, 2010, to provide a recreational harvest limit 5.74 million lb (2.60 million kg) for 2011, then no coastiwde reduction in landings would be required for 2011.

The 2011 black sea bass recreational harvest limit is 1.84 million lb (0.83 million kg), as published in final rule (75 FR 81498; December 28, 2010). This harvest limit is almost identical to the 2010 recreational harvest limit of 1.83 million lb (0.83 million kg). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2006-2008, black sea bass recreational landings for 2010 are projected to be 3.11 million lb (1.41 million kg). Assuming the same level of fishing effort in 2011 when compared to 2010, a 41% coastwide reduction in landings would be required to achieve the recreational harvest limit for black sea bass in 2011.

5.0 MANAGEMENT ALTERNATIVES

This section provides a description of all considered management alternatives. Further discussion and evaluation of these alternatives is found in section 7.0 of the EA. Please note that for summer flounder, the preferred alternative (alternative 1) is the status quo alternative, which is compared to the no action alternative; alternative 2. Under the management programs for scup and black sea bass, as detailed in the FMP, the status quo alternative is considered the "no action" alternative. Therefore, for purposes of comparing impacts throughout this document, the proposed scup alternatives 2 and 3 are compared to alternative 1, which is the status quo alternative (No Action) as opposed to the "true" no action alternative. For blacks sea bass alternatives 1 and 3 are are compared to status quo (No Action) alternative 2.

The no action management measures for the scup and black sea bass fisheries each involve a set of indefinite (i.e., in force until otherwise changed) management measures, such as minimum allowable sizes, bag limits, seasons, and reporting requirements. For summer flounder, if no action is taken, the recreational measures for 2011 would result in the application of the coastwide measure adopted in 2010. Therefore, if conservation equivalency is approved for 2011, the coastwide measures would become the interim measures in place after conservation equivalency expires on December 31, 2011, until new measures are implemented for the 2012 fishing year.

The implications of the no action alternatives are substantial. In the case of scup and black sea bass, these alternatives would not be consistent with the 2011 recreational harvest limits and would undermine the effectiveness of the current quota-based management systems under the FMP. For summer flounder, the application of coastwide measures, while consistent with the recreational harvest limit, these measure may be more restrive than needed to achieve the recreational harvest limit and are inconsistent with the Council and Commission intent to provide states with the flexibility to respond to geographic difference in the fishery when conservation equivalency was adopted. Therefore, the no action alternative is inconsistent with the goals and objectives of the FMP, as well as its implementing regulations, and measures that are not responsive to the current fishery conditions could result in harvest limits being exceeded, and increase the likelihood that overfishing of summer flounder, scup, and/or black sea bass will occur. The "true" no action alternatives are not considered reasonable; therefore, they are not analyzed further in the EA. The alternatives for summer flounder, scup, and black sea bass are compared to no action alternative 2 for both summer flounder and black sea bass and no action alternative 1 for scup. The alternatives are the status quo alternatives (No Action) as opposed to the "true" no action alternatives described above.

5.1 Summer Flounder

5.1.1 Alternative 1 (Preferred: Status Quo Conservation Equivalency)

Based on the Monitoring Committee recommendation, the Council and Commission voted to recommend conservation equivalency to achieve the 2011 summer flounder recreational harvest limit. The Council and Commission's preferred alternative (alternative 1 - conservation equivalency) would allow states to implement conservation equivalent management measures. Under conservation equivalency, individual states through the Commission process recommend measures to NMFS that are conservation equivalent to the coastwide measures. NMFS then adopts those measures under the provisions in Framework 2 to the FMP. Information about the Commission’s guidelines and process, state-specific management measures, and state-specific harvest targets are included for information purposes only.

Under the Commission’s conservation equivalency plan requirements, state-specific reductions that may be associated with the 2011 coastwide recreational harvest limit of 11.58 million lb (5.25 million kg) are based on the number of fish landed in 1998, and the number of fish projected to have been landed in 2010 based on waves 1-5 which is 1.50 million fish (Table 1). Landings projections for 2010 indicate that no individual state will be required to reduce recreational summer flounder landings in 2011.

To constrain recreational landings to the overall recreational harvest limit, the Commission established conservation equivalency guidelines that require each state 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. In addition, under Framework 6 to the FMP, regional conservation equivalency could be applied. This involves states forming voluntary regions and pooling their recreational harvest limits and landings such that they develop identical regulations for all the states within the region that meet the pooled regional 2011 recreational harvest limit.

The Commission requires each state to submit its conservation equivalency proposal by January 15, 2011 (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.

The FMP requires that the Council and Commission 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 2011, the precautionary default measures include a 20.0-inch total length (TL) minimum fish size, a 2-fish per person possession limit, and open season from May 1 through September 30, 2011 (i.e., closed seasons during January 1 through April 30 and October 1 through December 31).

The precautionary default measures need to be set at or below the level of reduction needed for the state with the highest reduction level to ensure it is constraining for all states. No state is required to reduce coastwide landings in 2011. Therefore, the Monitoring Committee determined that a 20-inch TL minimum size, 2-fish possession limit, and open season of May 1 to September 30 should be sufficiently restrictive to prevent a state from not implementing measures as required under conservation equivalency for 2011. 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 to a state's management measures.

5.1.2 Alternative 2 (Non-preferred: Coastwide Measure/No Action)

The Council and Commission adopted a non-preferred coastwide alternative to be implemented in the EEZ if conservation equivalency is not implemented. These measures include an 18.5-inch TL minimum fish size, a 2-fish per person possession limit, and open season from May 1 through September 30, 2010 (i.e., closed seasons during January 1 through April 30 and October 1 through December 31). An examination of 2010 landings and state regulations indicates that a 18.5-inch TL minimum fish size and 2-fish possession limit in conjunction with the specified season could constrain landings to the recreational harvest limit on a coastwide basis in 2011; although it should be noted that the Monitoring Committee expressed concerns about their ability to evaluate coastwide measures given the data limitations. Relative to the current regulations, these measures would be a more restrictive measure for some states, and less restrictive for others. In addition, if conservation equivalency is approved for 2011, the coastwide measures would become the interim measures in place after conservation equivalency expires on December 31, 2011, until new measures are implemented for the 2012 fishing year.

5.2 Scup

5.2.1 Alternative 1 (Preferred: Status Quo Coastwide Measure/No Action)

The scup landings in 2010 based on waves 1-5 are projected to be 5.74 million lb (2.60 million kg), which is higher than the 2010 recreational harvest limit of 3.01 million lb (1.37 million kg). Based on the projected landings estimate for 2010, landings would have to be reduced by 25% to achieve the recreational harvest limit of 4.30 million lb (1.95 million kg) for 2011. Changes in the possession limits, size limits, and fishing seasons could be considered to achieve the harvest limit. The Council and Commission voted to recommend a 10.5-inch TL minimum fish size, a 10-fish per person possession limit, and open seasons of June 6 through September 26 (i.e., closed seasons of January 1 through June 5 and September 27 through December 31) for the 2011 recreational measures. This alternative would be expected to result in the same landings as projected for 2010 if similar measures are implemented in state waters, and would not reduce overall recreational landings to a level that is less than the 2011 recreational harvest limit implemented by NMFS. However, if the TAC is increased as recommended by the Council on December 15, 2010, to provide a recreational harvest limit 5.74 million lb (2.60 million kg) for 2011, then these measure would be consistent with the the increased harvest limit and would be expected to result in landings that are the same as the 2011 harvest limit.

5.2.2 Alternative 2 (Non-preferred: Coastwide Measure)

This non-preferred alternative for scup includes a 10.5-inch TL minimum fish size, 15-fish per person possession limit, and open seasons of January 1 through February 28 and October 1 through October 31 (i.e., closed seasons of March 1 through September 30 and November 1 through December 31) for the 2011 recreational fishery. This alternative contains the same measures that were in place in 2009 and could reduce recreational landings by more than the 25% necessary to achieve the 2011 recreational harvest limit implemented by NMFS; if similar measures are implemented in state waters (i.e., possession limits, size limits, and fishing seasons; Tables 3 and 4a-b).

5.2.3 Alternative 3 (Non-preferred: Coastwide Measure)

This non-preferred alternative would include a coastwide 11.0-inch TL minimum fish size, 10-fish per person possession limit, and open season of May 24 through September 26 (i.e., closed seasons of January 1 through May 23 and September 27 through December 31) for the 2011 recreational fishery. It is estimated that this alternative could reduce recreational landings by the 25% necessary to achieve the 2011 recreational harvest limit implemented by NMFS; if similar measures are implemented in state waters (i.e., possession limits, size limits, and fishing seasons; Tables 3 and 4a-b).

5.3 Black Sea Bass

At the December Council Meeting, the Council recommended the measures contained under alternative 1 for 2011. However, the Council also indicated through that same action that they would adopt the measures contained under alternative 2 if the Commission developed measures for state waters which would achieve the required reduction for 2011. Therefore, if it is demonstrated that the measures contained within the Commission’s Addendum XXI for states waters achieve the required reduction when paired with the measures under alternative 2 for federal waters, then the Council would adopt alternative 2.

5.3.1 Alternative 1 (Preferred: Coastwide Measure)

The black sea bass landings in 2010 based on waves 1-5 are projected to be 3.11 million lb (1.41 million kg) and are above the 2010 recreational harvest limit of 1.83 million lb (0.83 million kg). Based on the projected landings estimate for 2010, landings would have to be reduced by 41% to achieve the recreational harvest limit for 2010 of 1.84 million lb (0.83 million kg). Changes in the possession limits, size limits, and fishing seasons have been considered to achieve the harvest limit. The Council and Commission voted to recommend a 13.0-inch TL minimum fish size, a 25-fish per person possession limit, and open season of July 1 through October 1 and November 1 through December 31 (i.e., closed seasons from January 1 through June 30 and October 2 through October 31) for the 2011 black sea bass recreational measures. This alternative is projected to reduce recreational landings by 41% if similar measures are implemented in state waters (Tables 5a-b and 6). See discussion above under section 5.3.

5.3.2 Alternative 2 (Non-preferred: Status Quo Coastwide Measure/No Action)

This non-preferred alternative for black sea bass would include a coastwide 12.5-inch TL minimum fish size, 25-fish per person possession limit, and open season of May 22 through October 11 and November 1 through December 31 (i.e., closed seasons of January 1 through May 21 and October 12 through October 31) for the 2011 recreational fishery. This alternative would be expected to result in the same landings as projected for 2010 if similar measures are implemented in state waters, and would not reduce overall recreational landings to a level that is less than the 2011 recreational harvest limit implemented by NMFS. See discussion above under section 5.3.

5.3.3 Alternative 3 (Non-preferred: Coastwide Measure)

This non-preferred alternative for black sea bass would include a coastwide 12.5-inch TL minimum fish size, a 25-fish per person possession limit, and open seasons of January 1 through December 31 (i.e., no closed season) for the 2011 recreational fishery. This alternative is projected to result in increased recreational landings in 2011 when compared to 2010 projected landings, if similar measures are implemented in state waters (Tables 5a-b and 6).

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource

6.1.1 Description of the Fisheries (Including Review of Past Management Measures)

The recreational fisheries for the three managed resources are fully described in section 3.3.2, of Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP and are outlined by principal port in section 3.4.2 of that document.

6.1.1.1 Summer Flounder

Recreational catch and landings of summer flounder have fluctuated since 1981. Recreational catches peaked in 1983 at 32.06 million fish and then decreased to 2.68 million fish in 1989, the lowest value in the time series (1981-present; Figure 1). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2010, summer flounder recreational landings for 2010 are projected to be 4.98 million lb (2.25 million kg).

Recreational harvest limits and management measures have varied since the FMP was first implemented from a high of 11.98 million lb (5.43 million kg) in 2005 to a low of 6.22 million lb (2.82 million kg) in 2008 (Table 7). In 2010, the recreational harvest limit for summer flounder was 8.59 million lb (3.90 million kg). Over the time period from 1993 to 2001, coastwide possession limits ranged from 3 to 10 fish with size limits ranging from 14.0 to 15.5-inch TL. In 2002, conservation equivalency was implemented and has been used as the preferred management system since then. In 2008, the state-specific possession limits ranged from 1 to 8 fish with size limits ranging from 14 to 20.5-inch TL, with assorted seasons (Table 8). In 2009, the state-specific possession limits ranged from 1 to 8 fish with size limits ranging from 14.0 to 21.0-inch TL, with assorted seasons (Table 9). In 2010, the state-specific possession limits ranged from 2-8 fish with size limits ranging from 14.0 to 21.0 inch TL, with assorted seasons (Table 10). The non-preferred and precautionary default measures that were adopted in 2010 (as required for implementation of conservation equivalency) included 2 fish with a minimum size of 19.5 inch TL and an open season from May 1 to September 30, and 2 fish with a 21.5 inch TL minimum fish size and an open season from May 1 to September 30, respectively. Based on projected landings for 2010, no states will exceed their Commission-based state-specific 2010 targets (Table 11).

6.1.1.2 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 time series (1981-present; Figure 2). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2009, scup recreational landings for 2010 are projected to be 5.74 million lb (2.60 million kg).

Recreational harvest limits and management measures have varied since the FMP was first implemented (Table 12). Beginning in 1997, recreational harvest limits were established to achieve the target exploitation rates. Since 1997, the recreational harvest limit has varied from a low of 1.24 million lb (0.56 million kg) annually in 1999 and 2000 to a high of 4.01 million lb (1.82 million kg) in 2003. In 2010, the recreational harvest limit for scup was 3.01 million lb (1.37 million kg). From 2003 through 2007, the coastwide possession limit was 50-fish and the minimum fish size was 10-inch TL, with varied seasons. In 2010, the Council adopted Federal management measures that included a 10-fish possession limit, a 10.5-inch TL size limit, and an open season from June 6 through September 26. Since 2006, the Commission has adopted a regional approach for regulations in state waters, which results in relatively consistent regulations for the states from Massachusetts to New York (Tables 13-15).

6.1.1.3 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 (1981-present; Figure 3). Based on 2010 MRFSS data for waves 1-5 (January through October) and the proportions of landings by wave in 2009, black sea bass recreational landings for 2010 are projected to be 3.11 million lb (1.41 million kg).

The Council and the Commission have recommended various harvest limits and other management measures since the FMP was first implemented. Harvest limits have ranged from a low of 3.15 million lb (1.43 million kg) from 1998 through 2001 to a high of 4.13 million lb (1.87 million kg) in 2005, and the limit was 1.83 million lb (0.83 million kg) in 2010 (Table 16). All states, with the exception of Massachusetts which opted for a more restrictive possession limit of 20 fish, adopted measures for minimum fish size, possession limits, and open season(s) identical to the federal regulations at the state of the fishing year for 2008 to 2010 (Tables 17-19). However, there was an inseason emergency closure in federal waters for recreational black sea bass from October 6, 2009 through May 21, 2010. The states of North Carolina and Virginia also closed their black sea bass recreational fisheries during that emeragency closure period.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on "Stock Status," including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, and Stock Assessment Review Committee (SARC) panelist reports, are available online at the NEFSC website: http://www.nefsc.noaa.gov.

EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website:
http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Summer Flounder

The most recent peer-reviewed assessment of summer flounder was June 2008 during SAW 47 (NEFSC 2008). The model used to assess the stock changed from the ADAPT VPA model to a statistical catch at age model, called Age Structured Assessment Program (ASAP). An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009

(Box 6.1.2.1). The fishing mortality rate has declined to below 1.0 since 1997 and was estimated to be 0.237 in 2009, below the threshold fishing mortality reference point = F35% (as FMSY proxy) = 0.310. There is a 50% probability that the fishing mortality rate in 2009 was between 0.224 and 0.250. Spawning stock biomass (SSB) decreased from about 55.1 million lb (25.0 million kg) in the early 1980s to about 15.4 million lb (7.0 million kg) in 1989, then increased to above 88.2 million lb (40.0 million kg) by 2002. SSB was estimated to be 117.9 million lb (53.5 million kg) in 2009, about 89% of the SSB35% (as SSB_{MSY} target proxy reference point) = 132.4 million lb (60.1 million kg). There is a 50% chance that SSB in 2009 was between 111.5 million lb (50.6 million kg) and 123.5 million lb (56.0 million kg). The arithmetic average recruitment from 1982 to 2009 is 42 million fish at age 0. The 1981 and 1982 year classes are the largest in the historical assessment time series, at 73 and 81 million fish; the 1988 year class is the smallest at 13 million fish. The 2008 year class is currently estimated to be about 49 million fish, 17 percent above the average. The 2009 year class is currently estimated to be about 82 million fish, about twice the average, and the largest in the assessment time series.

A full description of stock characteristics and ecological relationships of summer flounder is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics" (Packer et al. 1999).

Box 6.1.2.1 Summer Flounder Stock Status Information[a], 2000-2009.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.31)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=66.2 million lb)	Year Class Estimate (millions of fish)
2000	0.67	Yes	69.0	No	40
2001	0.49	Yes	81.8	No	38
2002	0.43	Yes	92.8	No	44
2003	0.41	Yes	101.2	No	34
2004	0.44	Yes	103.2	No	55
2005	0.45	Yes	100.5	No	29
2006	0.34	Yes	102.7	No	30
2007	0.26	No	100.3	No	30
2008	0.24	No	99.2	No	49
2009	0.24	No	117.9	No	82

[a] Based on SAW 47 (NEFSC 2008) and the June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.2 Scup

The most recent assessment for scup was peer-reviewed and accepted in December 2008 by the DPSWG Peer Review Panel (NEFSC 2009). The model used to assess the stock changed from index-based methods to a statistical catch at age model, called ASAP. An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009 (Box 6.1.2.2). Fishing mortality varied between F = 0.1 and F = 0.3 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at about F = 1.1 in the mid-1990s. Fishing mortality decreased after 1994, falling to less than F = 0.1 since 2004, with F in 2009 = 0.043. There is a 50% chance that F in 2009 was between 0.033 and 0.058. Spawning stock biomass (SSB) decreased from about 220 million lb (100 million kg) in 1963 to about 110 million lb (50 million kg) in 1969, then increased to about 165 million lb (75 million kg) during the mid-1970s. SSB declined through the 1980s and early 1990s to less than 11 million lb (5 million kg) in the mid-1990s. With greatly improved recruitment and low fishing mortality rates since 1998, SSB has increased to about 346 million lb (157 million kg) in 2008 and 342 million lb (155 million kg) in 2009. There is a 50% chance that SSB in 2009 was between 331 million lb (150 million kg) and 357 million lb (162 million kg). Recruitment at age 0 averaged 92 million fish during 1963-1983, the period in which recruitment estimates are influenced mainly by the assessment model stock-recruitment relationship. Since 1984, recruitment estimates from the model are influenced mainly by the fishery and survey catches at age, and recruitment at age 0 averaged 104 million fish during 1984-2009. The 1999 and 2000 year classes are estimated to be the largest of the time series, at 207 and 184 million age 0 fish. Recruitment has exceeded the 1984-2009 average of 104 million in 2001 and 2004-2009.

The stock characteristics and ecological relationships of scup are fully described in section 3.1.2 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999a).

Box 6.1.2.2 Scup Stock Status Information[a], 2000-2009.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.18)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=101.5 million lb)	Year Class Estimate (millions of fish)
2000	0.18	No	46.3	Yes	184
2001	0.10	No	94.8	Yes	149
2002	0.10	No	147.7	No	88
2003	0.10	No	194.0	No	88
2004	0.07	No	216.1	No	138
2005	0.05	No	242.5	No	144
2006	0.06	No	262.4	No	163
2007	0.06	No	291.0	No	141
2008	0.05	No	346.1	No	164
2009	0.04	No	341.7	No	140

[a]Based on DPSWG assessment (NEFSC 2009) and June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.3 Black Sea Bass

The most recent assessment independently peer-reviewed assessment for black sea bass was accepted in December 2008 by the DPSWG Peer Review Panel (NEFSC 2009). The model used to assess the stock changed from index-based methods to a length-structured assessment model, called Statistical Catch at Length (SCALE). An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009 (Box 6.1.2.1). Fishing mortality varied between F = 0.20 and F = 0.74 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at F = 1.26 in 1986. Fishing mortality remained high until after 2001 (F = 1.17), falling steadily to F = 0.29 in 2009, less than the threshold F = 0.42. SSB decreased from about 26.8 million lb (12.16 million kg) in 1975 to about 18.2 million lb (8.28 million kg) in 1979, then increased to about 25.6 million lb (11.60 million kg) during the mid-1980s. SSB declined through the 1980s and early 1990s to only 14.7 million lb (6.66 million kg) in 1996. With improved recruitment and low fishing mortality rates since 2001, SSB has steadily increased to about 28.6 million lb (12.98 million kg) in 2009. Recruitment averaged 26.4 million fish during 1968-1999 but increased to 56 million in 2000 followed by recruitment of 40 million fish in 2002. Although 2004 recruitment was the lowest in the time series, recent years have been near average. The black sea bass model average retrospective pattern suggests that F is under-estimated and recruitment and total biomass are over-estimated in the terminal year.

A full description of stock characteristics and ecological relationships is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the documents titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999b) and an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics (Second Edition)" (Drohan et al. 2007).

Box 6.1.2.3 Black Sea Bass Stock Status Information[a], 2000-2009.					
Year	**Updated F Estimate**	**Overfishing? ($F_{threshold}$=0.42)**	**Spawning Stock Biomass (million lb)**	**Overfished? ($SSB_{threshold}$=13.8 million lb)**	**Year Class Estimate (millions of fish)**
2000	0.97	Yes	18.0	No	56
2001	1.17	Yes	21.8	No	26
2002	1.03	Yes	27.7	No	40
2003	0.84	Yes	27.8	No	26
2004	0.66	Yes	27.6	No	20
2005	0.45	Yes	26.9	No	24
2006	0.44	Yes	26.5	No	23
2007	0.43	Yes	26.0	No	28
2008	0.35	No	26.7	No	26
2009	0.29	No	28.6	No	27

[a]Based on DPSWG assessment (NEFSC 2009) and June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.3 Non-target Species

There are significant recreational fisheries for summer flounder, scup, and black sea bass. The recreational fishery may catch and/or land numerous other species within the management units of the managed resources. These species could include, but are not limited to, striped bass, bluefish, weakfish, tautog, Atlantic croaker, spot, spiny dogfish, skates species, and other flounder species and pelagics.

6.2 Habitat (Including Essential Fish Habitat)

A description of the habitat associated with the summer flounder, scup, and black sea bass fisheries is presented in section 3.2 of Amendment 13 to the FMP (MAFMC 2002), and a brief summary of that information is given here. The impact of fishing on summer flounder, scup, and black sea bass on habitat (and EFH) and the impact of the summer flounder, scup, and black sea bass fisheries on other species' habitat and EFH can be found in Amendment 13 to the FMP (section 3.2; MAFMC 2002). Potential impacts associated with the measures proposed in this specifications document on habitat (including EFH) are discussed in section 7.0.

6.2.1 Summer Flounder

Summer flounder spawn during the fall and winter over the open ocean areas of the continental shelf. Planktonic larvae are often found in the northern part of the Middle Atlantic Bight from September to February and in the southern part from November to May. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Summer flounder exhibit strong seasonal inshore-offshore movements. Adult flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the colder months. EFH includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas, from the Gulf of Maine through North Carolina. Additional information on summer flounder habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus,* Life History and Habitat Characteristics" (Packer et al. 1999).

An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for summer flounder are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (MAFMC 2002). Summer flounder are primarily landed by bottom otter trawls. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the summer flounder fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.2.2 Scup

Scup spawn once annually, over weedy or sand-covered areas in the spring. Scup eggs and newly hatched larvae are found in open water in bays and sounds of Southern New England during the spring-summer. Juvenile and adult scup are demersal using inshore waters in the spring and moving offshore in the winter. EFH includes demersal waters, sands, mud, mussel and seagrass beds, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on scup habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999a).

An electronic version of the source documents is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for scup are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Scup are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the scup fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.2.3 Black Sea Bass

The northern population of black sea bass spawns in the Middle Atlantic Bight continental shelf during the spring through fall. Spawning begins in the spring in the southern portion of the range of this population, i.e., off North Carolina and Virginia, and progresses north into southern New England waters in the summer-fall; these pelagic eggs are closely associated with spawning. Collections of ripe fish and egg distributions indicate that the species spawns primarily on the inner continental shelf between Chesapeake Bay and Montauk Pt., Long Island. The duration of larval stage and habitat-related settlement cues are unknown; therefore, distribution and habitat use of this pelagic stage may only partially overlap with that of the egg stage. Adult black sea bass are also very structure oriented, especially during their summer coastal residency. Unlike juveniles, they tend to enter only larger estuaries and are most abundant along the coast. Larger fish tend to be found in deeper water than smaller fish. A variety of coastal structures are known to be attractive, and these include shipwrecks, rocky and artificial reefs, mussel beds and any other object or source of shelter on the bottom. In the warmer months, inshore, resident adult black sea bass are usually found associated with structured habitats. EFH for black sea bass is pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, sand and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on black sea bass habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics"(Steimle et al. 1999b) and an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Drohan et al. 2007).

An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for black sea bass are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Black sea bass are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the black sea bass fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.3 Endangered and Protected Species

There are numerous species inhabiting the environment, within the management unit of the three species managed through this FMP, that are afforded protection under the Endangered Species Act (ESA) of 1973 (i.e., for those designated as threatened or endangered), the Marine Mammal Protection Act of 1972 (MMPA). Thirteen are classified as endangered or threatened under the ESA and are listed below in Box 6.3. A more detailed description of the species listed as endangered or threatened, including ecological relationships and life history information, is presented in Appendix C. The potential impacts to protected species associated with the proposed measures under this specifications document are discussed in section 7.0.

The status of these and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock et al. (1995) and are updated in Waring et al. (2009). The most recent information on the stock assessment of various marine mammals through 2009 can be found at: http://www.nmfs.noaa.gov/pr/sars/.

The principle gears used in the recreational fishery for summer flounder, scup, and black sea bass are rod and reel and handlines. Recreational fisheries, in general, have very limited interaction with marine mammals and endangered or threatened species. Potential impacts to protected species associated with the proposed measures under this specifications package are discussed in section 7.0.

Box 6.3. Species listed as either threatened or endangered under the ESA that are found in the environment utilized by the summer flounder, scup, and black sea bass fisheries.			
Species	**Common name**	**Scientific Name**	**Status**
Cetaceans	Northern right	*Eubalaena glacialis*	Endangered
	Humpback	*Megaptera novaeangliae*	Endangered
	Fin	*Balaenoptera physalus*	Endangered
	Blue	*Balaenoptera musculus*	Endangered
	Sei	*Balaenoptera borealis*	Endangered
	Sperm	*Physeter macrocephalus*	Endangered
Sea Turtles	Leatherback	*Dermochelys coriacea*	Endangered
	Kemp's ridley	*Lepidochelys kempii*	Endangered
	Green	*Chelonia mydas*	Endangered
	Hawksbill	*Eretmochelys imbricata*	Endangered
	Loggerhead	*Caretta caretta*	Threatened
Fishes	Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
	Atlantic salmon	*Salmo salar*	Endangered

6.4 Fishery and Socioeconomic Environment

6.4.1 Economic and Social Environment

6.4.1.1 Summer Flounder

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. For 2002 through 2010, the number of recreational fishing trips reported by anglers targeting summer flounder ranges from 4.6 to 5.9 million trips. 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. Additional economic analysis regarding this fishery is presented in section 7.0 of the EA and in the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (RIR/IRFA) section. Information regarding fishing trends is presented in section 4.3 of the RIR/IRFA.

6.4.1.2 Scup

Scup has increased in importance to the recreational fishery since 1997, likely in concurrence with increasing stock size. Estimation of primary species sought as reported by anglers in recent intercept surveys from Maine through North Carolina indicates that scup trips increased from a low of 0.20 million trips in 1997 to a high of 0.98 million trips in 2003. For 2002 through 2010, the number of recreational fishing trips reported by anglers targeting scup ranges from 0.48 to 0.66 million trips. A detailed description of the economic aspects of the commercial and recreational fisheries for scup was presented in section 3.3.2 of Amendment 13. Additional economic analysis regarding this fishery is presented in section 7.0 of the EA and in the RIR/IRFA section. Information regarding fishing trends is presented in section 4.3 of the RIR/IRFA.

6.4.1.3 Black Sea Bass

Black sea bass remains 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 black sea bass trips increased from a low of 0.14 million trips in 1999 to a high of 0.38 million trips in 2007. In 2010, the number of recreational fishing trips reported by anglers targeting black sea bass was 0.34 million trips. A detailed description of the economic aspects of the commercial and recreational fisheries for black sea bass is presented in section 3.3.3 of Amendment 13. Additional economic analysis regarding this fishery is presented in section 7.0 of the EA and in the RIR/IRFA section. Information regarding fishing trends is presented in section 4.3 of the RIR/IRFA.

6.5 Human Communities

6.5.1 Port and Community Description

The recreational summer flounder, scup, and black sea bass fisheries are important to many communities along the East Coast. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.5 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications. 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 at the port-level for party/charter boat landings. However, MRFSS data indicate that party/charter landings represented 14%, 16%, and 62%, 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 1981-2009 (Tables 20-22). 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, as stated in section 6.4 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications, for party/charter vessels, the largest number of permit holders for these species are located in Massachusetts, followed by New Jersey and New York.

According to MRFSS estimates, the top five states from Maine through North Carolina in 2009 that landed summer flounder were New Jersey, New York, Virginia, Delaware, and Maryland (Table 23). The other five states accounted for less than 12% of the total summer flounder landings. VTR data indicate that summer flounder accounted for 25%, 24%, 16%, and 14% of the total catch by party/charter vessels in the states of Rhode Island, New York, New Jersey, and Delaware respectively, in 2009 (Table 24).

The top five states that landed scup in 2009 were New York, Massachusetts, New Jersey, Connecticut, and Rhode Island (Table 23). These states accounted for nearly 100% of the total recreational scup landings in 2009. VTR data indicate that scup accounted 46%, 39%, 14%, and 4% of the total catch by party/charter vessels in the states of Connecticut, Massachusetts, New York, and Rhode Island respectively, in 2009 (Table 25).

The top five states that landed black sea bass in 2009 were New Jersey, New York, Massachusetts, North Carolina, and Virginia (Table 23). New Jersey alone accounted for 36% of the landings. VTR data indicate that black sea bass accounted for 83%, 41%, 39%, and 28% of the total catch by party/charter vessels in the states of Maryland, New Jersey, Delaware, and New York respectively, in 2009 (Table 26).

6.5.2 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 are presented in section 6.5.2 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications. Data from the Northeast permit application database indicates that 980 vessels held some combination of recreational summer flounder, scup, and black sea bass permits in 2009. However, VTR data indicate that less than half (349) of these vessels reported landings of summer flounder, scup, and/or black sea bass in 2009.

6.6 Marine Recreational Descriptive Statistics

In 2005 the marine fishing population in the Northeast U.S. was estimated to be predominantly male (77.2%), of non-Hispanic origin (95.1%) and consisted of mainly White anglers (90.7%; Table 27) according to Steinback et al. (2009). The median annual household income was found to be \$50,000 – \$74,999, median education category was one or more years of college, no degree (i.e., some college) and the median age category was 45 – 54. These characteristics closely approximated those found in other studies of recreational anglers (see Roe 2003 and U.S. EPA 2004).

In contrast to the marine recreational fishing population, Steinback et al. (2009) estimated the non-fishing population to be mostly female (61.3%). Non-Hispanic, White, individuals dominated the non-fishing population, similar to the fishing population, but the percentage of non-Hispanics (89.3%) and Whites (78.2%) in the non-fishing population were lower than in the fishing population. The non-fishing population was comprised of a greater percentage of Hispanic, Black and Asian individuals. The median annual household income, education and age distribution of the non-fishing population was the same as for the fishing population. However, overall, the non-fishing population had lower household incomes and earned fewer advanced degrees than the fishing population.

To evaluate the importance of self-caught marine resources in the Northeast U.S., Steinback et al. (2009) asked a series of questions concerning fishing trip purpose and the use of self-caught marine resources. When asked about the purpose of fishing trips taken during the last two months, a majority of anglers (72.2%) stated that trips were taken solely for recreational purposes (Table 28). Another 13.2% of anglers stated that the purpose of their trips was mostly for recreation, and 11.7% of anglers stated that their trips were for both recreation and food or income. Less than 3% said their fishing trips were taken all or mostly for food or income purposes. The authors used the information on fishing trip purpose to create two angler categories. The first category consisted of anglers who stated that their fishing trips were taken solely for recreation (72.2%); the second category consisted of anglers who stated their fishing trips were taken for reasons other than pure recreation (27.8%). When these percentages were projected to the entire coastal resident population of anglers in 2005 (4.4 million participants) about 3.18 million anglers were estimated to fish solely for recreation and 1.22 million were estimated to fish for reasons other than pure recreation on at least some fishing trips (i.e., fish for food and/or income).

6.7 Vessel Trip Report (VTR) Data

Vessel Trip Reports (logbook data) have been collected by NMFS since 1994 for the recreational and commercial fisheries. In the recreational fishery, these data are collected from federally permitted party/charter vessels as required by the species FMPs or amendments. VTR data for 1994 and 1995 had some auditing and reporting problems; therefore, the VTR data for 1996 to 2009 were used in the following analyses. While vessel trip reports are an incomplete representation of the summer flounder, scup, and black sea bass fisheries, they can provide information on trends within the fishery assuming the submitted reports are representative and the information is accurate. In addition, there are some underlying problems with the VTR reporting process ranging from unclear writing on the reports to submission of erroneous self-reported information. As such, inter-annual trends in total numbers of trips, catch, and landings based on VTR for all three species are likely to be strongly influenced by these issues and should be interpreted with caution. VTR data for the party/charter sector from 1996-2009 were used to describe the catch, landings, and participation in this fishing sector. It should be noted that changes in availability/abundance and regulations may have an underlying effect on the observed trends.

The number of summer flounder trips, catch, and vessels reporting based on general trends in the VTR data for party and charter vessels has changed over time (Table 29). The number of party boats that reported catches of summer flounder and black sea bass have decreased in general over time in recent years, while the number of charter vessels reporting catches appears to have increased for all three species, with the exception of a small decline in 2009 (Table 29). Charter boats that caught summer flounder, scup, and black sea bass have increased over time. The mean number of anglers for charter boats appears to have declined over the time series for all three species (Table 29).

7.0 ENVIRONMENTAL CONSEQUENCES AND REGULATORY ECONOMIC EVALUATION OF ALTERNATIVES

This EA analyzes the impacts of the recreational management measures considered for the year 2011 specifications for summer flounder, scup, and black sea bass, relative to the status quo measures for each species. The analyses of the TACs/TALs (commercial quotas and recreational harvest limits), which are necessary to prevent catch and landings limits from being exceeded, and other commercial management measures were conducted under the 2011 Summer Flounder Scup, and Black Sea Bass Specifications document. The Council and Commission met in December 2010 to adopt specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) for 2011. 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. The impact of each alternative is analyzed below.

The nature of the management programs for the summer flounder, scup, and black sea bass fisheries was examined in detail in the EISs prepared for each of the fisheries as described in section 4.0 of this EA. The FMP regulates the black sea bass and scup fisheries from Maine to Cape Hatteras, North Carolina, while the summer flounder fishery is regulated from Maine to the southern border of North Carolina. The fisheries are prosecuted by vessels throughout the range, although the geographic focus of the fishery varies somewhat from year to year.

7.1 Summer Flounder Alternatives

7.1.1 Alternative 1 (Preferred: Status Quo Conservation Equivalency)

The preferred alternative for summer flounder is the status quo alternative and would require states to use conservation equivalency to develop state-specific or regional management measures in 2011. A full description of this alternative is presented in section 5.0 of the EA.

7.1.1.1 Biological Impacts

Projected landings for 2010 (based on waves 1-5) are 4.98 million lb (2.25 million kg), which is less than the 2010 recreational harvest limit of 8.59 million lb (3.90 million kg). A comparison of the projected 2010 landings with the 2010 state-specific targets indicates that no states are expected to exceed their Commission-based targets in 2010 (Table 11). State-specific reductions associated with the 2011 coastwide recreational harvest limit of 11.58 million lb (5.25 million kg) are based on the number of fish landed in 1998, and the number of fish projected to have been landed in 2010 (Table 1). Assuming the same level of fishing effort in 2011, a coastwide reduction in landings (lb) would not be required for summer flounder to achieve the 2011 recreational harvest limit.

Under the Commission-based conservation equivalency requirements no state would be required to reduce landings (in number of fish; Table 1).

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. It is expected that state-specific management measures for summer flounder will constrain summer flounder landings to the recreational harvest limit in 2011. This alternative would therefore have neutral to positive biological impacts on the managed resource through the application of management measures which achieve but do not exceed the harvest limit for 2011 that is consistent with the rebuilding fishing mortality rates for summer flounder, as prescribed under the current stock rebuilding plan. Impacts would be similar to those analyzed for the no action alternative (alternative 2). Changes in the overall interaction of this fishery with non-target species (described in section 6.1.3) as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously.

The precautionary default measures are a 20.0-inch TL minimum fish size, a 2-fish per person possession limit, and an open season from May 1 through September 30 (i.e., closed seasons during January 1 through April 30 and October 1 through December 31 for 2011). Specific states, or states within a conservation equivalency region, that fail to implement conservation equivalent measures as specified in Frameworks 2 and 6 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 could constrain coastwide landings to the 2011 harvest; these measures are more restrictive than the non-preferred coastwide measures proposed under alternative 2 and therefore constrain landings to the coastwide 2011 recreational harvest limit in numbers of fish (see section 5.1). The state-specific effect on landings associated with the precautionary default measures are expected to be more constraining than the state measures to be implemented via conservation equivalency. As such, it is expected that states will avoid the impacts of precautionary approach measures by establishing conservation equivalency management measures.

7.1.1.2 Habitat Impacts

The environment in which these fisheries are prosecuted was described in Amendment 13, section 3.2.4. The fishery management unit for summer flounder 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. A brief description of the physical environment is presented in section 6.2 of the EA.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. The principal gears used in the recreational fishery for summer flounder are rod and reel and handline. The potential adverse impacts of these gears on EFH for any of the federally-managed species in the region are minimal (see section 6.2). Therefore, this alternative would have no additional EFH impacts beyond those analyzed for the no action alternative (alternative 2).

7.1.1.3 Impacts on Endangered and Other Protected Species

Numerous species of marine mammals and threatened or endangered species occur in the Northwest Atlantic Ocean. These species are described in detail in Appendix A. 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. Recreational fisheries, in general, have very limited interactions with marine mammals and endangered or threatened species. However, recreational fishermen do contribute to difficulties for endangered and threatened marine species 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). As previously stated, recreational fishermen are 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 this alternative will have a significant impact on marine mammals and threatened or endangered species when compared to 2010.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. Changes in overall fishing effort as a result of changes in recreational harvest limits, possession and size limits, and seasons are difficult to predict. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative 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 this alternative are expected to be negligible when compared to 2010.

7.1.1.4 Socioeconomic Impacts

Conservation equivalency 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 minimizes to the extent practicable potential adverse economic effects in specific states. Table 30 details the proportion of summer flounder harvested in state and Federal waters. On average (2000-2009), approximately 90% of the harvested summer flounder (by number) came from state waters. The Board will either approve or disapprove each state's measures in February 2011 (Table 2). No quantitative 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 anglers might be to regulations implemented through conservation equivalency. It is likely that proposed management measures by states could lessen restrictions on the recreational fishery for 2011 (i.e., via a more liberal possession limit, larger minimum fish size, or longer open season). However, due to lack of data, these effects cannot be quantified. There are 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. Information to assess the impacts on businesses dependent on these anglers (e.g. bait shops, hotels, restaurants, etc.) is also limited.

For party/charter vessels, the largest number of permit holders for these species is located in Massachusetts, followed by New Jersey and New York (section 6.4.4 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications). Projected data from MRFSS indicate that anglers fished 30.7 million days in 2010 in the Northeast Region (Maine through North Carolina). Party/charter anglers comprised about 4.7% (1.43 million) of the angler fishing days in 2010, 52.4% (16.1 million) for the private/rental mode, and 42.9% (13.2 million) for shore mode (Table 31).

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 6.5 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 2011 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.

Harvesting measures adopted under conservation equivalency in 2011 are not expected to be more restrictive for states when compared to the 2010 measures; as such there is not likely to be a decline in the demand for summer flounder fishing trips in those states. However, it is not likely that the new measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. It is expected that most anglers that fished for summer flounder during 2010 will continue to do so in 2011 under the new limits, and anglers may have more opportunity under less restrictive measures. The proposed regulations will likely result in changes to the number and size of the fish that can be landed, but they will not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers also have the opportunity to transfer effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) or for effort to be transferred from other species to summer flounder. Recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. Therefore, it is possible that effort from other species may be transferred to summer flounder, based on increased opportunity under less restrictive summer flounder measures.

The Council and Board also must recommend precautionary default measures for Federal permit holders landing summer flounder in states that do not submit approved conservation equivalency measures. The precautionary default measures consist of a 20.0-inch TL minimum fish size, a 2-fish possession limit, and closed seasons during January 1 through April 30 and October 1 through December 31. It is expected that states will avoid the impacts of the precautionary default measures by establishing conservation equivalency measures. Because states have a choice, it is more rational for the states to adopt the conservation equivalency measures that result in fewer adverse economic impacts than to adopt the much more restrictive precautionary default measures.

Impacted trips were defined as trips taken in 2010 that landed at least one summer flounder smaller than 20.0 inches TL, or landed more than 2 summer flounder, or landed summer flounder during the closed seasons (January 1 through April 30 and October 1 through December 31). The analysis concluded that the measure could affect 0.86% of the party/charter boat trips, 0.87% of the private/rental boat trips, and 0.05% of the shore trips (Table 32). It is possible that the potential effects on angler effort associated with the precautionary default measures would be greater than those associated with conservation equivalency or the coastwide measures. The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.1.2 Alternative 2 (Non-preferred: Coastwide Measure/No Action)

The summer flounder non-preferred alternative (coastwide management measures) adopted by the Council and Commission was a 18.5-inch TL minimum fish size, a 2-fish per person possession limit, and open season from May 1 through September 30 for the 2011 recreational fishery. A full description of this alternative is presented in section 5.0 of the EA.

7.1.2.1 Biological Impacts

Projected landings for 2010 (based on waves 1-5) are 4.98 million lb (2.25 million kg), which is less than the 2010 recreational harvest limit of 8.59 million lb (3.90 million kg). Angler catches and landings in 2010 may be explained by regulatory effects. Analysis of coastwide intercept data indicates that 90% of the trips landed 2 or fewer fish in 2010 based on data through wave 4 (Table 33). This compares to 90% of the trips landing 4 or fewer fish in 1992, the year before the fishery was regulated with possession limits (Table 34). Landings were constrained by the various minimum size limits that were in effect in 2010 based on an analysis of length frequencies (Table 35). However, there were significant numbers of fish measured less than the size limit in some states (i.e., indicates less than 100% compliance).

Analysis of wave data suggests that some landings may have been affected by seasonal restrictions in 2010 (Table 36). Obviously, greater effects would be associated with seasonal closures in waves with a greater proportion of landings.

Assuming the same level of fishing effort in 2010, a coastwide reduction in landings (lb) would not be required for summer flounder. The non-preferred coastwide alternative could constrain landings to the recreational harvest limit for 2011 (see section 5.1.2); however the monitoring expressed uncertainty in the information available to analyze the coastwide option. As such, this alternative is expected to result in impacts that range from neutral to unknown slight positive or unknown slight negative biological impacts on the managed resource, with the direction of impact dependent on how effective the measures are or are not in constraining landings. In addition, changes in the overall interaction of this fishery with non-target species (described in section 6.1.3) as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously.

7.1.2.2 Habitat Impacts

For reasons stated in section 6.2 of the EA, the EFH impacts under this alternative are minimal.

7.1.2.3 Impacts on Endangered and Other Protected Species

The protected resources impacts under this alternative are minimal and similar to those described in section 7.1.1.3 of the EA.

7.1.2.4 Socioeconomic Impacts

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 7.1.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one summer flounder smaller than 18.5 inches TL, or landed more than 2 summer flounder, or landed summer flounder during the closed seasons (January 1 through April 30 and October 1 through December 31). The analysis concluded that the measure could affect 0.79% of the party/charter boat trips, 0.80% of the private/rental boat trips, and 0.04% of the shore trips (Table 32).

There is very little information available to empirically estimate how sensitive the affected anglers might be to the proposed coastwide fishing regulations. Nonetheless, the coastwide measures are more restrictive than the conservation equivalency measures that were in place during 2011 so there likely would be an overall reduction in the demand for summer flounder fishing trips, particularly for certain states. Anglers that choose to reduce their summer flounder effort in 2011 in response to the new regulations are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, as indicated in section 7.1.1.4, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. Headboat businesses that rely at least partially on summer flounder anglers fishing for food would likely be faced with reduced passenger loads in response to the low bag limit proposed under the coastwide measures (2 fish). The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.2 Scup Alternatives

7.2.1 Alternative 1 (Preferred: Status Quo Coastwide Measure/No Action)

The preferred alternative for scup includes a coastwide 10.5-inch TL minimum fish size, a 10-fish per person possession limit, and open seasons of June 6 through September 26 for the 2011 recreational fishery. This alternative is also the status quo/no action alternative. A full description of this alternative is presented in section 5.0 of the EA.

7.2.1.1 Biological Impacts

The 2011 specifications for scup implemented a recreational harvest limit of 4.30 million lb (1.95 million kg), which is higher than the recreational harvest limit of 3.01 million lb (1.37 million kg) implemented in 2010. The 2010 recreational scup landings are projected to be 5.74 million lb (2.60 million kg). Assuming the same level of fishing effort in 2011, a 25% coastwide reduction in landings would be required.

Possession and size limits can be used to constrain landings to the harvest limit in 2011. Potential reductions need to be adjusted to account for levels of effectiveness. It is improbable that a regulation will be 100% effective. In fact, analyses of catch and length frequencies indicate that anglers do exceed the possession limit and land scup smaller than the size limit (Table 37). Reductions tables associated with the size/possession limit combinations can be used to guide recommendations on the appropriate limits for 2011 (Table 38). 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 increases to anglers, 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 correct management measures will allow anglers to land up to the harvest limit but not exceed the limit.

Analysis of length frequencies indicates that landings were constrained in Massachusetts, Rhode Island, Connecticut and New York by the 10.5-inch TL size limit implemented in 2010 for private anglers (11 inch-TL for party/charter; Table 37). Landing frequencies for the first four waves of 2010 indicate about 90% of the trips had 27 fish or fewer per trip with about 50% of the trips landing 2 or fewer scup (Table 39). In 2009, landings frequencies indicated 90% of the trips landed 35 or fewer scup (Table 40).

As the status quo alternative, these measures are not expected to reduce recreational landings by 25% assuming the same measures are implemented in both state and federal waters (Tables 3 and 4a-b). Because these measures would not to constrain landings to the recreational harvest limit in 2011 that is consistent catch and landings limits for this fishery, this action is expected to result in neutral to potential slight negative biological impacts in 2011 when compared to 2010, depending on the magnitude of the realized overage relative to biological reference points. The overall interaction of the scup fishery with non-target species (described in section 6.1.3) as a result is similar and is not expected to change. Because the alternative is not expected to cause changes in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.2.1.2 Habitat Impacts

The environment in which these fisheries are prosecuted was described in Amendment 13, section 3.2.4. The fishery management unit for scup is from Maine to Cape Hatteras, North Carolina. A brief description of the physical environment is presented in section 6.2 of the EA.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. The principal gears used in the recreational fishery for scup are rod and reel and handline. For reasons stated in section 6.2 of the EA, the EFH impacts associated with the use of these gears are minimal. Therefore, the impact of this alternative on EFH would be minimal.

7.2.1.3 Impacts on Endangered and Other Protected Species

Numerous species of marine mammals and threatened or endangered species occur in the Northwest Atlantic Ocean. These species are described in detail in Appendix A. 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. Recreational fisheries, in general, have very limited interactions with marine mammals and endangered or threatened species. However, recreational fishermen do contribute to difficulties for endangered and threatened marine species as discussed section 7.1.1.3 of this EA.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. Changes in overall fishing effort as a result of changes in recreational harvest limits, possession and size limits, and seasons are difficult to predict. Because the alternative is not expected to change fishing effort, it is concluded that this alternative will not affect endangered and threatened species in any manner not considered in prior consultations. Therefore, any potential negative impacts on protected species associated with the alternative are expected to be negligible.

7.2.1.4 Socioeconomic Impacts

Impacted trips were defined as trips taken in 2010 that landed at least one scup smaller than 10.5 inches TL, landed more than 10 scup, or landed 1 scup during the closed season (January 1 through June 5 and September 27 through December 31). The analysis concluded that the measure could affect 1.85% of the party/charter boat trips, 0.80% of the private/rental boat trips, and 0.08% of the shore trips (Table 32).

The measures under this alternative are the same as 2010. Therefore, it is not likely that the new measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. It is expected that most anglers that fished for scup during 2010 will continue to do so in 2011 under the new limits, and anglers may have more opportunity under less restrictive measures. The proposed regulations will likely result in changes to the number and size of the fish that can be landed, but they will not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers also have the opportunity to transfer effort to alternative species (i.e., summer flounder, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) or for effort to be transferred from other species to scup. Recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. Therefore, it is also possible that effort from other species may be transferred to scup.

This alternative evaluates the status quo management measures for scup. Even though these are the same coastwide management measures that were in place in 2010, the analysis indicates that some trips will still be impacted in 2011. This is due to the fact that not all states implemented these coastwide measures in 2010 and angler compliance was not 100%. The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.2.2 Alternative 2 (Non-preferred: Coastwide Measure)

Scup non-preferred alternative 2 includes a coastwide 10.5-inch TL minimum fish size, 15-fish per person possession limit, and open seasons of January 1 through February 28 and October 1 through October 31 for the 2011 recreational fishery. A full description of this alternative is presented in section 5.0 of the EA.

7.2.2.1 Biological Impacts

This alternative is expected to result in a substantial reduction in landings because of the constraining season when compared to the status quo. These measures are expected to constrain scup landings to the 2011 recreational harvest limit if effort in 2011 is similar to 2010. This alternative contains the same measures that were in place in 2009 and could reduce recreational landings by more than the 25% necessary to achieve the 2011 recreational harvest limit (is similar measures are implemented in state waters). Therefore, the biological impact of this alternative could potentially result in a neutral to positive impact when compared to the status quo preferred alternative (alternative 1). Because the alternative is not expected to cause increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.2.2.2 Habitat Impacts

For reasons stated in section 6.2 of the EA, the EFH impacts under this alternative are minimal.

7.2.2.3 Impacts on Endangered and Other Protected Species

The protected resources impacts under this alternative are minimal and similar to those described in section 7.2.1.3 of the EA.

7.2.2.4 Socioeconomic Impacts

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 7.1.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one scup smaller than 10.5 inches TL, or landed more than 15 scup, or landed 1 scup during the closed season (March 1 through September 30 and November 1 through December 31). The analysis concluded that the measure could affect 5.71% of the party/charter boat trips, 3.20% of the private/rental boat trips, and 0.80% of the shore trips (Table 32).

It is possible that the proposed measures could cause some decrease in recreational satisfaction for anglers restricted by the landing limits. However, it is not likely that the measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. It is expected that most anglers that fished for scup during 2010 will continue to do so in 2011 under the new limits, and anglers may have more opportunity under less restrictive measures. The proposed regulations will likely result in changes to the number and size of the fish that can be landed, but they will not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers also have the opportunity to transfer effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) or for effort to be transferred from other species to scup. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

The potential effects on angler effort associated with this alternative are estimated to be greater than those associated with coastwide measures under preferred alternative 1 and non-preferred alternative 3 because the reductions associated with the management measures under this alternative have a greater impact on angler effort compared to those under alternatives 1 and 3 (Table 32). The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.2.3 Alternative 3 (Non-preferred: Coastwide Measure)

This non-preferred alternative would include a coastwide 11.0-inch TL minimum fish size, 10-fish per person possession limit, and open season of May 24 through September 26 for the 2011 recreational fishery. A full description of this alternative is presented in section 5.0 of the EA.

7.2.3.1 Biological Impacts

It is estimated that this alternative could reduce recreational landings by 25%; if similar measures are implemented in state waters (Tables 3 and 4a-b). Therefore, this action is expected to result in neutral to positive biological impacts in 2011 relative to the no action alternative (alternative 1). This percent reduction would result a landings reduction that is approximately consistent with the NMFS implemented recreational harvest limit of 4.30 million lb (1.95 million kg) for 2011. While the measures described under this alternative could reduce recreational landings of scup, changes in the overall interaction of the scup fishery with non-target species (described in section 6.1.3) as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.2.3.2 Habitat Impacts

For reasons stated in section 6.2 of the EA, the EFH impacts under this alternative are minimal.

7.2.3.3 Impacts on Endangered and Other Protected Species

The protected resources impacts under this alternative are minimal and similar to those described in section 7.2.1.3 of the EA.

7.2.3.4 Socioeconomic Impacts

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 7.1.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one scup smaller than 11.0-inch TL, or landed more than 10 scup, or landed 1 scup during the closed season. The analysis concluded that the measure could affect 1.83% of the party/charter boat trips, 0.52% of the private/rental boat trips and 0.03% of the shore fishing trips (Table 32).

It is possible that the proposed measures could cause some decrease in recreational satisfaction due to the proposed recreational fishing restriction for scup in the EEZ. However, it is not likely that the measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. Although some of the affected anglers may reduce their overall fishing effort in response to the regulations, it is expected that most anglers that fished for scup in 2010 will continue to do so in 2011. The proposed regulations do not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers that choose to reduce their scup effort in 2011 in response to the new regulations are likely to transfer this effort to alternative species (i.e., summer flounder, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

The potential effects on angler effort associated with this alternative are estimated to be lower than those associated with alternative 2, across all modes of fishing, and similar to alternative 1, with this alternative 3 affecting a fewer number of trips when compared to the other alternatives (Table 32).

The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.3 Black Sea Bass Alternatives

7.3.1 Alternative 1 (Preferred: Coastwide Measure)

The preferred alternative for black sea bass includes a coastwide 13.0-inch TL minimum fish size, a 25-fish per person possession limit, and open season of July 1 through October 1 and November 1 through December 31 for the 2011 recreational fishery. A full description of this alternative is presented in section 5.0 of the EA.

7.3.1.1 Biological Impacts

The black sea bass landings in 2010 are projected to be 3.11 million lb (1.41 million kg), which is higher than the 2010 recreational harvest limit of 1.83 million lb (0.83 million kg). This implies that the management measures in place for 2010 (minimum fish size, possession limit, and seasons) did not constrain landings to the harvest limit for 2010. Projected landings for 2010 are higher than the 2011 recreational harvest limit of 1.84 million lb (0.83 million kg). A 41% reduction in 2010 landings is required to achieve the 2011 recreational harvest limit; therefore the Council recommended a combination of measures under this alternative that achieves the required reduction.

Possession and size limits can be used to constrain landings to the harvest limit. Reductions tables associated with the size/possession limit combinations can be used to guide recommendations on the appropriate limits for 2011 (Tables 5a-b and 6). 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, 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 are plentiful.

Landing frequencies for the first four waves of 2010 indicate that 90% of the trips landed 6 or fewer fish per trip, with 50% of the successful trips landing 1 black sea bass (Table 41). This is more successful compared to 2009 when 90% of the trips landed 5 or less black sea bass per trip (Table 42). Analysis of length frequencies indicates that landings were constrained by the 12.5-inch TL size limit in the first four waves of 2010 (Table 43). The correct size and possession limits will allow anglers to land up to the harvest limit but not exceed the limit in 2011. This preferred black sea bass alternative contains the same possession limit as 2009, but implements a more restrictive minimum fish size and season. The management measures under this alternative are expected to constrain black sea bass landings to the 2011 recreational harvest limit based on the assumption that regulations would be implemented by all states. This alternative is expected to result in neutral to positive biological impacts when compared to those measures analyzed for the no action alternative (alternative 2). While the measures described under this alternative could reduce recreational landings of black sea bass changes in the overall interaction of the black sea bass fishery with non-target species (described in section 6.1.3) as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.3.1.2 Habitat Impacts

The environment in which these fisheries are prosecuted was described in Amendment 13, section 3.2.4. The fishery management unit for black sea bass is from Maine to Cape Hatteras, North Carolina. A brief description of the physical environment is presented in section 6.2 of the EA.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. The principal gear used in the recreational fishery for black sea bass is rod and reel and handline. The potential adverse impacts of these gears on EFH for any of the federally-managed species in the region are minimal (see section 6.2), as they were in 2010.

7.3.1.3 Impacts on Endangered and Other Protected Species

Numerous species of marine mammals and threatened or endangered species occur in the Northwest Atlantic Ocean. These species are described in detail in Appendix A. 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. Recreational fisheries, in general, have very limited interactions with marine mammals and endangered or threatened species. However, recreational fishermen do contribute to difficulties for endangered and threatened marine species as discussed section 7.1.1.3 of this EA. Although the recreational fishery may impact these marine species, nothing considered under alternative 1 will have a significant impact on marine mammals and threatened or endangered species.

The measures in this alternative do not contain major changes to the types of management measures implemented in this fishery. The FMP limits recreational specifications to minimum fish size, possession limit, and fishing season. Changes in overall fishing effort as a result of changes in recreational harvest limits, possession and size limits, and seasons are difficult to predict. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative 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 this alternative are expected to be negligible.

7.3.1.4 Socioeconomic Impacts

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 7.1.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one black sea bass smaller than 13.0 inches TL, landed more than 25 black sea bass or landed at least one fish during the closed season (January 1 to June 30 and October 2 to October 31). The analysis concluded that the measure could affect 3.45% of the party/charter boat trips, 0.70% of the private/rental boat trips and 0.02% of shore fishing trips (Table 32).

It is possible that the proposed measures could cause some decrease in recreational satisfaction for anglers restricted by the landing limits. However, it is not likely that the measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. Although some of the affected anglers may reduce their overall fishing effort in response to the regulations, it is expected that most anglers that fished for black sea bass in 2010 will continue to do so in 2011. The proposed regulations do not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers that choose to reduce their black sea bass effort in 2011 are likely to transfer this effort to alternative species (i.e., summer flounder, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

7.3.2 Alternative 2 (Non-preferred: Status Quo Coastwide Measure/No Action)

Black sea bass non-preferred status quo alternative 2 includes a coastwide 12.5-inch TL minimum fish size, 25-fish per person possession limit, and open season of May 22 through October 11 and November 1 through December 31 for the 2011 recreational fishery. This alternative is also the status quo/no action alternative. A full description of this alternative is presented in section 5.0 of the EA.

7.3.2.1 Biological Impacts

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 7.3.1.1 of the EA is also relevant to this section.

The black sea bass landings in 2010 are projected to be 3.11 million lb (1.41 million kg), which is higher than the 2010 recreational harvest limit of 1.83 million lb (0.83 million kg). This implies that the management measures in place for 2010 (minimum fish size, possession limit, and seasons) did not constrain landings to the harvest limit for 2010. Projected landings for 2010 are higher than the 2011 recreational harvest limit of 1.84 million lb (0.83 million kg). A 41% reduction in 2010 landings is required to achieve the 2011 recreational harvest limit. This alternative recommends implementing the same regulations in 2011 as 2010 (i.e., status quo) and therefore is not expected to achieve the required reduction.

While fish availability and the age/size structure of the black sea bass stock may be different in 2011 than in 2010, the 2010 landings indicate these measures have the potential to result in landings in excess of the 2011 recreational harvest limit, resulting in potential negative biological impacts on the black sea bass resource. The recreational harvest limit of 1.84 million lb (0.83 million kg) is consistent with the best scientific information available at the time of specifications that indicates fishing at or below that level would be necessary to ensure the long-term sustainability of the stock. Therefore, the biological impact of this alternative could potentially result in impacts that range from neutral to negative when compared to 2010. Because this alternative is the status quo/no action and not expected to modify fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.3.2.2 Habitat Impacts

For reasons stated in section 6.2 of the EA, the EFH impacts under this alternative are minimal.

7.3.2.3 Impacts on Endangered and Other Protected Species

The protected resources impacts under this alternative are minimal and similar to those described in section 7.3.1.3 of the EA.

7.3.2.4 Socioeconomic Impacts

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 7.1.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one black sea bass smaller than 12.5 inches TL or landed more than 25 black sea bass or landed 1 black sea bass during the closed season (January 1 through May 21 and October 12 through October 30. The analysis concluded that the measure could affect 0.76% of the effort fishing aboard party/charter boats in 2011, 0.12% of private/rental boat effort and less than 0.01% of shore fishing effort (Table 32).

The measures under this alternative are the same as 2010. Therefore, it is not likely that the new measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. It is expected that most anglers that fished for black sea bass during 2010 will continue to do so in 2011 under the new limits, and anglers may have more opportunity under less restrictive measures. The proposed regulations will likely result in changes to the number and size of the fish that can be landed, but they will not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers also have the opportunity to transfer effort to alternative species (i.e., summer flounder, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change to overall fishing effort. Recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

The potential effects on angler effort associated with this alternative (status quo) are estimated to be lower than those associated with the coastwide measures under the preferred alternative 1 because the reductions associated with the management measures under this alternative have a smaller impact on angler effort compared to those under alternative 1 (Table 32). The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

This alternative evaluates the status quo management measures for black sea bass. Even though these are the same coastwide management measures that were in place in 2010, the analysis indicates that some trips will still be impacted in 2011. This is due to the fact that not all states implemented these coastwide measures in 2010 and angler compliance was not 100%. The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.5.6 of the EA.

7.3.3 Alternative 3 (Non-preferred: Coastwide Measure)

Black sea bass non-preferred alternative 3 includes a coastwide 12.5-inch TL minimum fish size, 25-fish per person possession limit, and open season of January 1 through December 31 for the 2011 recreational fishery. A full description of this alternative is presented in section 5.0 of the EA.

7.3.3.1 Biological Impacts

The black sea bass landings in 2010 are projected to be 3.11 million lb (1.41 million kg), which is higher than the 2010 recreational harvest limit of 1.83 million lb (0.83 million kg). This implies that the management measures in place for 2010 (minimum fish size, possession limit, and seasons) did not constrain landings to the harvest limit for 2010. Projected landings for 2010 are higher than the 2011 recreational harvest limit of 1.84 million lb (0.83 million kg). A 41% reduction in 2010 landings is required to achieve the

2011 recreational harvest limit. This alternative is expected to increase landings in 2011 when compared to the status quo alternative (alternative 2).

The technical information regarding the role of recreational limits, recreational landings, and the effects of possession limits and size limits discussed in section 7.3.1.1 of the EA is also relevant to this section.

This alternative would be expected to result in negative impacts when compared to those analyzed for the no action alternative (alternative 2). This alternative does not achieve the reduction required in landings to achieve the 2011 recreational harvest limit. Changes in the overall interaction of the black sea bass fishery with non-target species (described in section 6.1.3) as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. Because the alternative is not expected to cause large increases in fishing effort, it is concluded that this alternative will not affect non-target species in any manner not considered previously, and any potential negative impacts on non-target species are expected to be negligible.

7.3.3.2 Habitat Impacts

For reasons stated in section 6.2 of the EA, the EFH impacts under this alternative are minimal.

7.3.3.3 Impacts on Endangered and Other Protected Species

The protected resources impacts under this alternative are minimal and similar to those described in section 7.3.1.3 of the EA.

7.3.3.4 Socioeconomic Impacts

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 7.3.1.4 of the EA also apply here.

Impacted trips were defined as trips taken in 2010 that landed at least one black sea bass smaller than 12.5-inch TL or landed more than 25 black sea bass. The analysis concluded that the measure could affect 0.37% of the party/charter boat trips and 0.01%, of the private/rental boat trips and less than 0.01% of shore fishing trips (Table 32).

The measures under this alternative are not expected to be less restrictive when compared to the 2010 measures. Therefore, it is not likely that the new measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions. It is expected that most anglers that fished for black sea bass during 2010 will continue to do so in 2011 under the new limits, and anglers may have more opportunity under less restrictive measures. The proposed regulations will likely result in changes to the number and size of the fish that can be landed, but they will not prohibit anglers from keeping at least some of the fish they catch or from engaging in catch and release fishing. Anglers also have the opportunity to transfer effort to alternative species (i.e., summer flounderspot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) or for effort to be transferred from other species to black sea bass. Recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. Therefore, it is possible that effort from other species may be transferred to black sea bass, based on increased opportunity under less restrictive measures.

The potential effects on angler effort associated with this alternative are estimated to be smaller than those associated with coastwide measures under the preferred alternative 1 and the measures proposed under alternative 2 because the reductions associated with the management measures under this alternative have a smaller impact on angler effort compared to those alternatives (Table 32). However, the potential effects on party/charter angler effort associated with this alternative are the same as estimated for alternative 2.

The economic impacts of the proposed measures under this and other alternatives are further discussed in section 7.4.6 of the EA.

7.4 Cumulative Impacts of Preferred Alternatives

7.4.1 Introduction; Definition of Cumulative Effects

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder, scup, and black sea bass fisheries.

In section 6.0 (Description of the Affected Environment and Fisheries), the valued ecosystem components (VECs) that exist within the summer flounder, scup, and black sea bass fishery environment are identified. Therefore, the significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resources (summer flounder, scup, and black sea bass)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. Endangered and protected species
5. Human communities

The analysis of impacts focuses on actions related to the harvest of summer flounder, scup, and black sea bass. The core geographic scope for each of the VECs is focused on the Western Atlantic Ocean (section 6.0). The core geographic scope for the managed resources is from Maine through North Carolina, as this represents the typical biological range for these stocks. For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by summer flounder, scup, black sea bass and other non-target species in the Western Atlantic Ocean. The core geographic scope for endangered and protected resources can be considered the overall range of these VECs in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of the managed resources, which were found to occur in coastal states from Maine through North Carolina (section 6.5).

The temporal scope of past and present actions for the managed resources, non-target species, habitat and human communities is primarily focused on actions that have occurred after FMP implementation (1988 for summer flounder; 1996 for scup and black sea bass). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.4) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about two years (2013) into the future. This period was chosen because summer flounder is to be rebuilt by January 1, 2013 (two years of specifications). In addition, the temporal scope does not extend beyond two years because the dynamic nature of resource management for these three species and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

Past and Present Actions

The historical management practices of the Council (described in section 4.0) have resulted in positive impacts on the health of the summer flounder, scup, and black sea bass stocks. Numerous actions have been taken to manage the commercial and recreational fisheries for these three species through amendment and framework adjustment actions. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery 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 statutory basis for Federal fisheries management is the Magnuson-Stevens Fishery Conservation and Management Act[1] (MSA). To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future Federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through

[1] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

regulatory actions can often have negative short-term socio-economic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the summer flounder, scup, and black sea bass stocks.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to all of the identified VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of these species have a limited or minor exposure to these local non-fishing perturbations.

In addition to guidelines mandated by the MSA, NMFS reviews these types of effects through the review process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

In terms of Reasonably Foreseeable Future (RFF) Actions that relate to the federally-managed summer flounder, scup, and black sea bass fisheries, the following warrants additional discussion. The MSA has required provisions relating to annual catch limits (ACLs) and accountability measures (AMs) to ensure that ACLs are not exceeded. These requirements are being addressed for the FMP, and the Council has proposed action for NMFS to implement through Amendment 15 to the FMP. These actions would continue to ensure these resources are managed in accordance with the National Standards required under the MSA.

For many of the proposed non-fishing activities to be permitted under other Federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential impacts on the VECs. The MSA (50 CFR 600.930) imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any Federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under Federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular State wherein the activity is taking place.” This act provides another avenue for review of actions by other Federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS’ jurisdiction.

7.4.2 Targeted Fishery Resources

The current status of the managed resources is provided in section 6.1 of this EA. Summer flounder is currently under a rebuilding schedule; therefore, annual specifications need to be set not only to ensure overfishing does not occur on these stocks and catch limits are not exceeded (i.e., summer flounder, scup, and black sea bass) but also to ensure the statutory rebuilding deadlines are met (i.e., summer flounder). Overfishing occurs when the threshold fishing mortality rate is exceeded and the stock is overfished when stock biomass falls below the minimum biomass threshold. At present, summer flounder is considered overfished. Overfishing is not occurring on the summer flounder, scup, and black sea bass stock.

Those past, present, and reasonably foreseeable future actions, whose effects may impact the summer flounder, scup, and black sea bass stocks have been positive overall. Past and present non-fishing actions which have the potential to have indirectly negative impacts on the habitat for these three species (such as offshore disposal of dredged materials, beach nourishment, marine transportation, etc.) are typically localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the summer flounder, scup, and black sea bass is expected to be limited. Non-fishing actions such as agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resource is unquantifiable. NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS’ managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past and present fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on the managed resource (see sections 4.1 and 7.4.1). It is anticipated that the future management actions, such as the proposed specifications in this document, will result in additional positive effects on the managed resources. The recreational management measures proposed for 2011 for each species are consistent with the objectives of the FMP. The proposed action provides continuity for the overall rebuilding schemes for summer flounder, and should have indirectly positive impacts overall. Additional positive future actions relate to annual catch limits (ACLs) and accountability measures (AMs) to ensure that ACLs are not exceeded. While the actions to eventually be implemented are speculative, it is likely these actions will directly or indirectly improve the status of these three stocks. Actions taken through the FMP in the future which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which summer flounder, scup, and black sea bass productivity depends could result in additional positive impacts. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had a positive cumulative effect.

Therefore, none of the proposed actions in this document would have any significant effect on the managed resources individually, or in conjunction with other anthropogenic activities.

7.4.3 Non-Target Species or Bycatch

There are significant recreational fisheries for summer flounder, scup, and black sea bass. A large portion of the summer flounder, scup, and black sea bass that are caught are released after capture. It is estimated that 10%, 15%, and 25% of the summer flounder, scup, and black sea bass, respectively, that are caught and released by anglers die after release, i.e, the majority of the fish are released alive and are expected to survive after release. The fish that survive are not defined as bycatch under the SFA. The Council and Commission believe that information and education programs relative to proper catch and release techniques for summer flounder, scup, black sea bass, and other species caught by recreational fishermen should help to maximize the number of these species released alive.

Current recreational management measures could affect the discards of summer flounder, scup, and black sea bass. These measures include a possession limit, size limit, and season. The effects of the possession limit would be greatest at small limits and be progressively less at higher limits. The size limit would have similar effects, but the level of discarding will be dependent upon the levels of incoming recruitment and subsequent abundance of small fish. Seasonal effects would differ depending on the length of the season and the amount of summer flounder, scup, and black sea bass caught while targeting other species.

Minimum size limits, bag limits and seasons have proven to be effective management tools in controlling fishing mortality in the recreational fishery. A notable example of success using these measures for management is the Atlantic coast striped bass fishery. The recreational striped bass fishery is managed principally through the use of minimum size limits, bag limits and seasons. When these measures were first implemented, release rates in the recreational striped bass fishery exceeded 90%. However, the quick and sustained recovery of the striped bass stock after implementation of these measures provides evidence of their effectiveness in controlling fishing mortality in recreational fisheries.

The Council and Commission can currently implement annual changes in commercial and recreational management measures in response to changes in fishermen behavior or an increased level of discards through the annual specifications process. The framework adjustment procedure implemented in Amendment 12 can be used to allow the Council and Commission to respond quickly to changes in the fishery through the implementation of new management measures or the modification of existing measures.

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species have been positive overall. Past and present non-fishing actions which have the potential to have indirectly negative impacts on non-target species and their habitat (such as offshore disposal of dredged materials, beach nourishment, marine transportation, etc.) are typically localized in nearshore areas and marine project areas where they occur. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of non-target resources and the oceanic ecosystem is unquantifiable. NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally-managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on non-target species (see sections 4.1 and 7.4.1). While the final actions to be implemented relating to annual catch limits (ACLs) and accountability measures (AMs) by NMFS are speculative, these actions would be consistent with the objectives of the FMP and the National Standards. ACL/AMs were proposed by the Council through an EA that described the potential impacts for non-target species from the proposed action and therefore, provided an opportunity for NMFS to implement actions which minimize those impacts. It is therefore anticipated that the future management actions will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend.

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 constrain recreational landings to the recreational harvest limit specified through the FMP for the 2011 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. Bycatch of non-target species in the recreational fishery using rod and reel or handline is not expected to be substantial. Therefore, none of the proposed management measures would have significant cumulative effects on non-target species by themselves or in conjunction with other anthropogenic activities.

7.4.4 Habitat (Including EFH)

The environment in which these fisheries are prosecuted was described in Amendment 13, section 3.2.4. The fishery management unit for summer flounder is from Maine to the southern border of North Carolina and from Maine to Cape Hatteras, North Carolina for scup and black sea bass. A brief description of the physical environment is presented in section 6.2 of the EA.

The principal gears used in the recreational fishery for summer flounder, scup, and black sea bass are rod and reel and handline. The potential adverse impacts of these gears on EFH for any of the federally-managed species in the region are minimal (see section 6.2). The measures in this specifications document do not contain major changes to existing management measures and are not expected to result in changes in fishing effort. None of the proposed quotas or other management measures would have significant cumulative effects on habitat by themselves or in conjunction with other anthropogenic activities.

7.4.5 Protected Species

There are numerous species which inhabit the environment within the management unit of this FMP that are afforded protection under the ESA of 1973 (i.e., for those designated as threatened or endangered) and/or the MMPA of 1972. Thirteen are classified as endangered or threatened under the ESA, while the remainders are protected by provisions of the MMPA. The Council examined the list (section 6.3 of the EA) of species protected by the ESA or the MMPA that may be found in the environment utilized by the summer flounder, scup, and black sea bass fisheries.

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. As described in section 7.0 of the EA, in general, recreational fisheries have very limited interactions with marine mammals and endangered or threatened species. However, recreational fishermen do contribute to difficulties for endangered and threatened marine species 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).

Changes in overall fishing effort as a result of changes in recreational harvest limits, possession and size limits, and seasons are unknown. However, because the alternatives discussed in this document are not expected to cause large changes in fishing effort, it is concluded that they will not affect endangered and threatened species in any manner not considered in prior consultations. None of the proposed quotas or other management measures would have significant cumulative effects on protected resources by themselves or in conjunction with other anthropogenic activities.

7.4.6 Socioeconomic

National Standard 8 requires that management measures take into account the fishing communities. The ports and communities that are dependent on summer flounder, scup, and black sea bass are fully described in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (section 3.4.2). The top commercial landings ports for summer flounder, scup, and black sea bass by pounds landed and related data for the recreational fisheries are described in section 6.5 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications. However, due to the nature of the recreational database (MRFSS), desegregating the data to less than state levels will reduce the precision of those estimates. Harvest estimates are always progressively less precise at lower levels of stratification; annual estimates are more precise than bimonthly estimates, coastal estimates are more precise than regional estimates, and regional estimates are more precise than state estimates. Because of the loss in precision described above, port-level recreational data are not shown.

The ports and communities involved in these fisheries will positively benefit from the proposed management measures presented in this document. With regard to the specific recommendations proposed in this document (i.e., size limits, possession limits, and seasons), impact to the affected biological and physical and socioeconomic environment are described in section 7.0. These impacts will be felt most strongly in the social and economic dimension of the environment. Direct economic and social benefit from improved fishery efficiency is most likely to affect participants in the summer flounder, scup, and black sea bass fisheries.

Although the management measures established by the Council for summer flounder, scup, and black sea bass are implemented on a species-by-species basis to examine the overall impacts of the proposed actions, the measures must be considered simultaneously. Thus, an evaluation of the potential combinations of alternatives across species is provided in this section. This evaluation contains an assessment of the total number of projected recreational fishing trips by mode that would be affected from implementation of all combinations of proposed management measures. In addition, the potential short-run reduction in reduced angler expenditures and associated regional losses (sales, income, and employment) to businesses that supply goods and services to saltwater fishermen was explored for all potential management combinations of alternatives.

Projected data from MRFSS indicate that 30,660,109 fishing trips were taken in the Northeast Region (Maine-North Carolina) in 2010. It is estimated that the number of trips by fishing mode was 1,434,969 party/charter boat trips, 16,051,481 private/rental boat trips, and 13,173,659 shore trips (Table 31).

Affected Effort

Angling effort from year to year is difficult to predict due to numerous influential factors (multiple covariates); therefore for purposes of examining fishing impacts, it was assumed that angler effort in 2011 will be the same as that estimated for 2010. Fishing impacts were examined by estimating the number of recreational fishing trips in 2010 that would have been affected by the 2011 management measures proposed for all three species. All 2010 fishing trips that would have been constrained by the proposed 2011 measures in the Northeast Region were considered to be “affected” trips. To date, the first five waves of preliminary MRFSS effort data are available for 2010 (January - October). Wave six effort estimates for 2009 (November - December) were used as proxies for wave six 2010 effort.

Of the potential 18 combinations of alternatives across species that could be analyzed, the measures proposed under summer flounder alternative 2, scup alternative 3, and black sea bass alternative 3 (when considered together), are predicted to affect the fewest number of party/charter boat trips in the Northeast Region in 2011 (42,971; Table 44). The same combinations of alternatives are also estimated to have the lowest overall effect on private/rental boat fishing effort and shore fishing effort. Additionally, the combination of measures proposed under summer flounder alternative 2, scup alternative 3 and black sea bass alternative 2 are estimated to result in the same overall effect on shore fishing effort.

It is worth noting that since the management measures under summer flounder alternative 1 (i.e., conservation equivalency) have yet to be adopted the effort effects of this alternative could not be analyzed in conjunction with the alternatives proposed for scup and black sea bass. Since conservation equivalency allows each state to tailor specific recreational fishing measures to the needs of their state, while still achieving conservation goals, it is likely that the measures developed under summer flounder alternative 1 when considered in combination with the measures proposed for scup and black sea bass would have lower, overall adverse effects on fishing effort in 2011 than any of the combinations that could be analyzed.

The percentage of total party/charter boat trips in the Northeast Region that are estimated to be affected by the proposed actions ranges from a low of 2.99% for the combination of measures proposed under summer flounder alternative 2, scup alternative 3, and black sea bass alternative 3 to 10.02% for the measures proposed under the summer flounder precautionary default combined with scup alternative 2 and black sea bass alternative 1 (Table 44). Affected private/rental effort ranges from a low of 1.33% of total private/rental trips for the combination of measures proposed under summer flounder alternative 2, scup alternative 3 and black sea bass alternative 3 to 4.69% of total private/rental effort under the summer flounder precautionary default alternative, scup alternative 2 and black sea bass alternative 1. The number of affected shore fishing trips under the 18 different combinations of alternatives analyzed in this analysis are lowest under fluke alternative 2, scup alternative 3 and black sea bass alternative 3 (0.07%). The combination of measures proposed under the summer flounder precautionary default, scup alternative 1 and black sea bass alternative 2 has the highest impact on shore fishing trips (1.0% of total shore fishing effort).

No empirical information is available to determine how sensitive the affected anglers might be to the proposed regulations. Although the potential changes in trip-taking behavior cannot be quantified, it is not likely that the new measures will have a significant negative effect on the overall number of recreational fishing trips in the North and Mid-Atlantic regions because they will not prohibit anglers from keeping at least some of the fish they catch, prevent them from engaging in catch and release fishing, or prevent the anglers from taking trips to target other species. Many of the anglers that choose to reduce their summer flounder, scup, or black sea bass effort in 2011, in response to the new regulations, are likely to transfer this effort to alternative species resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. Nevertheless, if there is a net reduction in fishing trips in 2011, economic losses may accrue to businesses that support marine recreational activities. The next section describes the procedures used to estimate the potential losses to these supporting businesses.

Short-term regional economic impacts

An input-output model was employed to assess the potential economic losses (sales, income, and employment) associated with implementation of all combinations of the proposed management alternatives to businesses that support marine recreational fishing activities in the Northeast Region. Reductions in sales, income, and employment could occur in the Northeast Region if the affected anglers reduce fishing effort, and hence, expenditures, in response to the new regulations. Since it is unknown how anglers' trip taking behavior will change upon implementation of the proposed regulations, economic losses were estimated for two hypothetical scenarios: (1) a 10% reduction in the number of fishing trips that are predicted to be affected by implementation of the management measures in the Northeast Region; and (2) a 25% reduction in the number of fishing trips that are predicted to be affected in the Northeast Region.

Reductions in anglers' trip-related purchases will have a direct effect on the sales, income, and employment of businesses that supply goods and services to saltwater fishermen. Businesses providing these goods and services must also purchase goods and services and hire employees, which in turn, will affect the sales, income, and employment of many additional businesses.

Three levels of economic impacts result from purchases by saltwater fishermen: (1) direct, (2) indirect, and (3) induced. Direct effects occur when anglers spend money at retail and service-oriented fishing businesses (e.g., purchases of ice at convenience stores or access fees paid to owners of for-hire vessels). Indirect effects occur as the retail and service sectors purchase fishing supplies from wholesale trade businesses and manufacturers and pay operating expenditures (e.g., the retailer must purchase fishing rods from the manufacturer or wholesaler and pay electric bills). These secondary industries must then, in turn, purchase additional supplies and this cycle of industry to industry purchasing continues until the amount remaining within the region of interest is negligible. Finally, induced effects result when employees of the direct and indirect sectors make purchases from retailers and service establishments in the normal course of household consumption (e.g., convenience store employees spend money on groceries and pay federal and state taxes). The summation of direct, indirect, and induced effects are total effects.

Data and Methods

Input-output (I/O) analysis is the most common approach available for determining the direct, indirect, and induced effects associated with an overall change in economic activity in a particular region. For the analysis presented here, a ready-made regional I/O modeling system called IMPLAN Pro (Impact Analysis for Planning) was used to determine the economic losses associated with the hypothetical reductions in fishing trips under all 18 potential combinations of alternatives. The IMPLAN Pro system is a widely used, nationally recognized tool that provides detailed purchasing information for 440 industrial sectors and a user-friendly media for customizing I/O models to specific applications (Minnesota IMPLAN Group, Inc. 2001).

Angler expenditures in the Northeast Region by state and mode for marine fishing were obtained from Gentner and Steinback (2008). These expenditure data were produced from extensive surveys of marine recreational fishermen in the Northeast Region in 2006 (Table 45). The surveys were conducted as part of the MRFSS. Average fishing trip expenditures were provided for each state and mode of fishing (i.e., private boat, party/charter, and shore) in the Northeast region in 2006. Trip-related expenditure categories shown in the report included private and public transportation, auto rentals, grocery store purchases, restaurants, lodging, boat fuel, boat and equipment rentals, party/charter fees, party/charter crew tips, catch processing, access and parking, bait, ice, tackle used on trip, tournament fees and gifts/souvenirs. In addition to trip-related expenditures, Gentner and Steinback (2008) also estimated anglers' expenditures for semi-durable items (e.g., rods, reels, lines, clothing, etc.) and durable goods (e.g., motor boats, vehicles, etc.). However, expenditures for these items are not likely to change after implementation of the proposed regulations since semi-durable and durable items can be used for many fishing trips. Thus, in the analysis presented here, it is assumed that the proposed management measures will only affect anglers' trip-related expenditures.

The economic losses associated with reductions in angler expenditures were estimated by applying the product of the estimated number of affected trips and the average trip expenditure estimates from Gentner and Steinback (2008) to the appropriate IMPLAN sector multipliers in each state. The multipliers measure the direct, indirect, and induced relationships between industries and households. Input-output models require all values to be in producer prices (manufacturer prices) so each of the angler expenditure categories was associated with its corresponding IMPLAN producing sector. In IMPLAN, margins are used to convert the retail-level prices paid by anglers into the appropriate producer values. Margins ensure that the correct value is assigned to products as they move from producers, to wholesalers, through the transportation sectors, and finally on to retail establishments.

Potential economic losses are estimated for sales, income, and employment. Sales reflect the aggregate reductions in total dollar sales generated from expenditures by anglers in the Northeast Region. Income represents the aggregate reductions in wages, salaries, benefits, and proprietary income generated from angler expenditures across the coastal states in the Northeast Region. Employment includes both full-time and part-time workers and is expressed as aggregate reductions in total jobs across states.

Results

The projected regional economic losses associated with the hypothetical reductions in affected marine recreational fishing trips are shown in Tables 46 (assumes a 10% reduction in affected trips) and 47 (assumes a 25% reduction in affected trips). In total, the projected sales, income, and employment losses to the Northeast Region vary substantially across combinations of alternatives. For a 10% reduction in affected fishing trips, total losses to the Northeast region range from $2.1 million to $7.8 million in sales, $686 thousand to $2.6 million in income, and between 40 and 156 jobs (Table 46). The estimated losses are approximately 2.5 times higher if a 25% reduction in affected trips is assumed to occur (Table 47).

Across all combinations of alternatives, approximately 50% of the total sales, income, and employment losses are projected to be generated by anglers fishing from private/rental boats. Losses associated with reductions in party/charter effort comprise approximately 40% of potential region-wide reductions, while the remaining 10% is associated with shore mode effort changes. This large disparity in losses between the private boat mode and the shore and party/charter mode is generally due to the fact that the measures proposed under all combinations of alternatives are projected to affect substantially more private/rental boat trips and party/charter trips than shore trips. The Northeast landings database (VTR Data) indicates that a total of 349 party/charter vessels participated in the summer flounder, scup, and/or black sea bass fisheries in the Northeast in 2009 (Table 48).

Summary

The measures proposed under all combinations of alternatives will affect a portion of the recreational fishing trips that catch summer flounder, scup, and black sea bass. Unfortunately, although we can generally predict how many trips will be affected by the proposed measures, it is unknown how anglers' trip taking behavior will change in response to the additional restrictions. If the measures result in an overall reduction in angler effort, expenditures associated with these trips will be foregone, and reductions in sales, income, and employment will occur for businesses that supply goods and services to saltwater fishermen. In addition, the sales, income, and employment of many businesses that supply the directly affected businesses could also decline. On the other hand, if the proposed measures do not induce a change in overall angler effort, total angler expenditures would remain unchanged, and there would be no effect on supporting businesses.

Given the uncertainty surrounding how anglers will respond to the proposed measures, total potential reductions in sales, income, and employment to businesses in the coastal states of the Northeast Region are estimated for two hypothetical scenarios: (1) a 10% reduction in the number of fishing trips that are predicted to be affected by implementation of the management measures; and (2) a 25% reduction in the number of fishing trips that are predicted to be affected. Losses are estimated for all 18 combinations of alternatives that could be analyzed. The measures proposed under summer flounder alternative 1 could not be analyzed in combination with the measures proposed for scup and black sea bass because this alternative would implement conservation equivalent measures that are yet to be determined.

The projected economic losses shown in this assessment do not capture losses borne by individual anglers. The input-output approach followed in this analysis projects the change in goods and services produced by different businesses that are linked to purchases by marine anglers, but it does not provide estimates of angler welfare losses. These welfare losses are generally defined as the additional value above opportunity costs (usually taken to be expenditures of time and money) that anglers would be willing to pay to fish.

Long-term Cumulative Effects

Long-term effects of each of these management alternatives are clear: the summer flounder stock will rebuild and both scup and black sea bass will continue to be managed sustainably as a result of the accumulated effects of these measures applied over time. Although the long-term effects of these alternatives are less clear or quantifiable from a social and economic perspective, rebuilt stocks would presumably provide anglers with the ability to increase catch and possibly keep rates resulting in higher overall welfare benefits to anglers and the Nation as a whole.

Impacts Associated with Future Management Actions

While the measures to achieve managed these resources sustainably are expected to result in positive economic benefits to anglers and to businesses that support marine recreational activities in the long-term, some effects of short-term declines in revenues, jobs, and income may be irreversible, prohibiting economic growth during later years when the resources have been rebuilt. For instance, if party/charter boat anglers reduce their trip taking behavior as the industry is further restricted to meet rebuilding requirements; gentrification could begin to replace segments of the party/charter boat industry and the related land-based infrastructure. The process of gentrification transforms working harbors into upscale areas primed for recreation and tourism, replacing infrastructure that supports the party/charter industry and shore and private boat anglers (i.e., bait and tackle shops) with waterfront housing, entertainment, and dining establishments or other facilities. Among the businesses and industry support structures that may be eliminated are party/charter operations, bait and tackle suppliers, provisioners of food, ice, fuel, and boat rental businesses, etc. As shoreline property prices rise, the economic viability of these industries is becoming increasingly strained. If fishing regulations result in lower angler participation, the possibility exists that this infrastructure may be permanently replaced by new entities with alternative functions. Hall-Arber et al. (2001) noted that "if the facilities as well as the stocks are not protected, once the biophysical capital rebounds, communities that are dependent on [these] facilities...will not be able to take advantage of the improved stock conditions to generate fisheries capital for the region and nation." These structural changes to the economy and physical composition of fishing communities are accompanied by delocalization, or the loss of localized community character and culture (Hall-Arber et al. 2001). Long-standing traditions and close-knit alliances that unite fishing communities and families may cease to exist.

The management alternatives proposed for 2011 do not introduce measures that specifically seek to mitigate these problems of infrastructure loss and the changing culture of fishing communities. However, if the mortality targets established in the FMP continue to be achieved over the long-term, it is not expected that recreational fishing opportunities for summer flounder, black sea bass, and scup will be significantly impacted. If recreational landings are estimated to exceed the annual targets, management measures are adjusted to reduce the harvest in the following year to the specified level. Thus, the annual specification process provides frequent checks and balances to maintain rebuilding goals which reduces the likelihood of wide-sweeping management changes and therein the loss of recreational fishing infrastructure.

Reasonably foreseeable future federal actions include additional or revised fishing regulations, both for the summer flounder, scup, and black sea bass fisheries and for other species that marine recreational fishermen target. For example, future regulations implemented under the Northeast Multispecies FMP may induce party/charter boat operators to switch from targeting Atlantic cod and haddock on some of their trips to targeting summer flounder, scup, or black sea bass. This may have a negative effect on rebuilding goals and cause increased competition within party/charter fishing communities dependent on summer flounder, scup, and black sea bass. Additional Federal actions could also have indirect impacts on recreational fishing communities reliant on these species. Federal decisions on offshore petroleum access and the placement of inshore/offshore wind farms, for example, could have either a positive or negative effect on landings and access to summer flounder, scup, and black sea bass stocks.

Historical Account of Overages

Although the measures proposed in this EA are only for the year 2011 fisheries, these measures have the potential to result in cumulative impacts on the environment. 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 quota 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. The Council developed rebuilding programs for all three stocks, which resulted in all but summer flounder being fully rebuilt. The Council recommends annual specifications that are intended to have a reasonable likelihood of not exceeding the catch levels consistent with the best scientific information available. 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 some harvest quotas may be unintentionally exceeded before the information to close that portion of the fishery is available. On the other hand, in a given year the recreational harvest limit may not be achieved. A detail account of the commercial and recreational overages was presented in section 6.0 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications.

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. Rebuilding programs under the FMP began in 1993, 1997, and 1998 for summer flounder, scup, and black sea bass, respectively. While summer flounder is still under a rebuilding program, both scup and black sea bass were declared rebuilt in 2009. 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 presently 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 the history of overages for each of the three recreational fisheries are given in Tables 49-51.

Recreational overages are not presently deducted from the TAL, although that action has been proposed by the Council and may be implemented by NMFS; the total overage, however, does factor 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 target or threshold Fs associated with catch limits will not be met and/or that the rebuilding schedule, in the case of summer flounder, 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.

Projected estimates of recreational landings indicate that there will be overages in the scup and black sea bass fisheries in 2010. No overages are expected in the summer flounder fishery for 2010. The Council and NMFS recognize that overages in any of the fisheries could have additional negative impacts on the rate of rebuilding, in the case of summer flounder, affect the integrity of the original allocation percentages and the long-term sustainability of any of these stocks.

7.4.7 Conclusions

None of the proposed management measures will have significant cumulative effects on the target species or non-target species individually or in conjunction with other anthropogenic activities. The proposed actions, together with past, present, and future actions, are expected to result in positive cumulative impacts on the biological, physical, and human components of the environment. As long as management continues to prevent overfishing for all three species and continue the rebuilding process for the summer flounder stock, the fisheries and their associated communities will prosper.

This action builds on actions taken in the original FMP, subsequent amendments, and the annual specification process for the 2011 fishing year. Based on the information and analyses presented in this specifications document, there are no significant cumulative effects associated with the proposed summer flounder, scup, and black sea bass recreational specifications.

8.0 Essential Fish Habitat Assessment

The EFH Final Rule (50 CFR Part 600.920) requires that "for any Federal action that may adversely affect EFH, Federal agencies must provide NMFS with a written assessment of the effects of that action on EFH." The following assessment fulfills this requirement.

The principal gear types used in the recreational fishery for summer flounder, scup, and black sea bass are rod and reel and handline. According to information presented in section 6.2 of the EA, the potential adverse impacts of these two gear types on EFH for any federally-managed species in the Northeast region are minimal. Although quantification of specific gear types on various bottom habitats is poorly understood, rod and reel and handlines are generally not associated with adverse EFH impacts because the gear does not alter bottom structure and physical habitat effects of hook and line gear are very low. Because the proposed action in this document is focused on recreational management measures and the principal gears used in the recreational fishery for these three species, it is concluded that the proposed action will have no adverse impact on EFH or affect critical habitat in any manner not considered in prior consultations. It is therefore expected that this action will continue to minimize the adverse effects of this recreational fishery on EFH to the extent practicable, pursuant to section 305(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act.

9.0 APPLICABLE LAWS

9.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA): National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The actions taken in this specification document are confined to processes defined within the FMP; therefore, as actions within the FMP have been deemed consistent with the National Standard, these specification actions are similarly consistent. The most recent FMP Amendments 12, 13, and 14 (MAFMC 1998, 2002, 2007, respectively) address how the management actions implemented comply with the National Standards. First and foremost, the Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield for summer flounder, scup, and black sea bass and the U.S. fishing industry. The Council uses the best scientific information available (National Standard 2) and manages all three species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states, (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will insure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

9.2 NEPA (FONSI)

Finding of No Significant Impact

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. The Council-preferred action includes summer flounder alternative 1, scup alternative 1, and black sea bass alternative 1. In addition, the Council on Environmental Quality regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

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

The proposed action for summer flounder, scup, and black sea bass is not expected to jeopardize the sustainability of any target species that may be affected by the action, as described in section 7.0 of the EA. As specified in the FMP, this proposed action is intended to constrain recreational landings to prevent catch and landings limits from being exceeded for summer flounder, scup, and black sea bass specified in their respective management plans.

2) Can the proposed action reasonably be 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 constrain recreational landings to the recreational harvest limit specified through the FMP for the 2011 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. Bycatch of non-target species in the recreational fishery using rod and reel or handline is not expected to be substantial.

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

The proposed action as described in section 5.0 of the EA is not expected to cause substantial damage to the ocean, 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 FMPs. The primary gear utilized in the recreational harvest of summer flounder, scup, and black sea bass is hook and line gear (rod and reel or handlines). Although the specific effects of these gear types on various bottom habitats are poorly understood, any potential habitat impacts associated with their use are minimal. Furthermore, the proposed action does not include any major changes to existing management measures and will not result in significant impacts to the environment or to EFH (section 6.2 of the EA).

4) 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 among size limits, seasons and possession limits, so as not to compromise public health or safety.

5) Can the proposed action reasonably be expected to adversely affect 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. The interaction between protected species and the gear used in the recreational summer flounder, scup, and black sea bass fisheries is minimal. As stated in section 6.3 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.

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

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 to reduce recreational landings to achieve the target fishing mortality rates under the summer flounder, scup, and black sea bass FMPs. 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. Bycatch of non-target species in the recreational fishery using rod and reel or handline is not expected to be substantial. The proposed action will likely ensure biodiversity and ecosystem stability over the long-term as scup and black sea bass are sustainably managed and summer flounder rebuilds.

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

As discussed in section 7.0 of the EA, the proposed action is not expected to result in significant social or economic impacts, or in significant natural or physical environmental effects. Therefore, there are no significant social or economic impacts interrelated with significant natural or physical environmental impacts.

8) Are the effects on the quality of the human environment likely 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 2011, as specified through the FMP. The proposed action is based on measures contained in the FMP, which have been in place for many years.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

This action merely revises the proposed annual management measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2011, as specified through the FMP. These recreational fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

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

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the annual management measures for the upcoming fishing year to prevent catch and landings limits from being exceeded for summer flounder, scup, and black sea bass specified in their respective management plans. The measures contained in this action are not expected to have highly uncertain, unique, or unknown risks on the human environment.

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

As discussed in section 7.5, the proposed action is not expected to have individually insignificant but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. The proposed action together with past and future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the annual management measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2011, as specified through the FMP. These summer flounder, scup, and black sea bass recreational fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

This action proposes annual management measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2011, as specified through the FMP. There is no evidence or indication that these fisheries have ever resulted in the introduction or spread of nonindigenous species. None of the specifications are expected to alter fishing methods or activities in the recreational fishery. Therefore, it is highly unlikely that the proposed specifications would be expected to result in the introduction or spread of a non-indigenous species.

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

This action merely revises the annual management measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2011, as specified through the FMP. None of the specifications are expected to alter fishing methods or activities in the recreational fishery. The proposed action is based on measures contained in the FMP, which have been in place for many years. None of these specifications result in significant effects or do they represent a decision in principle about a future consideration.

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

This action proposes annual management measures for the upcoming fishing year to achieve the recreational harvest limits for summer flounder, scup, and black sea bass in 2011, as specified through the FMP. None of the specifications are expected to alter fishing methods or activities such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws (see sections 9.2 - 9.9 below).

16) Can the proposed action reasonably be 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 2011 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.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the 2011 Summer Flounder, Scup, and Black Sea Bass Recreational Specifications, it is hereby determined that the proposed action for summer flounder, scup, and black sea bass in this specification package will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

____ ____________________

Regional Administrator for NERO, NMFS, NOAA *Date*

9.3 Endangered Species Act

Sections 6.3 and 7.4.5 of the EA should be referenced for an assessment of the impacts of the proposed action on endangered species and protected resources. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

9.4 Marine Mammal Protection Act

Sections 6.3 and 7.4.5 of the EA should be referenced for an assessment of the impacts of the proposed action on marine mammals. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries.

9.5 Coastal Zone Management Act

NMFS previously determined that annual specifications and recreational management measures under the Summer Flounder, Scup, and Black Sea Bass FMP are consistent to the maximum extent practicable with the enforceable policies of the approved coastal management program of states from ME to NC. This determination was submitted on February 25, 2008, for review by the responsible state agencies under section 307 of the CZMA. NH, CT, RI, PA, NJ, DE, VA, and NC concurred with the consistency determination. The remaining states consulted did not respond; therefore, consistency is inferred.

9.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed specifications document was developed through a multi-stage process that began with the review of the source document (2011 Summer Flounder, Scup, and Black Sea Bass Specifications), and was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 30, 2009 and November 18, 2010, and during the MAFMC Council meetings held on August 16-19, 2010 and December 13-16, 2010. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the Federal Register (FR).

9.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes recreational management measures in 2011 for the summer flounder, scup, and black sea bass fisheries. This document includes: A description of the alternatives considered, the Council-preferred action and rationale for selection, and any changes to the implementing regulations of the FMP. As such, this document enables the implementing agency (NMFS) to make a decision on implementation of annual specifications (i.e., management measures) and this document serves as a supporting document for the proposed rule.

The action contained within this specifications document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 30, 2009 and November 18, 2010, and during the MAFMC Council meetings held on August 16-19, 2010 and December 13-16, 2010. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the Federal Register (FR).

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is “Natural Resource Plans.” This section (section 9.0) describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available and the most up to date information is used to develop the EA which evaluates the impacts of those alternatives (see sections 4.3 and 7.0 of this document for additional details). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the summer flounder, scup, and black sea bass fisheries.

The review process for this specifications document involves MAFMC, NEFSC, NERO, and NOAA Fisheries headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and social anthropology. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by NERO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

9.8 Paperwork Reduction Act

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 businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

9.9 Impacts of the Plan Relative to Federalism/EO 13132

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

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11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT

The summer flounder, scup and black sea bass specifications were submitted to NMFS by MAFMC. This specifications package was prepared by the following members of the MAFMC staff: Jessica Coakley and Dr. José L. Montañez, and Dr. Scott Steinback (NEFSC) assisted in documenting the analysis of permit data and the socioeconomic analyses.

Additional copies of this document are available from Dr. Christopher M. Moore, Executive Director, Mid-Atlantic Fishery Management Council, Suite 201, 800 North State Street, Dover, DE 19901.

12.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this specifications document, the Council consulted with the NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS NERO personnel was sought, including Michael Ruccio, Michael Pentony, and Sarah Thompson.

REGULATORY IMPACT REVIEW/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 (EO) 12866.

Also included is an Initial Regulatory Flexibility 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 2011 recreational specifications for summer flounder, scup, and black sea bass.

2.0 Evaluation of EO 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 4.0 of the EA. This action is taken under the authority of the 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 in section 6.0 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 6.4 of the 2011 Summer Flounder, Scup, and Black Sea Bass Specifications. Additional characterization of these fisheries is presented in sections 6.0 of the EA.

2.3 A Statement of the Problem

A statement of the problem for resolution is presented under section 4.0 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 5.0 of the EA. A full description of the TAL derivation process is presented in sections 4.3 and 5.0 of the 2011 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 EO 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 action 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 30,660,109 fishing trips were taken in the Northeast Region (Maine-North Carolina) in 2010. It is estimated that the number of trips by fishing mode was 1,434,969 party/charter boat trips, 16,051,481 private/rental boat trips, and 13,173,659 shore trips (Table 31).

Assuming angler effort in 2011 will be the same as that estimated for 2010, fishing impacts were first examined by estimating the number of recreational fishing trips in 2010 that would have been "affected" by the proposed 2011 management measures. Section 7.5.6 of the EA (i.e., socioeconomic discussion) delineates the procedures and data bases used to determine the number of affected trips. Next, an input-output model was employed to address potential direct, indirect, and induced short-term economic losses in sales, income, and employment in the Northeast Region. If the proposed measures result in an overall reduction in angler effort, expenditures associated with these trips will be foregone, and reductions in sales, income, and employment will occur for businesses that supply goods and services to saltwater fishermen. In addition, the sales, income, and employment of many businesses that supply the directly affected businesses could also decline.

All of the potential 18 combinations of alternatives that could be analyzed for summer flounder, scup, and black sea bass were included in the assessment.[2]

[2] However, since the management measures under fluke alternative 1 (i.e., conservation equivalency) have yet to be adopted, the potential losses under this alternative could not be analyzed in conjunction with the alternatives proposed for scup and black sea bass. Since conservation equivalency allows each state to tailor specific recreational fishing measures to the needs of their state, while still achieving conservation goals, it is likely that the measures developed under fluke alternative 1 when considered in combination with the measures proposed for scup and black sea bass would have lower overall adverse effects than any of the combinations that were analyzed.

Since no empirical information is available to determine how anglers' trip taking behavior will change upon implementation of the proposed regulations, economic losses were estimated under two hypothetical scenarios: (1) a 10% reduction in the number of fishing trips that are predicted to be affected by implementation of the management measures in the Northeast Region in 2011; and (2) a 25% reduction in the number of fishing trips that are predicted to be affected in the Northeast Region in 2011. These analyses are described in detail in section 7.5.6 of the EA (i.e., socioeconomic discussion).

The projected regional economic losses associated with the hypothetical reductions in affected marine recreational fishing trips are shown in Tables 46 (assumes a 10% reduction in affected trips) and 47 (assumes a 25% reduction in affected trips). In total, the projected sales, income, and employment losses to the Northeast Region vary substantially across combinations of alternatives. For a 10% reduction in affected fishing trips, total losses to the Northeast region range from $2.1 million to $7.8 million in sales, $686 thousand to $2.6 million in income, and between 40 and 156 jobs (Table 46). The estimated losses are approximately 2.5 times higher if a 25% reduction in affected trips is assumed to occur (Table 47).

Across all combinations of alternatives, approximately 50% of the total sales, income, and employment losses are projected to be generated by anglers fishing from private/rental boats. Losses associated with reductions in party/charter effort comprise approximately 40% of potential region-wide reductions, while the remaining 10% is associated with shore mode effort changes. This large disparity in losses between the private boat mode and the shore and party/charter mode is generally due to the fact that the measures proposed under all combinations of alternatives are projected to affect substantially more private/rental boat trips and party/charter trips than shore trips.

Long-term biological effects of each of these management alternatives are clear: summer flounder will rebuild and both scup and black sea bass will continue to be managed sustainably as a result of the accumulated effects of these measures applied over time. Although the long-term effects of these alternatives are less clear or quantifiable from a social and economic perspective, rebuilt stocks would presumably provide anglers with the ability to increase catch and possibly keep rates resulting in higher overall welfare benefits to anglers and the Nation as a whole. Therefore, this action should 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 should 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. However, future regulations implemented under the Northeast Multispecies FMP may induce party/charter boat operators to switch from targeting Atlantic cod and haddock on some of their trips to targeting summer flounder, scup, or black sea bass. Although this switching behavior is not predicted to be significant, this may have a negative effect on fishery management objectives and cause increased competition within party/charter fishing communities dependent on summer flounder, scup, and black sea bass. 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 or the President's priorities.

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 Regulated Small Entities

The Regulatory Flexibility Act (RFA) requires the Federal rule maker 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: (A) certify that the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities; or (B) prepare an IRFA. 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 $4.0 and $7.0 million, respectively.

Description of the Reasons Why Action by the Agency is being Considered

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0 of the EA. A statement of the problem for resolution is presented under section 4.0 of the EA.

The Objectives and Legal Basis of the Proposed Rule

A complete description of the objectives of this proposed rule is found under section 4.0 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.

Estimate of the Number of Small Entities

This rule would apply to the following small entities: summer flounder, scup or black sea bass party/charter 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 2011.

Data from the Northeast permit application database indicates that in 2009 there were 980 recreational vessels permitted to take part in the summer flounder, scup, and/or black sea bass fisheries in the EEZ. The Northeast landings database (VTR Data) indicates that a total of 349 party/charter vessels participated in the summer flounder, scup, and/or black sea bass fisheries in the Northeast in 2009 (Table 48).

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.

Conflict with Other Federal Rules

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

4.2 Significant Alternatives to the Proposed Rule

There is no need to further mitigate economic impacts on small entities because the Council selected the alternatives determined to result in the least severe impacts without compromising the biological health of the stocks.

The analysis conducted did not include the specific state measures under conservation equivalency for summer flounder because the states have not yet been adopted specific management measures. Nevertheless, it is expected that the since conservation equivalent recreational management measures would allow each state to develop specific summer flounder recreational measures that allow the fishery to operate in each state during critical fishing periods while still achieving conservation goals while mitigating potential adverse economic effects in specific states. Therefore, it is likely that the measures developed under summer flounder alternative 1 when considered in combination with the measures proposed for scup and black sea bass would have lower overall adverse effects in 2011 than any of the other combinations that were analyzed. 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.

4.3 General Fishing Trends

A detailed description of the fishery for summer flounder, scup, and black sea bass is presented in section 6.0 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.

Summer Flounder

Summer flounder recreational data indicate that for the 1993 to 2009 period recreational landings were less than the recreational harvest limits in only six years (Table 49). For 2010, recreational landings are projected to be less than the recreational harvest limit of 8.59 million lb. The total number of recreational trips, where summer flounder was the primary target species, has fluctuated throughout the 1991 to 2009 period from 3.8 million trips in 1992 to 6.1 million trips in 2001 from Maine through North Carolina. Overall, summer flounder directed fishing trips have remained relatively since 2003 (Table 49).

The proposed recreational harvest limit for 2011 is 11.58 million lb (see discussion in section 5.1). This recreational harvest limit is approximately 35% higher than the recreational harvest limit implemented in 2010 (8.59 million lb) and 133 % higher than the projected recreational landings for 2010 (4.98 million lb; Table 49). The proposed recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2011.

Scup

Scup recreational landings have declined for the period 1991 through 1998 (Table 50). The number of directed 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 is perhaps a result of the stock being over-exploited and at a low biomass level. In addition, it is possible that party/charter boats may had targeted other species that were 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. Scup recreational data indicate that for the 1997 to 2010 period recreational landings were less than the recreational harvest limits in only four years (Table 50). For 2010, recreational landings are projected to be greater than the recreational harvest limit of 3.01 million lb (Table 50). The total number of recreational trips, where scup was the primary target species, has fluctuated throughout the 1991 to 2009 period from 0.20 million trips in 1997 to 0.98 million trips in 2003 from Maine through North Carolina. Overall, scup directed fishing trips have remained relatively since 2004 (Table 50).

The recreational harvest limit for 2011 is 4.30 million lb. This limit is approximately 43% above the recreational harvest limit implemented in 2010 (3.01 million lb) and approximately 25% below the projected recreational landings in 2010 (5.74 million lb; Table 50). 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 2011.

Black Sea Bass

Black sea bass recreational data indicate that for the 1998 to 2009 period recreational landings were higher than the recreational harvest limits in five years (Table 51). For 2010, recreational landings are projected to be greater than the recreational harvest limit of 1.83 million lb. The total number of recreational trips, where black sea bass was the primary target species, has fluctuated throughout the 1991 to 2009 period from 0.14 million trips in 1999 to 0.38 million trips in 2007 from Maine through North Carolina (Table 51).

The proposed recreational harvest limit for 2011 is nearly identical to the limit established in 2010 (1.83 million lb) and lower than the projected recreational landings in 2009 (3.11 million lb; Table 51). The proposed recreational management measures are necessary to prevent anglers from exceeding the recreational harvest limit in 2011.

Expenditures for Recreational Fishing

During 2006, social and economic data from marine recreational fishermen in the Northeast Region were gathered through an economic add-on to NMFS' MRFSS (Gentner and Steinback 2008). 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 2011 regulations.

Survey results indicate that the average trip expenditure in the Northeast Region in 2006 was $39.14 for anglers fishing from a private/rental boat, $55.39 for shore anglers, and $107.13 for anglers that fished from a party/charter boat (Table 45). Trip expenditures included the following consumable items: (1) public and private transportation; (2) food, drink, and refreshments from grocery stores; (3) meals at restaurants; (4) auto rental; (5) lodging; (6) boat fuel; (7) boat or equipment rental; (8) charter fees; (9) charter crew tips; (10) catch processing; (11) access and parking; (12) bait; (13) ice; (14) tackle used on trip; (15) tournament fees; and (16) gifts/souvenirs. Expenditures on durable items such as rods, reels, special fishing clothing, etc., were also estimated in the Gentner and Steinback 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.

5.0 Analysis of Impacts of Proposed Measures

This analysis will present information relative to the impacts of this proposed action on small entities. Specifically, assessments of potential changes in gross revenues for all 18 combinations of alternatives proposed in this action were conducted for federally permitted party/charter vessels in each state in the Northeast.[3] Estimates of the impacts upon profitability are not provided because data on costs and revenues for party/charter vessels are not available at this time. As such, potential changes in gross revenues for party/charter vessels participating in these fisheries were estimated by employing various assumptions which are described below. The effects of these 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 first estimating the number of angler trips aboard party/charter vessels in each state in 2010 that would have been affected by the proposed 2011 management measures. All 2010 party/charter fishing trips that would have been constrained by the proposed 2011 measures in each Northeast state were considered to be "affected" trips. To date, the first five waves of MRFSS effort data are available for 2010. Wave six effort estimates for 2009 (November - December) were used as a proxies for wave six 2010 effort. Therefore, wave six effort estimates for 2010 were assumed to be the same as in 2009.

Unfortunately, no empirical information is available to determine how sensitive the "affected" anglers might be to the proposed management changes. If the proposed measures discourage trip-taking behavior among some of the affected anglers, economic losses may accrue to the party/charter boat industry in the form of reduced access fees.

[3] The management measures proposed under summer flounder alternative 1 (i.e., conservation equivalency) have yet to be adopted so the potential losses under this alternative could not be analyzed in conjunction with the alternatives proposed for scup and black sea bass. Since conservation equivalency allows each state to tailor specific recreational fishing measures to the needs of their state, while still achieving conservation goals, it is likely that the measures developed under summer flounder alternative 1 when considered in combination with the measures proposed for scup and black sea bass would have lower overall adverse effects than any of the other combinations that were analyzed.

On the other hand, if the proposed measures do not have a negative impact on the value or satisfaction the affected anglers derive from their fishing trips then party/charter revenues would remain unaffected by this action. In an attempt to bound the potential changes in gross revenues to the party/charter boat industry in each state, economic losses were estimated under two hypothetical scenarios: (1) a 10% reduction in the number of fishing trips that are predicted to be affected by implementation of the management measures in the Northeast Region in 2010; and (2) a 25% reduction in the number of fishing trips that are predicted to be affected in the Northeast Region in 2010.

Total economic losses to party/charter vessels were then estimated by multiplying the number of potentially affected trips in each state in 2011, under the two hypothetical scenarios, by the estimated average access fee paid by party/charter anglers in the Northeast region in 2010 ($62.47).[4] The recreational fishing expenditure data used in this analysis was presented in detail in section 7.5.6 of the EA (i.e., socioeconomic discussion). Finally, total economic losses for 2010 were divided by the number of federally permitted party/charter vessels that participated in the summer flounder, scup, and/or, black sea bass in each state (according to homeport state in the Northeast logbook database) to obtain an estimate of the average projected gross revenue loss per party/charter vessel in 2011.

Results

All 18 potential combinations of management alternatives proposed for summer flounder, scup, and black sea bass could affect party/charter boat revenues to some extent in all of the northeast coastal states except for Maine and New Hampshire (Tables 52 through 69). The estimated average party/charter losses vary considerably across the 18 potential combinations of alternatives in each state. For instance, in New York, average gross revenue losses range from $593 per vessel up to $3,477 per vessel in 2011 (assuming a 10% reduction in affected effort). Across states, average gross revenue losses range from a low of $19 per vessel in Delaware to $19,003 in North Carolina. Average gross revenue losses per vessel under each of the 18 combinations of alternatives were generally highest in North Carolina and Massachusetts followed by New Jersey, New York, Rhode Island, Connecticut, Maryland, Virginia, and then Delaware.

Actual losses will likely be even lower than described above for several reasons. First, since the management measures proposed under summer flounder alternative 1 (i.e., conservation equivalency) have yet to be adopted; the potential losses under this alternative could not be analyzed in conjunction with the alternatives proposed for scup and black sea bass. Since conservation equivalency allows each state to tailor specific recreational fishing measures to the needs of their state, while still achieving conservation goals, it is likely that the measures developed under summer flounder alternative 1 when considered in combination with the measures proposed for scup and black sea bass would have lower overall adverse effects in 2011 than any of the other combinations that were analyzed.

[4] The 2006 party/charter average expenditure estimate ($57.76; Table 45) was adjusted to its 2010 equivalent using the Bureau of Labor's Consumer Price Index.

Secondly, the universe of party/charter vessels that participates in the summer flounder, scup, and black sea bass fisheries is likely to be even larger than presented in this analysis. Party/charter vessels that do not possess a Federal summer flounder, scup, or black sea bass permit because they only fish in state waters are not represented in this assessment. Considering that 88% and 98% of the landings of summer flounder and scup in 2009, respectively, were caught in state waters (Table 30) it is probable that some party/charter vessels fish only in state waters and, thus, do not hold Federal permits for these species. 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.

Lastly, economic losses are estimated under two hypothetical scenarios: (1) a 10% reduction in the number of fishing trips that are predicted to be affected by implementation of the management measures in the Northeast Region in 2010; and (2) a 25% reduction in the number of fishing trips that are predicted to be affected in the Northeast Region in 2011. Reductions in fishing effort of this magnitude in 2011 are not likely to occur given the fact that the proposed measures do not prohibit anglers from keeping at least some of the fish they catch or the fact that there are alternative species to harvest. Steinback at al. (2009) estimate that only up to about 28% of marine anglers fishing in the Northeast US fish primarily to bring home fish to eat. The remaining 72% of anglers were found to fish purely for recreational purposes and therefore likely place little importance on being able to keep fish. 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 et al.(2009) and many other peer-reviewed studies suggest that at least some of the potentially affected anglers would not reduce their effort when faced with the proposed landings restrictions.

TABLES

Table 1. Summer flounder landings (number in thousands) by state for 1998, the 2010 projected landings (number in thousands), and the 2011 target (number in thousands) under the Council-preferred and NMFS proposed recreational harvest limit of 11.58 million lb. The percent reduction necessary to achieve the 2011 recreational harvest limit in the Commission's conservation equivalency system relative to 2010 landings is also presented.

State	1998	2011 Target[a]	2010[b]	% Reduction
MA	383	190	46	0
RI	395	196	87	0
CT	261	129	40	0
NY	1,230	609	251	0
NJ	2,728	1351	594	0
DE	219	108	72	0
MD	206	102	38	0
VA	1,165	577	273	0
NC	391	194	95	0

[a] Based on a 50.1% reduction in 1998 landings and mean weight of 3.35 lb per fish.
[b] Projected using proportion from 2009 MRFSS data and 2010 MRFSS wave 1-5 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 14, 2010).

Table 2. Procedures for establishing summer flounder recreational management measures, modified to include voluntary multi-state conservation equivalency (changes underlined).

August
Council/Commissions's 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 <u>state-specific and multi-state conservation equivalency</u> guidelines 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 <u>state-specific or multi-state conservation equivalency proposals</u> 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, <u>state-specific or multi-state conservation equivalency</u> 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:
-<u>State-specific or multi-state conservation equivalency</u> 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 2010 scup recreational landings. The tables contain the proportional reduction in number of scup landed assuming regulations are 100% effective. Note: Reduction is calculated as the difference between the values associated with the current regulations and those being evaluated.

Bag	10.5	11	11.5	12.0	12.5	13.0	13.5	14	14.5
1	0.8232	0.8558	0.8936	0.9154	0.9427	0.9570	0.9681	0.9769	0.9777
2	0.7170	0.7844	0.8351	0.8737	0.9116	0.9327	0.9465	0.9660	0.9673
3	0.6414	0.7320	0.7929	0.8465	0.8933	0.9170	0.9334	0.9554	0.9591
4	0.5884	0.6928	0.7583	0.8276	0.8778	0.9044	0.9210	0.9454	0.9515
5	0.5622	0.6675	0.7394	0.8150	0.8664	0.8954	0.9122	0.9389	0.9474
6	0.5419	0.6501	0.7279	0.8050	0.8595	0.8910	0.9079	0.9348	0.9433
7	0.5282	0.6372	0.7211	0.7996	0.8568	0.8907	0.9076	0.9347	0.9433
8	0.5152	0.6252	0.7147	0.7944	0.8543	0.8905	0.9073	0.9346	0.9433
9	0.5049	0.6180	0.7108	0.7916	0.8519	0.8902	0.9071	0.9346	0.9433
10	0.4968	0.6131	0.7070	0.7888	0.8494	0.8899	0.9068	0.9346	0.9433
15	0.4757	0.6042	0.7025	0.7870	0.8482	0.8891	0.9066	0.9346	0.9433
20	0.4663	0.6000	0.7006	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
25	0.4602	0.5973	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
30	0.4565	0.5963	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
35	0.4538	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
40	0.4529	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
45	0.4528	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433

Table 4. a) Average percent of scup landed (in number) by wave, based on 1996-2000 MRFSS landings data and b) projected reduction in scup landings (in number) associated with closing one day per wave, based on 1996-2000 MRFSS landings data.

a.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
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

b.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MA	0.0	0.0	0.61	0.51	0.51	0.0
RI	0.0	0.0	0.08	0.78	0.75	0.02
CT	0.0	0.0	0.13	0.80	0.69	0.00
NY	0.0	0.0	0.36	0.45	0.80	0.02
NJ	0.0	0.01	0.0	0.05	1.29	0.30
DE	0.0	0.0	0.0	0.15	1.47	0.02
MD	0.0	0.0	0.0	0.74	0.0	0.88
VA	0.0	0.0	0.0	0.0	1.44	0.20
NC	0.0	0.05	0.67	0.50	0.40	0.0
Coast	0.0	0.01	0.21	0.44	0.82	0.16

Table 5. a) Average percent of black sea bass landed (in number) by wave, 2006-2008, based on 2006-2008 MRFSS landings data, and b) projected reduction in black sea bass landings (in number) associated with closing one day per wave, based on 2006-2008 MRFSS landings data.

a.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MA	0.0000	0.0000	28.1811	23.0679	48.7510	0.0000
RI	0.0000	0.0089	4.8779	32.6440	56.1700	6.2992
CT	0.0000	0.0000	8.0453	81.4640	1.0744	9.4164
NY	0.0000	0.0000	24.7302	39.0254	29.5265	6.7179
NJ	0.0000	0.3806	55.4295	14.9938	27.1842	2.0119
DE	0.0000	3.3517	47.8969	22.2969	24.2147	2.2398
MD	0.0000	0.6348	56.9196	15.1858	20.7386	6.5212
VA	0.0000	5.9458	51.8987	18.1779	15.3821	8.5955
NC	7.7935	10.9996	30.9160	26.0337	6.8825	17.3746
Coast	0.5841	1.5038	42.9023	22.5721	27.8707	4.5671

b.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
MA	0.0000	0.0000	0.4620	0.3721	0.7992	0.0000
RI	0.0000	0.0001	0.0800	0.5265	0.9208	0.1033
CT	0.0000	0.0000	0.1319	1.3139	0.0176	0.1544
NY	0.0000	0.0000	0.4054	0.6294	0.4840	0.1101
NJ	0.0000	0.0062	0.9087	0.2418	0.4456	0.0330
DE	0.0000	0.0549	0.7852	0.3596	0.3970	0.0367
MD	0.0000	0.0104	0.9331	0.2449	0.3400	0.1069
VA	0.0000	0.0975	0.8508	0.2932	0.2522	0.1409
NC	0.1321	0.1803	0.5068	0.4199	0.1128	0.2848
Coast	0.0099	0.0247	0.7033	0.3641	0.4569	0.0749

Table 6. The effect of various size and possession limits on 2010 black sea bass recreational landings. The table contains the proportional reduction in number of black sea bass landed assuming the regulations were 100% effective. Note: Reduction is calculated as the difference between the values associated with the current regulations and those being evaluated.

	Size (TL)			
Bag	**12.5**	**13**	**13.5**	**14**
1	0.6573	0.7294	0.7716	0.8011
2	0.4863	0.5868	0.6657	0.7132
3	0.4044	0.5291	0.6250	0.6929
4	0.3503	0.4948	0.5985	0.6778
5	0.3244	0.4774	0.5850	0.6664
6	0.3069	0.4634	0.5739	0.6573
7	0.2918	0.4522	0.5638	0.6492
8	0.2793	0.4463	0.5592	0.6465
9	0.2722	0.4420	0.5551	0.6446
10	0.2673	0.4387	0.5535	0.6435
11	0.2626	0.4362	0.5522	0.6424
12	0.2588	0.4350	0.5511	0.6414
13	0.2554	0.4339	0.5499	0.6405
14	0.2525	0.4329	0.5490	0.6396
15	0.2510	0.4320	0.5481	0.6386
20	0.2483	0.4319	0.5481	0.6386
25	0.2457	0.4319	0.5481	0.6386

Table 7. **Summary of Federal management measures for the summer flounder recreational fishery, 1993-2010.**

Measure	1993	1994	1995	1996	1997	1998	1999	2000	2001
Harvest Limit (m lb)	8.38	10.67	7.76	7.41	7.41	7.41	7.41	7.41	7.16
Landings (m lb)	8.83	9.33	5.42	9.82	11.87	12.48	8.37	16.47	11.64
Possession Limit	6	8	6/8	10	8	8	8	8	3
Size Limit (TL in)	14	14	14	14	14.5	15	15	15.5	15.5
Open Season	5/15 - 9/30	4/15 - 10/15	1/1 - 12/31	1/1 - 12/31	1/1 - 12/31	1/1 - 12/31	5/29 - 9/11	5/10 - 10/2	4/15 - 10/15
Measure	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Harvest Limit (m lb)	9.72	9.28	11.21	11.98	9.29	6.68	6.22	7.16	8.59
Landings (m lb)	8.01	11.64	10.87	10.58	11.55	9.86	7.90	6.30	4.98[a]
Possession Limit	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
Size Limit (TL in)	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]
Open Season	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]	[b]

[a] Projected using proportion from 2009 MRFSS data and 2010 MRFSS wave 1-5 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 14, 2010). [b]State-specific conservation equivalency measures.

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Table 8. Conservation equivalent summer flounder recreational management measures by state, 2008.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	17.5	5 fish	June 10 – Aug. 15
Rhode Island	20.0	7 fish	All year
Connecticut	19.5	5 fish	May 24 - Sept. 1
New York	20.5	4 fish	May 15 - Sept. 1
New Jersey	18.0	8 fish	May 24 - Sept. 7
Delaware	19.5	4 fish	All year
Maryland: **Atlantic & Coastal Bays** **Chesapeake Bay**	17.5 16.5	3 fish 1 fish	Jan. 1 – Oct. 24
Potomac River Fisheries Commission	16.5	1 fish	All year
Virginia	19.0	5 fish	Jan. 1 – July 20 and July 31 – Dec. 31
North Carolina	15.5 in all waters except the following: 14.0 in Pamlico Sound[A], Albemarle Sound[B], and Browns Inlet South[C] (lat/log are listed below)	8 fish	All year

A. PAMLICO SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point on Point of Marsh in Carteret County at 35° 04.6166'N – 76° 27.8000'W, then running northeasterly to a point at Bluff Point in Hyde County at 35° 19.7000'N – 76° 09.8500'W. In Core and Clubfoot creeks, the Highway 101 Bridge constitutes the boundary north of which flounder must be at least 14 inches total length.

B. ALBEMARLE SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point 35° 57.3950'N – 76° 00.8166'W on Long Shoal Point; running easterly to a point 35° 56.7316'N – 75° 59.3000' W near Marker "5" in Alligator River; running northeasterly along the Intracoastal Waterway to a point 36° 09.3033'N - 75° 53.4916'W near Marker "171" at the mouth of North River; running northwesterly to a point 36° 09.9093'N – 75° 54.6601'W on Camden Point.

C. BROWNS INLET-SOUTH – No person may possess flounder less than 14 inches total length in internal and Atlantic Ocean fishing waters for recreational purposes west and south of a line beginning at a point 34° 37.0000'N – 77° 15.000'W; running southeasterly to a point 34° 32.0000'N – 77° 10.0000'W.

Table 9. Conservation equivalent summer flounder recreational management measures by state, 2009.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	18.5	5 fish	July 1 – Aug. 13
Rhode Island	21.0	6 fish	June 17 – Dec. 31
Connecticut	19.5	3 fish	June 15 – Aug. 19
New York	21.0	2 fish	May 15 - June 15 and July 3-Aug. 17
New Jersey	18.0	6 fish	May 23 – Sept. 4
Delaware	18.5	4 fish	All Year
Maryland: **Atlantic & Coastal Bays** **Chesapeake Bay**	 18.0 16.5	 3 fish 1 fish	April 15 - Sept. 13
Potomac River Fisheries Commission	16.5	1 fish	April 15-Sept. 13
Virginia	19.0	5 fish	All year
North Carolina	15.0 in all waters except the following: 14.0 in Pamlico Sound[A], Albemarle Sound[B], and Browns Inlet South[C] (lat/log are listed below)	8 fish	All Year

A. PAMLICO SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point on Point of Marsh in Carteret County at 35° 04.6166'N – 76° 27.8000'W, then running northeasterly to a point at Bluff Point in Hyde County at 35° 19.7000'N – 76° 09.8500'W. In Core and Clubfoot creeks, the Highway 101 Bridge constitutes the boundary north of which flounder must be at least 14 inches total length.

B. ALBEMARLE SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point 35° 57.3950'N – 76° 00.8166'W on Long Shoal Point; running easterly to a point 35° 56.7316'N – 75° 59.3000' W near Marker "5" in Alligator River; running northeasterly along the Intracoastal Waterway to a point 36° 09.3033'N - 75° 53.4916'W near Marker "171" at the mouth of North River; running northwesterly to a point 36° 09.9093'N – 75° 54.6601'W on Camden Point.

C. BROWNS INLET-SOUTH – No person may possess flounder less than 14 inches total length in internal and Atlantic Ocean fishing waters for recreational purposes west and south of a line beginning at a point 34° 37.0000'N – 77° 15.000'W; running southeasterly to a point 34° 32.0000'N – 77° 10.0000'W.

Table 10. Conservation equivalent summer flounder recreational management measures by state, 2010.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	18.5	5 fish	May 22-Sept. 6
Rhode Island	19.5	6 fish	May 1-Dec. 31
Connecticut	19.5	3 fish	May 15-Aug. 25
New York	21.0	2 fish	May 15-Sept. 6
New Jersey	18.0	6 fish	May 29-Sept. 6
Delaware	18.5	4 fish	Jan. 1-Oct. 13
Maryland	19.0	3 fish	April 17-Nov. 22
PRFC	18.5	4 fish	All year
Virginia	18.5	4 fish	All year
North Carolina	15.0 in all waters except the following: 14.0 in Pamlico Sound[A], Albemarle Sound[B], and Browns Inlet South[C] (lat/log are listed below)	8 fish	All Year

A. PAMLICO SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point on Point of Marsh in Carteret County at 35° 04.6166’N – 76° 27.8000’W, then running northeasterly to a point at Bluff Point in Hyde County at 35° 19.7000’N – 76° 09.8500’W. In Core and Clubfoot creeks, the Highway 101 Bridge constitutes the boundary north of which flounder must be at least 14 inches total length.

B. ALBEMARLE SOUND - No person may possess flounder less than 14 inches total length taken from internal waters for recreational purposes west of a line beginning at a point 35° 57.3950’N – 76° 00.8166’W on Long Shoal Point; running easterly to a point 35° 56.7316’N – 75° 59.3000’ W near Marker “5” in Alligator River; running northeasterly along the Intracoastal Waterway to a point 36° 09.3033’N - 75° 53.4916’W near Marker “171” at the mouth of North River; running northwesterly to a point 36° 09.9093’N – 75° 54.6601’W on Camden Point.

C. BROWNS INLET-SOUTH – No person may possess flounder less than 14 inches total length in internal and Atlantic Ocean fishing waters for recreational purposes west and south of a line beginning at a point 34° 37.0000’N – 77° 15.000’W; running southeasterly to a point 34° 32.0000’N – 77° 10.0000’W.

Table 11. Projected summer flounder recreational landings (number in thousands) relative to targets, by state for 2010.

State	2010 Target	2010 Landings[a,b]	Overage (+%)/ Underage (-%) Relative to 2010 Target
MA	140	46	-67
RI	144	87	-40
CT	95	40	-57
NY	449	250	-44
NJ	997	597	-40
DE	80	76	-5
MD	75	27	-64
VA	426	264	-38
NC	143	86	-40

[a] Projected using proportion from 2009 MRFSS data and 2010 MRFSS wave 1-4 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 19, 2010).
[b] Because prior year proportions are used, for states with more restrictive seasons in 2010, landings will be overestimated, and for those with less restrictive measures landings will be underestimated.

Table 12. Summary of Federal management measures for the scup recreational fishery, 1997-2010.

Measure	1997	1998	1999	2000	2001	2002	2003	2004
Harvest Limit (m lb)	1.95	1.55	1.24	1.24	1.76	2.71	4.01	3.99
Landings (m lb)	1.20	0.88	1.89	5.44	4.26	3.62	8.48	4.24
Possession Limit	-	-	-	-	50	20	50	50
Size Limit (in TL)[b]	7	7	7	-	9	10	10	10
Open Season	1/1 - 12/31	1/1 - 12/31	1/1 - 12/31	1/1 - 12/31	8/15 - 10/31	7/1 - 10/2	1/1-2/28 and 7/1-11/30	1/1-2/28 and 9/7 - 11/30

Measure	2005	2006	2007	2008	2009	2010
Harvest Limit (m lb)	3.96	3.99	2.74	1.83	2.59	3.01
Landings (m lb)	2.54	2.95	3.65	4.04	2.94	5.74[a]
Possession Limit	50	50	50	15	15	10
Size Limit (in TL)[b]	10	10	10	10.5	10.5	10.5
Open Season	1/1-2/28 and 9/18-11/30	1/1-2/28 and 9/18-11/30	1/1-2/28 and 9/18-11/30	1/1-2/28 and 10/1-10/31	1/1-2/28 and 10/1-10/31	6/6 - 9/26

[a] Projected using proportion from 2009 MRFSS data and 2010 MRFSS wave 1-5 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 14, 2010).

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Table 13. Scup recreational management measures by state, 2008.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts (party/charter)	11.0	45 fish from May 15 - June 28; 10 fish from June 29 – Sept. 17	May 15 - Sept. 17
Massachusetts (private angler)	10.5	10 fish; private vessels with two or more persons are prohibited from possessing more than 20 fish per day	May 24 - Sept. 26
Rhode Island (party/charter)	11.0	10 fish from June 12 – Aug. 31; 45 fish from Sept. 1- Oct. 15	June 12 - Oct. 15
Rhode Island (private angler)	10.5	10 fish	May 24 - Sept. 26
Connecticut (party/charter)	11.0	10 fish from June 12 – Aug. 31; 45 fish from Sept. 1- Oct. 15	June 12 - Oct. 15
Connecticut (private angler)	10.5	10 fish	May 24 - Sept. 26
New York (party/charter)	11.0	10 fish from June 12 – Aug. 31; 45 fish from Sept. 1- Oct. 15	June 12 - Oct. 15
New York (private angler)	10.5	10 fish	May 24 - Sept. 26
New Jersey	9	50 fish	Jan 1 - Feb 28 and 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 14. Scup recreational management measures by state, 2009.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts (party/charter)	11	45 fish from May 15 to June 28; 10 fish from June 29 to September 17	May 15- Sept. 17
Massachusetts (private angler)	10.5	10 fish; private vessels with two or more persons aboard are prohibited from possessing more than 20 scup per day	May 24-Sept. 26
Rhode Island (party/charter)	11	10 fish June 12 to August 31; 45 fish September 1 to October 15	June 12-Oct. 15
Rhode Island (private angler)	10.5	10 fish	May 24-Sept. 26
Connecticut (party/charter)	11	10 fish June 12 to August 31; 45 fish September 1 to October 15	June 12-Oct. 15
Connecticut (private angler)	10.5	10 fish	May 24-Sept. 26
New York (party/charter)	11	10 fish June 12 to August 31; 45 fish September 1 to October 15	June 12-Oct. 15
New York (private angler)	10.5	10 fish	May 24-Sept. 26
New Jersey	9	50 fish	Jan 1 - Feb 28 and 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 15. Scup recreational management measures by state, 2010.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts (party/charter)	11	40 fish from May 15 to June 18; 10 fish from June 19 to Sept. 17	May 15- Sept. 17
Massachusetts (private angler)	10.5	10 fish; private vessels with five or more persons aboard are prohibited from possessing more than 50 scup per day	May 24-Sept. 26
Rhode Island (party/charter)	11	10 fish June 8 to Sept. 6; 40 fish Sept. 7 to Oct. 11	June 8-Oct. 11
Rhode Island (private angler)	10.5	10 fish	May 24-Sept. 26
Connecticut (party/charter)	11	10 fish June 8 to Sept. 6; 40 fish Sept. 7 to Oct. 11	June 8-Oct. 11
Connecticut (private angler)	10.5	10 fish	May 24-Sept. 26
New York (party/charter)	11	10 fish June 8 to Sept. 6; 40 fish Sept. 7 to Oct. 11	June 8-Oct. 11
New York (private angler)	10.5	10 fish	May 24-Sept. 26
New Jersey	9	50 fish	Jan. 1-Feb. 28 and 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 16. Summary of management measures for the black sea bass recreational fishery, 1996-2010.

Measure	1996	1997	1998	1999	2000	2001	2002
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	4.3
Possession Limit	-	-	-[a]	-[a]	-[a]	25	25
Size Limit (TL inches)	9	9	10	10	10	11	11.5
Open Season	1/1 - 12/31	1/1-12/31	1/1-7/30 and 8/16-12/31	1/1-12/31	1/1-12/31	1/1-2/28 and 5/10-12/31	1/1-12/31

Measure	2003	2004	2005	2006	2007	2008	2009	2010
Harvest Limit (m lb)	3.43	4.01	4.13	3.99	2.47	2.11	1.14	1.83
Landings (m lb)	3.3	1.67	1.89	1.99	2.25	1.56	2.32	3.11[b]
Possession Limit	25	25	25	25	25	25	25	25
Size Limit (TL inches)	12	12	12	12	12	12	12.5	12.5
Open Season	1/1-9/1 and 9/16-11/30	1/1-9/7 and 9/22-11/30	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-10/5	5/22-10/11 and 11/1-12/31

[a] There was no Federal possession limit but some states implemented a 20 fish possession limit in these years
[b] Projected using proportion from 2009 MRFSS data and 2010 MRFSS wave 1-5 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, December 14, 2010).

Table 17. Black sea bass recreational management measures by state, 2008.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	12	20	All Year
Rhode Island	12	25	All Year
Connecticut	12	25	All Year
New York	12	25	All Year
New Jersey	12	25	All Year
Delaware	12	25	All Year
Maryland	12	25	All Year
PRFC	12	25	All Year
Virginia	12	25	All Year
North Carolina (North of Cape Hatteras)	12	25	All Year

Table 18. Black sea bass recreational management measures by state, 2009.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	12.5	20	All Year
Rhode Island	12.5	25	All Year
Connecticut	12.5	25	All Year
New York	12.5	25	All Year
New Jersey	12.5	25	All Year
Delaware	12.5	25	All Year
Maryland	12.5	25	All Year
PRFC	12.5	25	All Year
Virginia	12.5	25	All Year
North Carolina (North of Cape Hatteras)	12.5	25	All Year

Table 19. Black sea bass recreational management measures by state, 2010.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	12.5	20	May 22 - Oct. 11 and Nov. 1 - Dec. 31
Rhode Island	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
Connecticut	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
New York	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
New Jersey	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
Delaware	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
Maryland	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
PRFC	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
Virginia	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31
North Carolina (North of Cape Hatteras)	12.5	25	May 22 - Oct. 11 and Nov. 1 - Dec. 31

Table 20. The number of summer flounder landed from Maine through North Carolina by mode, 1981-2009.

	Mode		
Year	**Shore**	**Party/Charter**	**Private/Rental**
1981	3,145,685	1,362,253	5,058,634
1982	1,120,527	5,936,005	8,416,175
1983	3,963,678	3,574,224	13,458,399
1984	1,355,597	2,495,734	13,623,844
1985	786,186	1,152,247	9,127,757
1986	1,237,032	1,608,908	8,774,920
1987	406,094	1,150,095	6,308,572
1988	945,862	1,134,356	7,879,445
1989	180,268	141,318	1,395,174
1990	261,899	413,241	3,118,444
1991	565,402	597,609	4,904,635
1992	275,472	375,244	4,351,389
1993	342,226	1,013,463	5,138,354
1994	447,183	836,361	5,419,147
1995	241,904	267,348	2,816,468
1996	206,929	659,878	6,130,181
1997	255,063	930,635	5,981,122
1998	316,312	360,777	6,302,003
1999	213,444	300,807	3,592,740
2000	569,613	648,754	6,582,710
2001	226,994	329,701	4,736,914
2002	154,960	261,552	2,845,644
2003	203,719	389,140	3,965,814
2004	210,206	494,948	3,851,513
2005	146,151	476,906	3,413,162
2006	127,626	380,873	3,629,246
2007	161,378	401,901	2,830,461
2008	69,892	136,703	2,088,372
2009	69,018	191,376	1,649,936
% of Total	9	14	77

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division (October 19, 2010).

Table 21. The number of scup landed from Maine through North Carolina by mode, 1981-2009.

	Mode		
Year	**Shore**	**Party/Charter**	**Private/Rental**
1981	772,162	1,054,555	7,256,991
1982	833,428	1,393,723	4,226,957
1983	2,227,114	2,996,660	3,612,789
1984	1,299,566	227,734	4,530,010
1985	1,121,593	325,846	9,362,609
1986	1,898,860	3,228,151	19,696,031
1987	522,311	583,977	8,809,700
1988	698,340	1,137,625	4,226,344
1989	882,603	1,033,317	7,260,511
1990	434,740	1,302,788	6,305,462
1991	1,625,130	2,250,043	9,403,919
1992	1,003,650	1,017,368	5,743,161
1993	284,525	1,762,457	3,616,036
1994	229,924	918,217	3,122,099
1995	222,397	837,391	1,359,243
1996	120,597	451,613	2,399,997
1997	141,366	453,069	1,321,999
1998	117,057	164,931	929,148
1999	197,876	821,995	2,230,779
2000	550,526	1,140,133	5,552,865
2001	766,084	768,894	3,563,842
2002	505,078	1,309,167	1,832,595
2003	858,698	1,329,588	7,264,026
2004	467,262	671,626	3,559,209
2005	285,839	192,071	1,914,030
2006	307,548	497,441	1,995,920
2007	461,441	453,353	2,676,799
2008	622,423	566,409	2,485,503
2009	155,378	970,009	1,645,375
% of Total	11	16	73

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division (October 19, 2010).

Table 22. The number of black sea bass landed from Maine through North Carolina by mode, 1981-2009.

	Mode		
Year	**Shore**	**Party/Charter**	**Private/Rental**
1981	452,103	1,440,169	841,478
1982	81,445	8,104,204	2,063,334
1983	222,012	4,005,707	1,403,508
1984	98,227	1,128,294	1,264,897
1985	163,448	2,393,049	1,659,700
1986	1,021,525	16,695,387	4,187,084
1987	71,956	1,157,243	2,238,159
1988	140,754	1,691,300	2,227,901
1989	237,970	1,991,672	2,419,654
1990	289,378	2,268,915	1,710,455
1991	250,675	2,586,145	2,621,271
1992	45,369	2,043,190	1,780,224
1993	54,676	4,579,662	1,562,227
1994	243,347	2,005,883	1,321,629
1995	275,982	5,197,231	1,413,571
1996	70,523	2,631,733	1,062,027
1997	8,337	3,950,336	908,836
1998	7,073	777,874	474,069
1999	19,231	621,354	771,260
2000	177,489	1,797,702	1,780,240
2001	14,035	1,826,852	1,164,977
2002	16,618	2,066,232	1,338,448
2003	10,760	2,073,132	1,308,493
2004	5,153	1,033,545	971,472
2005	21,726	555,880	905,068
2006	24,289	701,764	889,290
2007	13,746	768,783	1,069,669
2008	24,163	444,424	688,069
2009	33,709	464,116	1,207,913
% of Total	3	62	35

Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division (October 19, 2010).

Table 23. State contribution (as a percentage) to total recreational landings of summer flounder, scup, and black sea bass (MRFSS Type A+B1 in number of fish), from Maine through North Carolina, 2009.

State	Summer Flounder	Scup	Black Sea Bass
Maine	0.00%	0.00%	0.00%
New Hampshire	0.00%	0.00%	0.00%
Massachusetts	2.53%	27.87%	18.28%
Rhode Island	2.68%	6.19%	1.89%
Connecticut	3.23%	8.26%	0.02%
New York	13.85%	47.34%	26.62%
New Jersey	53.02%	10.12%	35.66%
Delaware	4.82%	0.03%	2.96%
Maryland	4.69%	0.00%	1.78%
Virginia	12.14%	0.08%	6.00%
North Carolina	3.04%	0.10%	6.78%
Total	**100%**	**100%**	**100%**

Table 24. The percentage (%) contribution of summer flounder to the total catch of all species from party/charter vessels by state, 1998-2009.

State	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
CT	1.6	2.3	2.2	1.4	4.7	4.5	2.9	2.6	4.4	3.0	1.6	0.9
DE	5.8	6.4	18.9	8.4	2.8	1.0	1.9	7.5	5.3	6.5	6.7	14.4
MA	0.7	0.4	0.3	0.4	0.2	0.3	0.3	0.3	0.7	0.6	0.2	0.1
MD	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.9	0.8	3.0	2.4	6.1
ME	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.7	0.9	1.0	0.0	0.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0
NH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
NJ	15.4	15.0	11.4	9.2	8.5	9.1	9.4	11.4	9.8	11.5	10.1	15.8
NY	27.8	39.1	27.3	13.1	14.2	13.7	20.4	25.0	12.6	16.5	23.8	24.3
RI	4.4	16.0	26.2	7.2	15.1	16.5	19.3	24.0	23.5	27.1	23.2	24.8
VA	2.5	2.2	2.6	3.7	4.3	1.8	5.5	2.0	4.1	2.5	4.6	4.0

Note: Percentages cannot be summed across columns or rows. They only represent the percentage of respective species landings to total landings in that state for given year.

Table 25. The percentage (%) contribution of scup to the total catch of all species from party/charter vessels by state, 1998 - 2009.

State	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CT	0.9	0.4	15.1	13.4	8.3	14.6	7.4	5.3	16.1	22.0	6.8	46.1
DE	0.0	0.0	0.1	0.0	0.5	0.9	0.8	0.1	0.9	0.4	0.4	0.2
MA	17.9	27.1	32.2	24.3	28.7	24.4	36.9	11.5	21.6	39.9	32.7	38.6
MD	0.1	1.1	0.1	0.0	0.1	0.1	0.1	0.0	0.3	2.9	0.1	0.2
ME	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	1.6	1.3	1.3	0.0	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
NH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NJ	8.4	8.8	9.5	10.6	7.0	12.7	4.1	5.7	4.5	5.4	3.6	3.0
NY	25.7	16.6	29.0	48.4	36.8	49.2	28.4	26.7	29.2	30.4	19.2	14.2
RI	5.7	14.1	17.6	32.4	29.2	25.4	18.6	9.8	22.6	11.8	16.6	4.1
VA	0.2	0.1	0.0	0.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Percentages cannot be summed across columns or rows. They only represent the percentage of respective species landings to total landings in that state for given year.

Table 26. The percentage (%) contribution of black sea bass to the total catch of all species from party/charter vessels by state, 1998 - 2009.

State	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
CT	0.0	0.2	1.0	0.8	1.6	1.1	0.4	0.1	0.7	0.7	3.2	0.7
DE	11.7	24.9	18.9	61.5	85.1	87.5	77.6	36.9	40.9	30.6	37.2	39.1
MA	1.5	2.9	5.5	4.0	4.0	4.1	2.6	0.8	1.9	5.8	6.1	6.9
MD	59.1	39.0	66.4	84.9	95.3	94.1	87.2	85.6	83.4	70.3	80.9	83.4
ME	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
NC	43.1	39.0	37.3	52.5	64.0	36.2	28.1	9.6	23.5	35.4	20.3	0.0
NH	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NJ	23.7	27.7	36.9	41.4	44.6	52.5	40.6	29.4	29.0	33.0	41.8	40.8
NY	14.8	16.6	19.4	20.6	23.6	18.1	16.8	11.9	20.4	21.5	24.1	27.7
RI	0.6	3.9	8.5	13.3	15.8	12.5	10.6	6.3	9.6	11.6	9.7	8.3
VA	36.1	42.7	20.7	29.9	49.6	54.3	30.9	16.7	17.2	17.7	19.8	11.8

Note: Percentages cannot be summed across columns or rows. They only represent the percentage of respective species landings to total landings in that state for given year.

Table 27. Demographic Characteristics of Marine Anglers in the Northeast U.S.

	% of fishing participants	% of non-participants
Sex		
Male	77.2	38.7
Female	23.7	61.3
Ethnicity		
Spanish/Hispanic/Latino	5.9	10.7
Non Spanish/Hispanic/Latino	95.1	89.3
Race		
White	90.7	78.2
Black, African American	5.5	13.9
American Indian/Alaska Native	1.3	1.8
Asian	<1	4.2
Native Hawaiian/Pacific Islander	<1	<1
Some other race	<1	<1
Two or more races	1.1	1.5
Household Income		
Under $15,000	2.6	7.1
$15,000 to $34,999	10.6	18.9
$35,000 to $49,999	16.2	19.5
$50,000 to $74,999	22.6	20.1
$75,000 to $99,999	18.2	14.9
$100,000 to $149,999	18.1	12.7
Over $150,000	11.6	6.8
Education		
Less than high school	7.6	10.0
High school graduate	26.4	28.1
Some college, no degree	16.4	13.5
Associate degree	9.7	8.2
Bachelor degree	23.2	22.0
Graduate or professional degree	16.8	16.2
Age		
15 to 24	7.8	11.3
25 to 34	12.2	14.4
35 to 44	23.1	18.9
45 to 54	26.9	19.6
55 to 64	17.9	14.7
65 to 74	8.9	10.3
Over 75	3.2	10.7

Source: Steinback et al., 1999.

Table 28. Purpose of Marine Recreational Fishing in the Northeast

	Percent	Number of anglers in 2005 (thousands)
Purpose of recreational fishing trips		
All for food or income	2.1	92.4
Mostly for food or income	<1.0	34.3
Both for recreation and for food or income	11.7	514.8
Mostly for recreation	13.2	580.8
All for recreation	72.2	3,176.8

Source: Steinback et al., 2009.

Table 29. Party and charter vessel trip report (VTR) data for summer flounder, scup, and black sea bass, 1996-2009.

Summer Flounder

	Number of Vessels		Number of Trips		Mean Number of Anglers		Numbers of Fish Caught		Mean Effort (catch per angler)	
Year	Party	Charter	Party	Charter	Party	Charter	Party	Charter	Party	Charter
1996	111	189	5,544	2,087	28	13	621,643	99,796	4.1	3.8
1997	108	184	5,885	2,365	29	14	551,588	117,339	3.2	3.6
1998	106	185	6,432	2,849	29	13	573,681	132,880	3.0	3.7
1999	119	193	6,226	2,749	29	13	741,977	156,809	4.1	4.3
2000	133	224	5,915	3,431	30	11	557,952	162,256	3.1	4.1
2001	114	224	5,336	2,712	30	11	314,804	126,278	2.0	4.2
2002	103	234	4,605	2,875	32	10	308,068	99,155	2.1	3.3
2003	105	238	5,132	2,892	29	11	313,580	108,044	2.1	3.4
2004	89	215	4,368	2,584	28	11	258,402	81,857	2.2	2.9
2005	75	230	3,797	2,699	29	11	245,287	103,436	2.2	3.5
2006	83	270	3,345	2,821	28	11	171,314	96,385	1.8	3.2
2007	94	279	3,818	3,260	29	10	241,405	112,725	2.2	3.3
2008	100	251	3,613	2,595	28	10	229,236	103,963	2.3	4.2
2009	80	183	3,563	1,908	26	14	203,259	83,168	2.2	3.1

Scup

	Number of Vessels		Number of Trips		Mean Number of Anglers		Numbers of Fish Caught		Mean Effort (catch per angler)	
Year	Party	Charter	Party	Charter	Party	Charter	Party	Charter	Party	Charter
1996	66	88	1,366	363	26	9	323,531	41,522	9.5	13.6
1997	57	59	1,167	278	26	7	256,134	38,801	8.4	20.3
1998	61	79	1,542	345	26	7	554,004	48,489	14.0	20.8
1999	62	84	1,535	468	26	7	509,529	80,382	12.6	25.4
2000	79	113	1,819	804	28	8	709,285	127,768	14.0	18.7
2001	67	120	2,221	1,028	29	7	1,027,083	123,188	16.0	16.3
2002	77	136	2,015	997	28	9	647,920	95,064	11.6	10.7
2003	78	152	2,493	1,320	27	8	928,210	138,785	13.6	12.9
2004	63	127	1,724	1,064	26	7	430,843	46,367	9.6	6.3
2005	47	109	1,185	835	26	8	224,028	35,456	7.3	5.5
2006	63	145	1,491	1,057	26	7	344,659	40,061	8.9	5.4
2007	69	154	1,947	1,394	28	7	456,935	61,192	8.5	6.3
2008	70	135	1,413	992	27	7	299,883	43,329	7.8	6.5
2009	49	100	1,194	571	26	7	207,390	32,565	6.6	7.7

Black Sea Bass

	Number of Vessels		Number of Trips		Mean Number of Anglers		Numbers of Fish Caught		Mean Effort (catch per angler)	
Year	Party	Charter	Party	Charter	Party	Charter	Party	Charter	Party	Charter
1996	111	189	3,776	1,301	26	10	1,259,278	113,325	13.1	8.5
1997	108	184	3,891	1,175	27	12	876,505	131,990	8.3	9.4
1998	106	185	4,016	1,148	26	10	870,936	65,589	8.3	6.0
1999	119	193	4,025	1,425	28	10	1,172,507	131,756	10.5	9.0
2000	133	224	4,825	2,166	29	11	1,385,621	219,544	9.9	9.4
2001	114	224	5,018	2,403	30	9	1,532,305	225,986	10.3	10.3
2002	103	234	4,939	2,513	30	10	1,644,342	269,668	11.1	10.6
2003	105	238	4,929	2,766	28	10	1,488,510	316,100	10.8	12.2
2004	89	215	4,077	2,119	27	9	910,727	158,719	8.4	8.5
2005	75	230	2,997	2,022	28	9	602,759	112,143	7.2	6.1
2006	83	270	3,464	2,515	27	8	592,584	139,616	6.3	6.6
2007	94	279	4,409	2,966	28	9	697,076	145,557	5.6	5.8
2008	100	251	4,292	2,579	27	8	626,409	152,596	5.5	7.3
2009	80	183	3,052	1,594	26	9	452,219	112,362	5.6	8.2

Note: Trips with zero anglers or catch were deleted from all fields.

Table 30. Percentage of 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. These area information are self-reported based on the area where the majority of fishing activity occurred per angler trip.

	Summer Flounder		Scup		Black Sea Bass	
Year	**State <= 3 mi**	**EEZ > 3 mi**	**State <= 3 mi**	**EEZ > 3 mi**	**State <= 3 mi**	**EEZ > 3 mi**
2000	88.76%	11.24%	91.70%	8.30%	33.86%	66.14%
2001	92.33%	7.67%	93.51%	6.49%	19.44%	80.56%
2002	89.40%	10.60%	91.57%	8.43%	21.49%	78.51%
2003	91.66%	8.34%	95.21%	4.79%	22.15%	77.85%
2004	91.41%	8.59%	91.84%	8.16%	21.47%	78.53%
2005	81.89%	18.11%	97.57%	2.43%	29.81%	70.19%
2006	90.68%	9.32%	94.41%	5.59%	30.93%	69.07%
2007	90.02%	9.98%	97.94%	2.06%	29.68%	70.32%
2008	97.64%	2.36%	95.57%	4.43%	55.71%	44.29%
2009	88.08%	11.92%	97.97%	2.03%	61.81%	38.19%
Avg.	90.05%	9.95%	94.31%	5.69%	29.76%	70.24%

Table 31. Projected[1] total estimated angler effort (fishing trips) by state, in 2010.

State	Party/Charter	Private/Rental	Shore
ME	24,174	339,766	389,088
NH	58,111	94,150	98,518
MA	180,697	2,364,858	1,281,364
RI	43,195	482,268	660,042
CT	44,159	858,300	546,321
NY	300,198	2,561,976	1,706,240
NJ	350,945	3,249,449	2,385,113
DE	18,411	391,322	406,196
MD	160,453	1,615,950	1,299,675
VA	34,634	1,800,283	853,794
NC	219,992	2,293,161	3,547,309
Total	1,434,969	16,051,481	13,173,659

[1] Values were projected using MRFSS data.
Source: Scott Steinback, NMFS/NER/NEFSC.

Table 32. Projected 2011 effort effects of individual management measures in isolation, by mode (2010 catch and effort estimates were used to project 2011 effects).

	Party/Charter			Private/Rental			Shore		
	Affected Trips	Total Trips	% of Total Trips	Affected Trips	Total Trips	% of Total Trips	Affected Trips	Total Trips	% of Total Trips
Fluke Alternative 1 (status quo)									
Conservation Equivalency	?	1,434,969	?	?	16,051,481	?	?	13,173,659	?
Fluke precautionary default measures	12,293	1,434,969	0.86	140,247	16,051,481	0.87	5,969	13,173,659	0.05
Fluke Alternative 2	11,376	1,434,969	0.79	129,119	16,051,481	0.80	5,860	13,173,659	0.04
Scup Alternative 1 (status quo)	26,610	1,434,969	1.85	125,905	16,051,481	0.80	10,681	13,173,659	0.08
Scup Alternative 2	81,912	1,434,969	5.71	508,592	16,051,481	3.20	100,561	13,173,659	0.80
Scup Alternative 3	26,244	1,434,969	1.83	82,839	16,051,481	0.52	3,929	13,173,659	0.03
BSB Alternative 1	49,562	1,434,969	3.45	104,526	16,051,481	0.70	3,222	13,173,659	0.02
BSB Alternative 2 (status quo)	10,877	1,434,969	0.76	19,766	16,051,481	0.12	9	13,173,659	0.0001
BSB Alternative 3	5,351	1,434,969	0.37	2,008	16,051,481	0.01	9	13,173,659	0.0001

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 33. The percent of successful anglers landing 1 to 10 summer flounder (MRFSS Type A fish) per trip, waves 1-4, 2010.

Catch per Angler/Trip	Frequency	Percent	Cumulative Frequency	Cumulative Percent
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 34. The percent of successful anglers landing 1 to 30 summer flounder (MRFSS Type A fish) per trip, 1992.

Catch per Angler/Trip	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 35. The percent of measured summer flounder (MRFSS Type A fish) less than 15 inch TL (1999), 15.5 inch TL (2000), and state specific size limits (2001 through 2010). The number in parentheses is sample size (N).

State	1999		2000		2001			2002			2003		
	% Below Size Limit	Number Measured	% Below Size Limit	Number Measured	% Below Size Limit	Number Measured	Size Limit	% 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	20.8	(53)	16.5	15.6	(45)	16.5
RI	11.9	(160)	18.1	(282)	14.8	(196)	17.5	11.8	(228)	18.0	8.4	(250)	17.5
CT	15.5	(258)	2.9	(379)	3.1	(129)	17.5	5.8	(69)	17.0	7.8	(179)	17.0
NY	5.9	(272)	5.5	(325)	5.8	(274)	17.0	6.9	(246)	17.0	6.2	(482)	17.0
NJ	4.1	(635)	9.8	(705)	14.7	(1169)	16.0	6.1	(540)	16.5	6.4	(934)	16.5
DE	19	(216)	5.2	(249)	9.2	(325)	17.5	7.5	(267)	17.5	10.9	(266)	17.5
MD	3.8	(263)	9.1	(243)	4.0	(101)	17.0	5.2	(77)	17.0	5.0	(20)	17.0
VA	0.5	(183)	4.4	(386)	3.9	(1094)	15.5	24.6	(884)	17.5	14.6	(513)	17.5
NC	59.4	(544)	56.0	(703)	66.6	(915)	15.5	75.7	(474)	15.5	57.5	(73)	15.0
Coast	18.9	(2555)	17.1	(3316)	17.2	(4229)	15.5	-	(2838)	-	13.2	(2763)	17.0

State	2004			2005			2006			2007		
	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	-	-	(1)	-	-	-	-
MA	6.7	(30)	16.5	15.2	(46)	17.0	9.8	(102)	17.5	16.9	(71)	17.5
RI	7.0	(503)	17.5	6.2	(401)	17.5	8.8	(352)	17.5	10.0	(389)	19.0
CT	5.8	(174)	17.0	2.8	(104)	17.5	10.1	(69)	18.0	1.5	(66)	18.0
NY	3.4	(381)	17.0	4.8	(581)	17.5	13.6	(403)	18.0	13.3	(330)	19.5
NJ	2.5	(756)	16.5	2.8	(645)	16.5	6.7	(421)	16.5	6.8	(542)	17.0
DE	12.4	(193)	17.5	9.8	(367)	17.5	8.5	(224)	17.0	6.6	(244)	18.0
MD	9.1	(55)	16.0	1.9	(104)	15.5/ 15.0 [a]	0.0	(51)	15.5/ 15.0 [a]	8.1	(37)	15.5/ 15.0 [a]
VA	8.1	(334)	17.0	7.1	(294)	16.5	5.0	(300)	16.5	6.9	(476)	18.5
NC	1.6	(186)	14.0	5.4	(205)	14.0	3.7	(243)	14.0	2.9	(238)	14.0/ 14.5[b]
Coast	15.0	(2612)	17.0	15.4	(2747)	17.0	19.3	(2166)	17.0	22.2	(2393)	18.0

[a] For Maryland, Atlantic/Coastal Bay and Chesapeake Bay; respectively; % below given in table is below lowest size limit given.
[b]For North Carolina, Internal waters and External waters, respectively; % below given in table is below lowest size limit given.

Table 35 Continued. The percent of measured summer flounder (MRFSS Type A fish) less than 15 inch TL (1999), 15.5 inch TL (2000), and state specific size limits (2001 through 2010). The number in parentheses is sample size (N).

State	2008			2009			2010[c]		
	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	-	-	-
NH	-	(5)	-	-	-	-	-	-	-
MA	4.2	(48)	17.5	36.4	(11)	18.5	25.8	(31)	18.5
RI	14.2	(542)	20.0	12.2	(98)	21.0	1.4	(70)	19.5
CT	7.1	(28)	19.5	7.1	(14)	19.5	3.6	(28)	19.5
NY	8.8	(250)	20.5	5.5	(127)	21.0	23.4	(124)	21.0
NJ	14.7	(307)	18.0	9.0	(370)	18.0	4.9	(246)	18.0
DE	12.9	(93)	19.5	10.6	(433)	18.5	8.4	(202)	18.5
MD	2.7	(75)	17.5/ 15.0[a]	3.0	(66)	18.0/ 16.5[a]	1.9	(52)	19.0
VA	7.4	(271)	19.0	8.8	(194)	19.0	11.3	(124)	18.5
NC	3.3	(91)	14.0/ 15.5[b]	1.0	(166)	14.0/ 15.0[b]	1.0	(160)	14.0/ 15.0[b]
Coast	10.4	(1710)	18.0	13.9	(1479)	18.0	18.1	(1037)	18.0

[a] For Maryland, Atlantic/Coastal Bay and Chesapeake Bay; respectively; % below given in table is below lowest size limit given.
[b]For North Carolina, Internal waters and External waters, respectively; % below given in table is below lowest size limit given.
[c]Only includes wave 1-4 MRFSS data

Table 36. Percent of summer flounder landings for each wave, 1994-1998.

State	Wave **1** (Jan-Feb)	**2** (Mar-Apr)	**3** (May-June)	**4** (July-Aug)	**5** (Sept-Oct)	**6** (Nov-Dec)
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 37. The percent of measured scup (MRFSS Type A fish) relative to state specific and coastal size limits from 2002 through 2010. The number in parentheses is sample size.

	2002			2003			2004		
State	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	-	-	-	-
MA	0.8	(279)	9.0	1.0	(715)	9.0	2.1	(579)	10.0
RI	9.0	(435)	10.0	2.2	(313)	10.0	5.4	(138)	10.5
CT	1.3	(152)	10.0	1.1	(362)	10.0	12.3	(96)	10.5
NY	7.5	(94)	10.0	0	(969)	10.0	0	(220)	11.0
NJ	4.6	(44)	10.0	6.9	(29)	10.0	20.0	(5)	10.0
DE	0	(1)	8.0	33.3	(6)	8.0	0	(0)	8.0
MD	0	(1)	8.0	0	(0)	8.0	0	(0)	8.0
VA	0	(0)	8.0	0	(3)	8.0	0	(0)	8.0
NC	0	(0)	8.0	0	(0)	8.0	0	(3)	8.0
Coast	6.1	(1006)	10.0	7.0	(2397)	10.0	6.44	(1041)	10.0

	2005			2006			2007 [a]			2008 [a]		
State	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	-	-	-	-	-	-
NH	-	-	-	-	-	-	-	-	-	-	-	-
MA	32.4	(657)	10.5	41.5	(719)	10.5	28.2	(974)	10.5	19.9	(1184)	10.5
RI	32.0	(442)	10.5	34.2	(743)	10.5	50.8	(63)	10.5	20.8	(265)	10.5
CT	18.8	(80)	10.5	32.6	(141)	10.5	13.6	(22)	10.5	13.6	(118)	10.5
NY	11.4	(562)	10.5	42.2	(294)	10.5	17.7	(141)	10.5	25.4	(418)	10.5
NJ	11.1	(27)	9	33.9	(192)	9	5.0	(20)	9	19.2	(151)	9
DE	25.0	(4)	8	66.7	(3)	8	0	(5)	8	0.1	(15)	8
MD	0	(0)	8	10.0	(10)	8	0	(2)	8	0	(6)	8
VA	0	(2)	8	0	(0)	8	0	(0)	8	60.0	(5)	8
NC	56.2	(73)	8	18.6	(113)	8	37.8	(37)	8	5.7	(53)	8
Coast	15.4	(1847)	10.0	27.3	(2215)	10.0	19.1	(1264)	10.0	12.0	(2215)	10.0

	2009 [a]			2010 [a,b]			2011		
State	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit	% Below Size Limit	Number Measured	Size Limit
ME	-	-	-	-	-	-	NA	NA	NA
NH	-	-	-	-	-	-	NA	NA	NA
MA	21.4	(1093)	10.5	8.8	(731)	10.5	NA	NA	NA
RI	2.8	(496)	10.5	6.2	(80)	10.5	NA	NA	NA
CT	12.2	(115)	10.5	16.9	(142)	10.5	NA	NA	NA
NY	7.6	(369)	10.5	12.4	(364)	10.5	NA	NA	NA
NJ	6.3	(142)	9	0	(2)	9	NA	NA	NA
DE	25.0	(4)	8	0	(0)	8	NA	NA	NA
MD	0	(0)	8	0	(0)	8	NA	NA	NA
VA	66.7	(3)	8	100.0	(1)	8	NA	NA	NA
NC	44.1	(34)	8	21.9	(32)	8	NA	NA	NA
Coast	7.8	(2257)	10.0	11.6	(1352)	10.5	NA	NA	NA

[a] For MA, RI, CT, and NY, minimum size varied from 10.5 – 11.0 inch TL by mode and season.
[b] 2010 MRFSS wave 1-4 data (Source: Pers. Comm. with the National Marine Fisheries Service, Fisheries Statistics Division, October 19, 2010).

Table 38. The effect of various size and possession limits on 2010 scup recreational landings. The tables contain the proportional reduction in number of scup landed assuming regulations are 100% effective. Note: Reduction is calculated as the difference between the values associated with the current regulations and those being evaluated.

Bag	10.5	11	11.5	12.0	12.5	13.0	13.5	14	14.5
1	0.8232	0.8558	0.8936	0.9154	0.9427	0.9570	0.9681	0.9769	0.9777
2	0.7170	0.7844	0.8351	0.8737	0.9116	0.9327	0.9465	0.9660	0.9673
3	0.6414	0.7320	0.7929	0.8465	0.8933	0.9170	0.9334	0.9554	0.9591
4	0.5884	0.6928	0.7583	0.8276	0.8778	0.9044	0.9210	0.9454	0.9515
5	0.5622	0.6675	0.7394	0.8150	0.8664	0.8954	0.9122	0.9389	0.9474
6	0.5419	0.6501	0.7279	0.8050	0.8595	0.8910	0.9079	0.9348	0.9433
7	0.5282	0.6372	0.7211	0.7996	0.8568	0.8907	0.9076	0.9347	0.9433
8	0.5152	0.6252	0.7147	0.7944	0.8543	0.8905	0.9073	0.9346	0.9433
9	0.5049	0.6180	0.7108	0.7916	0.8519	0.8902	0.9071	0.9346	0.9433
10	0.4968	0.6131	0.7070	0.7888	0.8494	0.8899	0.9068	0.9346	0.9433
15	0.4757	0.6042	0.7025	0.7870	0.8482	0.8891	0.9066	0.9346	0.9433
20	0.4663	0.6000	0.7006	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
25	0.4602	0.5973	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
30	0.4565	0.5963	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
35	0.4538	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
40	0.4529	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433
45	0.4528	0.5962	0.6997	0.7864	0.8477	0.8890	0.9066	0.9346	0.9433

Table 39. The percent of successful anglers landing 1 to 51 scup (MRFSS Type A fish) per trip, waves 1-4, 2010.

Catch per Angler/Trip	Frequency	Percent	Cumulative Frequency	Cumulative Percent
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Table 40. The percent of successful anglers landing 1 to 72 scup (MRFSS Type A fish) per trip, waves 1-4, 2009.

Catch per Angler/Trip	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	68	28.94	70	29.79

2	47	20.00	117	49.79
3	22	9.36	139	59.15
4	8	3.40	147	62.55
5	4	1.70	151	64.26
6	4	1.70	155	65.96
7	5	2.13	160	68.09
8	5	2.13	165	70.21
9	7	2.98	172	73.19
10	9	3.83	181	77.02
11	2	0.85	183	77.87
14	1	0.43	184	78.30
15	1	0.43	185	78.72
16	2	0.85	187	79.57
19	1	0.43	188	80.00
20	3	1.28	191	81.28
21	1	0.43	192	81.70
22	1	0.43	193	82.13
23	1	0.43	194	82.55
24	2	0.85	196	83.40
25	1	0.43	197	83.83
26	2	0.85	199	84.68
27	2	0.85	201	85.53
28	2	0.85	203	86.38
29	1	0.43	204	86.81
30	1	0.43	205	87.23
31	2	0.85	207	88.09
32	1	0.43	208	88.51
33	2	0.85	210	89.36
35	3	1.28	213	90.64
36	1	0.43	214	91.06
38	1	0.43	215	91.49
39	1	0.43	216	91.91
40	1	0.43	217	92.34
41	3	1.28	220	93.62
42	1	0.43	221	94.04
44	1	0.43	222	94.47
45	7	2.98	229	97.45
47	1	0.43	230	97.87
48	1	0.43	231	98.30
51	1	0.43	232	98.72
52	1	0.43	233	99.15
68	1	0.43	234	99.57
72	1	0.43	235	100.00

Table 41. The percent of successful anglers landing 1 to 40 black sea bass (MRFSS Type A fish) per trip, waves 1-4, 2010.

Catch per Angler/Trip	Frequency	Percent	Cumulative Frequency	Cumulative Percent

Table 42. The percent of successful anglers landing 1 to 25 black sea bass (MRFSS Type A fish) per trip, waves 1-4, 2009.

Catch per Angler/Trip	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	245	47.85	267	52.15
2	116	22.66	383	74.80
3	39	7.62	422	82.42
4	25	4.88	447	87.30

5	16	3.13	463	90.43
6	9	1.76	472	92.19
7	5	0.98	477	93.16
8	2	0.39	479	93.55
9	8	1.56	487	95.12
10	7	1.37	494	96.48
11	3	0.59	497	97.07
13	2	0.39	499	97.46
14	2	0.39	501	97.85
15	3	0.59	504	98.44
17	1	0.20	505	98.63
19	1	0.20	506	98.83
21	1	0.20	507	99.02
22	1	0.20	508	99.22
24	1	0.20	509	99.41
25	3	0.59	512	100.00

Table 43. Measured of measured black sea bass (MRFSS Type A fish) less than 10 inches TL (1998-1999), 11 inches (2000-2001), 11.5 inches (2002), 12 inches (2003-2008), and 12.5 inches (2009-2010) by state and year.

State	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ME	-	-	-	-	-	-	-	-	-	-	-	-	-
NH	-	-	0	7.1	-	-	-	-	-	-	-	-	-
MA	0	-	44.4	0	0	4.6	1.7	2.5	5.8	10.7	6.1	6.1	4.5
RI	15.6	2.9	17.4	2.7	9.8	1.8	2.3	1.3	2.9	8.1	1.0	17.7	1.8
CT	0	0	0	0	9.1	9.1	12.5	0	0	0	100.0	100.0	28.6
NY	0	37.9	42.2	4.4	4.8	11.3	4.8	9.7	18.4	17.8	9.4	27.8	10.6
NJ	8.4	3.1	47.0	2.5	2.6	2.7	0.3	0.9	6.8	3.4	13.0	7.2	11.7
DE	8.5	4.8	26.1	9.8	13.8	9.4	11.2	17.1	8.4	2.1	26.0	22.5	15.6
MD	10.0	3.0	37.2	6.4	1.8	3.5	2.2	10.1	6.3	6.5	9.5	18.7	9.5
VA	18.9	15.3	9.3	6.3	8.0	9.8	11.2	33.1	24.2	10.1	30.7	37.3	-
NC[a]	33.5	17.4	31.7	22.5	12.1	46.0	59.0	62.4	56.6	44.4	3.7	25.3	23.4
Coast	18.4	13.1	25.6	8.2	9.0	8.1	17.5	25.3	19.2	14.4	10.9	17.1	14.4

[a]All of NC, both North and South of Hatteras.

Table 44. Projected 2011 effort effects of combined management measures, by mode (2010 catch and effort estimates were used to project 2011 effects).

	Party/Charter			Private/Rental			Shore		
	Affected Trips	**Total Trips**	**% of Total Trips**	**Affected Trips**	**Total Trips**	**% of Total Trips**	**Affected Trips**	**Total Trips**	**% of Total Trips**
Fluke precautionary default measures, Scup Alt1, BSB Alt1	88,464	1,434,969	6.16	370,678	16,051,481	2.31	19,872	13,173,659	0.15
Fluke precautionary default measures, Scup Alt1, BSB Alt2	49,780	1,434,969	3.47	285,918	16,051,481	1.78	131,883	13,173,659	1.00
Fluke precautionary default measures, Scup Alt1, BSB Alt3	44,253	1,434,969	3.08	257,032	16,051,481	1.60	16,659	13,173,659	0.13
Fluke precautionary default measures, Scup Alt2, BSB Alt1	143,766	1,434,969	10.02	753,365	16,051,481	4.69	109,753	13,173,659	0.83
Fluke precautionary default measures, Scup Alt2, BSB Alt2	105,082	1,434,969	7.32	668,605	16,051,481	4.17	106,539	13,173,659	0.81
Fluke precautionary default measures, Scup Alt2, BSB Alt3	99,555	1,434,969	6.94	650,847	16,051,481	4.05	106,539	13,173,659	0.81
Fluke precautionary default measures, Scup Alt3, BSB Alt1	88,099	1,434,969	6.14	327,612	16,051,481	2.04	13,120	13,173,659	0.10
Fluke precautionary default measures, Scup Alt3, BSB Alt2	49,414	1,434,969	3.44	242,852	16,051,481	1.51	9,907	13,173,659	0.08
Fluke precautionary default measures, Scup Alt3, BSB Alt3	43,887	1,434,969	3.06	225,094	16,051,481	1.40	9,907	13,173,659	0.08
Fluke Alt2, Scup Alt1, BSB Alt1	87,548	1,434,969	6.10	359,550	16,051,481	2.24	19,763	13,173,659	0.15
Fluke Alt2, Scup Alt1, BSB Alt2	48,864	1,434,969	3.41	274,790	16,051,481	1.71	16,549	13,173,659	0.13
Fluke Alt2, Scup Alt1, BSB Alt3	43,337	1,434,969	3.02	257,032	16,051,481	1.60	16,549	13,173,659	0.13
Fluke Alt2, Scup Alt2, BSB Alt1	142,850	1,434,969	9.95	742,237	16,051,481	4.62	109,643	13,173,659	0.83
Fluke Alt2, Scup Alt2, BSB Alt2	104,166	1,434,969	7.26	657,477	16,051,481	4.10	106,430	13,173,659	0.81
Fluke Alt2, Scup Alt2, BSB Alt3	98,639	1,434,969	6.87	639,719	16,051,481	3.99	106,430	13,173,659	0.81
Fluke Alt2, Scup Alt3, BSB Alt1	87,182	1,434,969	6.08	316,484	16,051,481	1.97	13,011	13,173,659	0.10
Fluke Alt2, Scup Alt3, BSB Alt2	48,498	1,434,969	3.38	231,724	16,051,481	1.44	9,797	13,173,659	0.07
Fluke Alt2, Scup Alt3, BSB Alt3	42,971	1,434,969	2.99	213,966	16,051,481	1.33	9,797	13,173,659	0.07

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 45. Average daily trip expenditures by recreational fishermen in the Northeast region by mode, in 2006.

Expenditures	$		
	Party/Charter	Private/Rental	Shore
Private transportation	13.88	11.03	12.94
Public transportation	0.26	0.07	0.40
Auto rental	0.27	0.02	0.10
Food from grocery stores	7.40	4.92	7.33
Food from restaurants	8.70	3.42	9.28
Lodging	10.0	2.64	14.90
Boat fuel	0	9.54	0
Boat or equipment rental	0.05	0.19	0.03
Charter fees	57.76	0	0
Charter crew tips	3.0	0	0
Catch processing	0.02	0	0
Access and parking	0.44	1.11	1.32
Bait	0.31	3.42	3.25
Ice	0.39	0.59	0.39
Tackle used on trip	1.87	2.04	3.98
Tournament fees	1.10	0.04	0.02
Gifts and souvenirs	1.67	0.10	1.45
Total	107.13	39.14	55.39

Table 46. Regional economic losses of combined management measures assuming a 10% reduction in the number of affected trips (2011 $'s).

	Party/Charter			Private/Rental			Shore			Total		
	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs
Combination 1[a]	1,713	582	25	1,983	649	2	173	59	46	3,869	1,289	73
Combination 2[b]	964	327	19	1,529	500	15	1,149	392	45	3,643	1,219	79
Combination 3[c]	857	291	17	1,375	450	2	145	50	29	2,377	790	48
Combination 4[d]	2,784	945	50	4,030	1,318	12	957	326	94	7,770	2,589	156
Combination 5[e]	2,035	691	44	3,576	1,170	12	929	317	79	6,540	2,177	136
Combination 6[f]	1,928	654	43	3,481	1,139	12	929	317	77	6,338	2,110	132
Combination 7[g]	1,706	579	22	1,752	573	1	114	39	42	3,573	1,191	66
Combination 8[h]	957	325	16	1,299	425	1	86	29	28	2,342	779	45
Combination 9[i]	850	288	15	1,204	394	1	86	29	26	2,140	712	42
Combination 10[j]	1,695	576	24	1,923	629	2	172	59	45	3,791	1,263	71
Combination 11[k]	946	321	18	1,470	481	2	144	49	31	2,560	851	51
Combination 12[l]	839	285	17	1,375	450	2	144	49	28	2,358	784	47
Combination 13[m]	2,766	939	49	3,970	1,299	12	956	326	93	7,692	2,564	154
Combination 14[n]	2,017	685	44	3,517	1,150	12	928	316	78	6,461	2,151	134
Combination 15[o]	1,910	648	42	3,422	1,119	12	928	316	76	6,259	2,084	131
Combination 16[p]	1,688	573	21	1,693	554	1	113	39	41	3,494	1,165	64
Combination 17[q]	939	319	15	1,239	405	1	85	29	27	2,264	753	44
Combination 18[r]	832	282	14	1,144	374	1	85	29	25	2,062	686	40

[a]Fluke precautionary default measures, Scup alternative 1, BSB alternative 1
[b]Fluke precautionary default measures, Scup alternative 1, BSB alternative 2
[c]Fluke precautionary default measures, Scup alternative 1, BSB alternative 3
[d]Fluke precautionary default measures, Scup alternative 2, BSB alternative 1
[e]Fluke precautionary default measures, Scup alternative 2, BSB alternative 2
[f]Fluke precautionary default measures, Scup alternative 2, BSB alternative 3
[g]Fluke precautionary default measures, Scup alternative 3, BSB alternative 1
[h]Fluke precautionary default measures, Scup alternative 3, BSB alternative 2
[i]Fluke precautionary default measures, Scup alternative 3, BSB alternative 3
[j]Fluke alternative 2, Scup alternative 1, BSB alternative 1
[k]Fluke alternative 2, Scup alternative 1, BSB alternative 2
[l]Fluke alternative 2, Scup alternative 1, BSB alternative 3
[m]Fluke alternative 2, Scup alternative 2, BSB alternative 1
[n]Fluke alternative 2, Scup alternative 2, BSB alternative 2
[o]Fluke alternative 2, Scup alternative 2, BSB alternative 3
[p]Fluke alternative 2, Scup alternative 3, BSB alternative 1
[q]Fluke alternative 2, Scup alternative 3, BSB alternative 2
[r]Fluke alternative 2, Scup alternative 3, BSB alternative 3
Source: Scott Steinback, NMFS/NER/NEFSC.

Table 47. Regional economic lossesof combined management measures assuming a 25% reduction in the number of affected trips (2011 $'s).

	Party/Charter			Private/Rental			Shore			Total		
	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs	Sales (thousand dollars)	Income	Jobs
Combination 1[a]	4,283	1,454	61	4,957	1,621	6	433	148	115	9,672	3,223	182
Combination 2[b]	2,410	818	47	3,823	1,251	37	2,874	980	112	9,107	3,049	197
Combination 3[c]	2,142	727	43	3,437	1,124	5	363	124	71	5,942	1,975	119
Combination 4[d]	6,960	2,363	125	10,074	3,295	31	2,391	815	234	19,425	6,473	390
Combination 5[e]	5,087	1,727	111	8,941	2,924	30	2,321	792	198	16,349	5,443	339
Combination 6[f]	4,819	1,636	108	8,703	2,847	30	2,321	792	192	15,844	5,274	331
Combination 7[g]	4,265	1,448	54	4,381	1,433	4	286	97	106	8,932	2,978	164
Combination 8[h]	2,392	812	40	3,247	1,062	3	216	74	70	5,855	1,948	113
Combination 9[i]	2,125	721	37	3,010	985	3	216	74	64	5,350	1,779	104
Combination 10[j]	4,238	1,439	60	4,808	1,573	6	431	147	113	9,477	3,158	178
Combination 11[k]	2,365	803	46	3,675	1,202	5	361	123	77	6,401	2,128	127
Combination 12[l]	2,098	712	43	3,437	1,124	5	361	123	71	5,896	1,959	118
Combination 13[m]	6,915	2,348	123	9,925	3,247	31	2,389	815	232	19,230	6,409	386
Combination 14[n]	5,043	1,712	109	8,792	2,876	30	2,319	791	196	16,154	5,378	335
Combination 15[o]	4,775	1,621	106	8,554	2,798	30	2,319	791	190	15,649	5,210	326
Combination 16[p]	4,220	1,433	53	4,232	1,384	4	284	97	104	8,736	2,914	160
Combination 17[q]	2,348	797	38	3,099	1,014	3	213	73	68	5,660	1,883	109
Combination 18[r]	2,080	706	35	2,861	936	3	213	73	62	5,155	1,715	100

[a]Fluke precautionary default measures, Scup alternative 1, BSB alternative 1
[b]Fluke precautionary default measures, Scup alternative 1, BSB alternative 2
[c]Fluke precautionary default measures, Scup alternative 1, BSB alternative 3
[d]Fluke precautionary default measures, Scup alternative 2, BSB alternative 1
[e]Fluke precautionary default measures, Scup alternative 2, BSB alternative 2
[f]Fluke precautionary default measures, Scup alternative 2, BSB alternative 3
[g]Fluke precautionary default measures, Scup alternative 3, BSB alternative 1
[h]Fluke precautionary default measures, Scup alternative 3, BSB alternative 2
[i]Fluke precautionary default measures, Scup alternative 3, BSB alternative 3
[j]Fluke alternative 2, Scup alternative 1, BSB alternative 1
[k]Fluke alternative 2, Scup alternative 1, BSB alternative 2
[l]Fluke alternative 2, Scup alternative 1, BSB alternative 3
[m]Fluke alternative 2, Scup alternative 2, BSB alternative 1
[n]Fluke alternative 2, Scup alternative 2, BSB alternative 2
[o]Fluke alternative 2, Scup alternative 2, BSB alternative 3
[p]Fluke alternative 2, Scup alternative 3, BSB alternative 1
[q]Fluke alternative 2, Scup alternative 3, BSB alternative 2
[r]Fluke alternative 2, Scup alternative 3, BSB alternative 3
Source: Scott Steinback, NMFS/NER/NEFSC.

Table 48. Summary of Landings Combinations by Vessels Reporting Party/Charter Trips (Calendar Year 2009 VTR Data).

State	Landed Fluke, BSB, and Scup	Landed BSB Only	Landed BSB and Scup	Landed BSB and Fluke	Landed Scup Only	Landed Fluke Only	Landed Fluke and Scup	Total
ME	0	0	0	0	1	0	0	1
NH	0	1	0	0	0	0	0	1
MA	9	2	5	1	2	3	0	22
RI	21	0	3	4	1	7	1	37
CT	6	1	1	0	2	0	1	11
NY	61	4	5	13	2	13	2	100
NJ	38	13	2	41	0	22	0	116
DE	3	5	0	20	0	1	0	29
MD	2	5	0	1	0	1	0	9
VA	1	5	0	9	0	3	0	18
NC	0	4	0	1	0	0	0	5
Total	141	40	16	90	8	50	4	349

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 49. Number of coastwide summer flounder recreational fishing trips, recreational harvest limit, recreational landings, and historical performance from 1991 to 2011.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb) [b]	Recreational Landings of Summer Flounder (million lb)[c]	Overage (+%)/ Underage (-%)
1991	4,536,651	None	7.96	NA
1992	3,820,071	None	7.15	NA
1993	4,671,638	8.38	8.83	+5
1994	5,769,037	10.67	9.33	-13
1995	4,683,754	7.76	5.42	-30
1996	4,478,460	7.41	9.82	+33
1997	5,595,636	7.41	11.87	+60
1998	5,268,926	7.41	12.48	+68
1999	4,219,909	7.41	8.37	+13
2000	5,802,215	7.41	16.47	+122
2001	6,130,383	7.16	11.64	+63
2002	4,564,011	9.72	8.01	-18
2003	5,715,530	9.28	11.64	+25
2004	5,227,182	11.21	10.87	-3
2005	5,947,713	11.98	10.58	-12
2006	5,477,806	9.29	11.55	+24
2007	5,789,397	6.68	9.86	+48
2008	5,427,176	6.22	7.90	+27
2009	4,818,629	7.16	6.30	-12
2010	4,618,267[e]	8.59	4.98 [d]	-42
2011	NA	11.58	NA	NA

[a] Estimated number of recreational fishing trips (expanded) where the primary target species was summer flounder, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.
[b] Recreational harvest limits from 2003-2010 are adjusted for research set-aside.
[c] From Maine through North Carolina.
[d] Projected using 2008 data and 2009 waves 1-4.
[e] Projected using 2009 wave 6 data and 2010 waves 1-5.
NA = Data not available.

Table 50. Number of coastwide scup recreational fishing trips, recreational harvest limit, recreational landings, and historical performance from 1991 to 2011.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)[b]	Recreational Landings of Scup (million lb)[c]	Overage (+%)/ Underage (-%)
1991	793,593	None	8.09	NA
1992	499,780	None	4.41	NA
1993	499,703	None	3.20	NA
1994	435,625	None	2.63	NA
1995	242,956	None	1.34	NA
1996	241,322	None	2.16	NA
1997	198,754	1.95	1.20	-38
1998	213,842	1.55	0.88	-43
1999	231,596	1.24	1.89	+52
2000	485,039	1.24	5.44	+339
2001	484,604	1.77	4.26	+141
2002	481,716	2.71	3.62	+34
2003	983,952	4.01	8.48	+111
2004	585,170	4.01	4.24	+6
2005	518,947	3.96	2.54	-36
2006	514,303	4.15	2.95	-29
2007	580,753	2.74	3.65	+33
2008	648,548	1.83	4.04	+121
2009	481,779	2.59	2.94	+14
2010	661,310 [e]	3.01	5.74 [d]	+91
2011	NA	4.30	NA	NA

[a] Estimated number of recreational fishing trips (expanded) where the primary target species was scup, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.
[b] Recreational harvest limits from 2003-2010 are adjusted for research set-aside.
[c] From Maine through North Carolina.
[d] Projected using 2008 data and 2009 waves 1-4.
[e] Projected using 2009 wave 6 data and 2010 waves 1-5.
NA = Data not available.

Table 51. Number of coastwide black sea bass recreational fishing trips, recreational harvest limit, recreational landings, and historical performance from 1991 to 2011.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)[b]	Recreational Landings of Black Sea Bass (million lb)[c]	Overage (+%)/ Underage (-%)
1991	288,691	None	4.32	None
1992	263,957	None	2.91	None
1993	299,404	None	4.99	None
1994	253,888	None	3.05	None
1995	313,537	None	6.34	None
1996	231,090	None	4.13	None
1997	310,898	None	4.40	None
1998	137,734	3.15	1.29	-59
1999	136,452	3.15	1.70	-46
2000	255,789	3.15	4.12	+31
2001	293,191	3.15	3.60	+14
2002	283,537	3.43	4.44	+29
2003	299,791	3.43	3.45	+1
2004	234,860	4.01	1.95	-51
2005	197,096	4.13	1.89	-54
2006	292,415	3.99	1.99	-50
2007	376,947	2.47	2.25	-9
2008	246,151	2.11	1.56	-40
2009	312,120	1.14	3.31	+190
2010	341,378 [e]	1.83	3.11 [d]	+70
2011	NA	1.84	NA	NA

[a] Estimated 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.
[b] Recreational harvest limits from 2003-2010 are adjusted for research set-aside.
[c] From Maine through Hatteras, North Carolina.
[d] Projected using 2008 data and 2009 waves 1-4.
[e] Projected using 2009 wave 6 data and 2010 waves 1-5.
NA = Data not available.

Table 52. Combined effects of summer flounder precautionary default measures, scup alternative 1, and black sea bass alternative 1 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2010 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2010 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	10.9%	19,726	22	$5,601	$14,003
RI	43,195	9.3%	4,029	37	$680	$1,701
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	4.8%	14,482	100	$905	$2,262
NJ	350,945	9.4%	33,003	116	$1,777	$4,443
DE	18,411	3.5%	639	29	$138	$344
MD	160,453	0.4%	650	9	$451	$1,128
VA	34,634	2.2%	772	18	$268	$670
NC	219,992	6.6%	14,456	5	$18,061	$45,152

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 53. Combined effects of summer flounder precautionary default measures, scup alternative 1, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2010 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,601	22	$2,726	$6,815
RI	43,195	6.7%	2,877	37	$486	$1,214
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.3%	9,765	100	$610	$1,525
NJ	350,945	4.8%	16,714	116	$900	$2,250
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	354	9	$246	$614
VA	34,634	2.0%	684	18	$237	$593
NC	219,992	4.1%	8,975	5	$11,214	$28,034

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 54. Combined effects of summer flounder precautionary default measures, scup alternative 1, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,601	22	$2,726	$6,815
RI	43,195	6.3%	2,734	37	$462	$1,154
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.3%	9,765	100	$610	$1,525
NJ	350,945	4.8%	16,714	116	$900	$2,250
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	354	9	$246	$614
VA	34,634	2.0%	683	18	$237	$592
NC	219,992	1.6%	3,592	5	$4,488	$11,220

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 55. Combined effects of summer flounder precautionary default measures, scup alternative 2, and black sea bass alternative 1 management measures - affected party/charter effort and the estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	17.0%	30,777	22	$8,739	$21,848
RI	43,195	17.8%	7,698	37	$1,300	$3,249
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	18.5%	55,682	100	$3,478	$8,696
NJ	350,945	8.4%	29,493	116	$1,588	$3,971
DE	18,411	3.5%	639	29	$138	$344
MD	160,453	0.4%	658	9	$457	$1,142
VA	34,634	2.3%	793	18	$275	$688
NC	219,992	6.9%	15,210	5	$19,003	$47,507

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 56. Combined effects of summer flounder precautionary default measures, scup alternative 2, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	11.4%	20,651	22	$5,864	$14,660
RI	43,195	15.2%	6,546	37	$1,105	$2,763
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	17.0%	50,966	100	$3,184	$7,960
NJ	350,945	3.8%	13,205	116	$711	$1,778
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	362	9	$252	$629
VA	34,634	2.0%	705	18	$245	$612
NC	219,992	4.4%	9,729	5	$12,155	$30,389

Source: Scott Steinback, NMFS/NER/NEFSC

Table 57. Combined effects of summer flounder precautionary default measures, scup alternative 2, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	11.4%	20,651	22	$5,864	$14,660
RI	43,195	14.8%	6,403	37	$1,081	$2,703
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	17.0%	50,966	100	$3,184	$7,960
NJ	350,945	3.8%	13,205	116	$711	$1,778
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	362	9	$252	$629
VA	34,634	2.0%	704	18	$244	$611
NC	219,992	2.0%	4,346	5	$5,430	$13,575

Source: Scott Steinback, NMFS/NER/NEFSC

Table 58. Combined effects of summer flounder precautionary default measures, scup alternative 3, and black sea bass alternative 1 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	11.0%	19,797	22	$5,621	$14,053
RI	43,195	9.3%	4,029	37	$680	$1,701
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	4.7%	14,231	100	$889	$2,223
NJ	350,945	9.4%	33,003	116	$1,777	$4,443
DE	18,411	3.5%	639	29	$138	$344
MD	160,453	0.4%	650	9	$451	$1,128
VA	34,634	2.2%	772	18	$268	$670
NC	219,992	6.5%	14,269	5	$17,828	$44,570

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 59. Combined effects of summer flounder precautionary default measures, scup alternative 3, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011Aboard 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.4%	9,671	22	$2,746	$6,866
RI	43,195	6.7%	2,877	37	$486	$1,214
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,515	100	$594	$1,486
NJ	350,945	4.8%	16,714	116	$900	$2,250
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	354	9	$246	$614
VA	34,634	2.0%	684	18	$237	$593
NC	219,992	4.0%	8,789	5	$10,981	$27,452

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 60. Combined effects of summer flounder precautionary default measures, scup alternative 3, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011Aboard 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.4%	9,671	22	$2,746	$6,866
RI	43,195	6.3%	2,734	37	$462	$1,154
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,515	100	$594	$1,486
NJ	350,945	4.8%	16,714	116	$900	$2,250
DE	18,411	0.6%	102	29	$22	$55
MD	160,453	0.2%	354	9	$246	$614
VA	34,634	2.0%	683	18	$237	$592
NC	219,992	1.5%	3,406	5	$4,255	$10,638

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 61. Combined effects of summer flounder alternative 2, scup alternative 1, and black sea bass alternative 1 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 20110 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	10.9%	19,683	22	$5,589	$13,973
RI	43,195	8.8%	3,780	37	$638	$1,596
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	4.8%	14,458	100	$903	$2,258
NJ	350,945	9.2%	32,457	116	$1,748	$4,370
DE	18,411	3.4%	624	29	$134	$336
MD	160,453	0.4%	622	9	$432	$1,080
VA	34,634	2.2%	759	18	$263	$659
NC	219,992	6.6%	14,456	5	$18,061	$45,152

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 62. Combined effects of summer flounder alternative 2, scup alternative 1, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,558	22	$2,714	$6,785
RI	43,195	6.1%	2,628	37	$444	$1,109
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,742	100	$609	$1,521
NJ	350,945	4.6%	16,169	116	$871	$2,177
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	327	9	$227	$567
VA	34,634	1.9%	670	18	$233	$582
NC	219,992	4.1%	8,975	5	$11,214	$28,034

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 63. Combined effects of summer flounder alternative 2, scup alternative 1, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,558	22	$2,714	$6,785
RI	43,195	5.8%	2,485	37	$420	$1,049
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,742	100	$609	$1,521
NJ	350,945	4.6%	16,169	116	$871	$2,177
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	327	9	$227	$567
VA	34,634	1.9%	670	18	$232	$581
NC	219,992	1.6%	3,592	5	$4,488	$11,220

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 64. Combined effects of summer flounder alternative 2, scup alternative 2, and black sea bass alternative 1 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	17.0%	30,734	22	$8,727	$21,818
RI	43,195	17.2%	7,450	37	$1,258	$3,144
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	18.5%	55,659	100	$3,477	$8,693
NJ	350,945	8.2%	28,948	116	$1,559	$3,897
DE	18,411	3.4%	624	29	$134	$336
MD	160,453	0.4%	631	9	$438	$1,095
VA	34,634	2.3%	780	18	$271	$677
NC	219,992	6.9%	15,210	5	$19,003	$47,507

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 65. Combined effects of summer flounder alternative 2, scup alternative 2, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	11.4%	20,609	22	$5,852	$14,630
RI	43,195	14.6%	6,297	37	$1,063	$2,658
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	17.0%	50,942	100	$3,182	$7,956
NJ	350,945	3.6%	12,659	116	$682	$1,704
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	335	9	$233	$581
VA	34,634	2.0%	692	18	$240	$600
NC	219,992	4.4%	9,729	5	$12,155	$30,389

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 66. Combined effects of summer flounder alternative 2, scup alternative 2, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	11.4%	20,609	22	$5,852	$14,630
RI	43,195	14.2%	6,155	37	$1,039	$2,598
CT	44,159	6.4%	2,815	11	$1,599	$3,996
NY	300,198	17.0%	50,942	100	$3,182	$7,956
NJ	350,945	3.6%	12,659	116	$682	$1,704
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	335	9	$233	$581
VA	34,634	2.0%	691	18	$240	$599
NC	219,992	2.0%	4,346	5	$5,430	$13,575

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 67. Combined effects of summer flounder alternative 2, scup alternative 3, and black sea bass alternative 1 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	10.9%	19,754	22	$5,609	$14,023
RI	43,195	8.8%	3,780	37	$638	$1,596
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	4.7%	14,208	100	$888	$2,219
NJ	350,945	9.2%	32,457	116	$1,748	$4,370
DE	18,411	3.4%	624	29	$134	$336
MD	160,453	0.4%	622	9	$432	$1,080
VA	34,634	2.2%	759	18	$263	$659
NC	219,992	6.5%	14,269	5	$17,828	$44,570

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 68. Combined effects of summer flounder alternative 2, scup alternative 3, and black sea bass alternative 2 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,629	22	$2,734	$6,835
RI	43,195	6.1%	2,628	37	$444	$1,109
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,491	100	$593	$1,482
NJ	350,945	4.6%	16,169	116	$871	$2,177
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	327	9	$227	$567
VA	34,634	1.9%	670	18	$233	$582
NC	219,992	4.0%	8,789	5	$10,981	$27,452

Source: Scott Steinback, NMFS/NER/NEFSC.

Table 69. Combined effects of summer flounder alternative 2, scup alternative 3, and black sea bass alternative 3 management measures - affected party/charter effort and the average estimated 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 2011 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 Federally Permitted Party/Charter Vessels (VTR 2009)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 10% Reduction in Affected Effort ($'s)	Average Estimated Gross Revenue Loss per Party/Charter Vessel in 2011 Assuming a 25% Reduction in Affected Effort ($'s)
ME	24,174	0.0%	0	1	$0	$0
NH	58,111	0.0%	0	1	$0	$0
MA	180,697	5.3%	9,629	22	$2,734	$6,835
RI	43,195	5.8%	2,485	37	$420	$1,049
CT	44,159	1.6%	708	11	$402	$1,006
NY	300,198	3.2%	9,491	100	$593	$1,482
NJ	350,945	4.6%	16,169	116	$871	$2,177
DE	18,411	0.5%	87	29	$19	$47
MD	160,453	0.2%	327	9	$227	$567
VA	34,634	1.9%	670	18	$232	$581
NC	219,992	1.5%	3,406	5	$4,255	$10,638

Source: Scott Steinback, NMFS/NER/NEFSC.

FIGURES

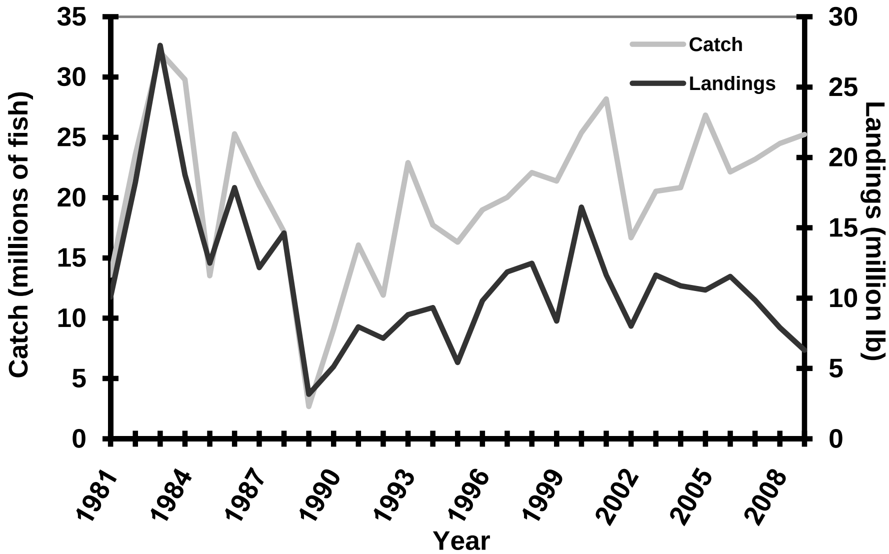

Figure 1. Summer flounder recreational catch (A+B1+B2) and landings (A+B1), 1981-2009. (MRFSS/NMFS/FSO, pers. comm.)

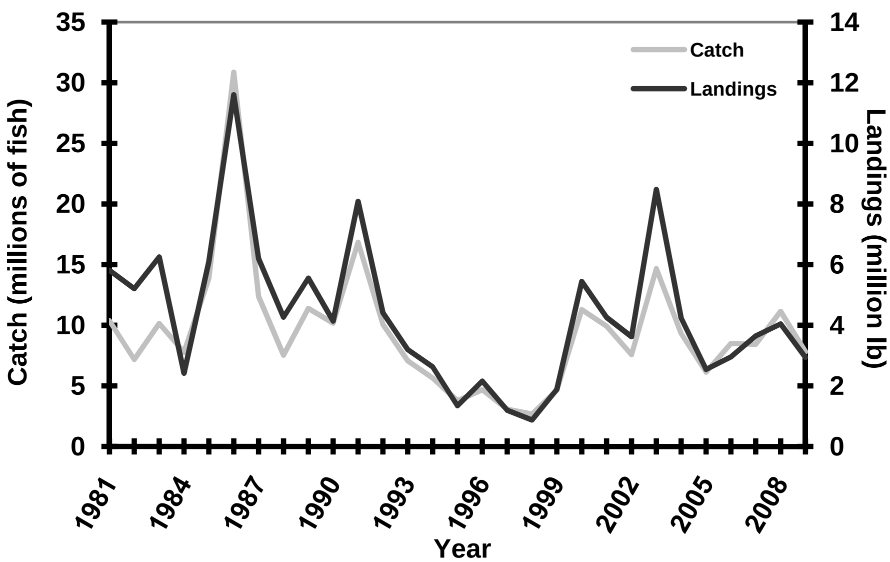

Figure 2. Scup recreational catch (A+B1+B2) and landings (A+B1), 1981-2009. (MRFSS/NMFS/FSO, pers. comm.)

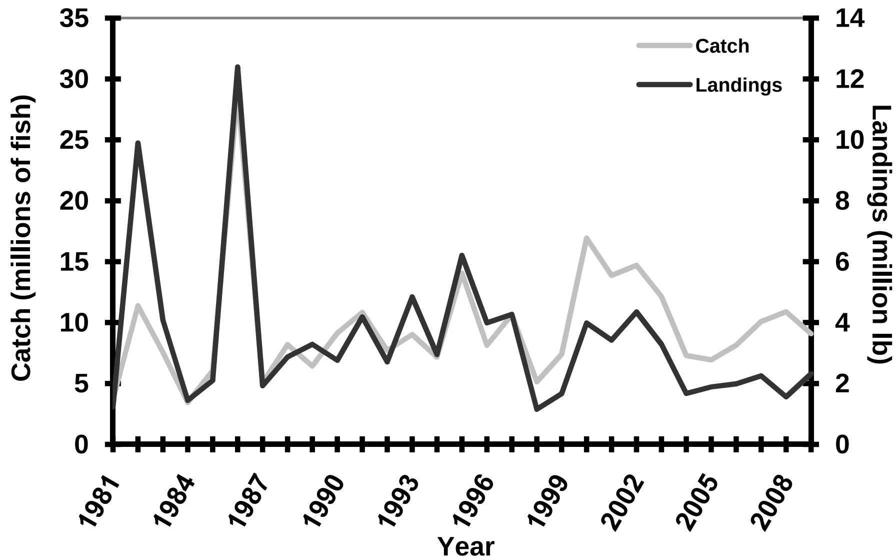

Figure 3. Black sea bass recreational catch (A+B1+B2) and landings (A+B1), 1981-2009. (MRFSS/NMFS/FSO, pers. comm.)

GLOSSARY

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 ½ of the carrying capacity. Overfishing definition control rules usually call for action when biomass is below ¼ or ½ 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 ($B_{threshold}$ 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.

Natural Mortality Rate. The part of the total mortality rate applying to a fish population that is caused by factors other than fishing. This may include disease, senility, predation, pollution, etc., with all sources of natural mortality being considered together. Natural mortality is usually expressed as an instantaneous rate, and is abbreviated as "M". An instantaneous mortality rate reflects the percentage of fish dying at any one time, as compared to an annual rate which reflects the percentage of fish dying in one year. Natural mortality is differentiated from the instantaneous fishing mortality rate, "F". Together, these comprise the instantaneous total mortality rate, "Z" (i.e., Z = F + M). Natural mortality rates can be estimated using a variety of techniques depending on data availability. As compared to fishing mortality, natural mortality is often difficult to investigate because direct evidence about the timing or magnitude of natural deaths is rarely available.

Overfished. An overfished stock is one “whose size is sufficiently small that a change in management practices is required to achieve an appropriate level and rate of rebuilding.” A stock or stock complex is considered overfished when its population size falls below the minimum stock size threshold (MSST). A rebuilding plan is required for stocks that are deemed overfished. A stock is considered “overfished” when exploited beyond an explicit limit beyond which its abundance is considered ‘too low’ to ensure safe reproduction.

Overfishing. According to the National Standard Guidelines, “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 maximum sustainable yield (MSY) on a continuing basis.” Overfishing is occurring if the maximum fishing mortality threshold (MFMT) is exceeded for 1 year or more. In general, it is the action of exerting fishing pressure (fishing intensity) beyond the agreed optimum level. A reduction of fishing pressure would, in the medium term, lead to an increase in the total catch.

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 $B_{threshold}$ (defines overfished) and $F_{threshold}$ (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. For black sea bass, the total length excludes any caudal filament.

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 $F_{0.1}$.

APPENDIX A

Description of Species Listed as Endangered and Threatened which Inhabit the Management Unit of the FMP under NMFS' Jurisdiction

North Atlantic Right Whale

Right whales have occurred historically in all the world's oceans from temperate to subarctic latitudes. NMFS recognizes three major subdivisions of right whales: North Pacific, North Atlantic, and Southern Hemisphere. NMFS further recognizes two extant subunits in the North Atlantic: eastern and western. A third subunit may have existed in the central Atlantic (migrating from east of Greenland to the Azores or Bermuda), but this stock appears to be extinct (Waring et al. 2002).

The north Atlantic right whale has the highest risk of extinction among all of the large whales in the world's oceans. The scarcity of right whales is the result of an 800-year history of whaling that continued into the 1960s (Klumov 1962). Historical records indicate that right whales were subject to commercial whaling in the North Atlantic as early as 1059. Between the 11th and 17th centuries, an estimated 25,000-40,000 right whales may have been harvested. The size of the western north Atlantic right whale population at the termination of whaling is unknown, but the stock was recognized as seriously depleted as early as 1750. However, right whales continued to be taken in shore-based operations or opportunistically by whalers in search of other species as late as the 1920's. By the time the species was internationally protected in 1935, there may have been fewer than 100 western north Atlantic right whales in the western Atlantic (Hain 1975; Reeves et al. 1992; Waring et al. 2002).

Right whales appear to prefer shallow coastal waters, but their distribution is also strongly correlated to the distribution of their prey (zooplankton). In both the northern and southern hemispheres, right whales are observed in the lower latitudes and more coastal waters during winter where calving takes place, and then tend to migrate to higher latitudes during the summer. The distribution of right whales in summer and fall in both hemispheres appears linked to the distribution of their principal zooplankton prey (Winn et al. 1986). They generally occur in Northwest Atlantic waters west of the Gulf Stream and are most commonly associated with cooler waters (21° C). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico.

Right whales feed on zooplankton through the water column, and in shallow waters may feed near the bottom. In the Gulf of Maine they have been observed feeding on zooplankton, primarily copepods, by skimming at or below the water's surface with open mouths (NMFS 2004; Kenney et al. 1986; Murison and Gaskin 1989; and Mayo and Marx 1990). Research suggests that right whales must locate and exploit extremely dense patches of zooplankton to feed efficiently (Waring et al. 2002). New England waters include important foraging habitat for right whales and at least some portion of the North Atlantic right whale population is present in these waters throughout most months of the year. They are most abundant in Cape Cod Bay between February and April

(Hamilton and Mayo 1990; Schevill et al. 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Payne et al. 1990) where they have been observed feeding predominantly on copepods, largely of the genera Calanus and Pseudocalanus (Waring et al. 2002). Right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy and Browns and Baccaro Banks, in the spring and summer months. Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

In 1993, Canada's Department of Fisheries declared two conservation areas for right whales; one in the Grand Manan Basin in the lower Bay of Fundy, and a second in Roseway Basin between Browns and Baccaro Banks (Canadian Recovery Plan for the North Atlantic Right Whale 2000).

The northern right whale was listed as endangered throughout its range on June 2, 1970 under the ESA. The current population is considered to be at a low level and the species remains designated as endangered (Waring et al. 2007). A Recovery plan has been published and currently is in effect (NMFS 2004). This is a strategic stock because the average annual fishery-related mortality and serious injury from all fisheries exceeds the PBR.

The western North Atlantic population of right whales was estimated to be 295 individuals in 1998 (Waring et al. 2007). An updated analysis using the same method gave an updated estimate of 299 animals in 1998. A review of the photo-id recapture database on June 15, 2006, indicated that 313 individually recognized whales were known to be alive in 2002 (Waring et al. 2007). PBR for this stock is zero.

Right whales may be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. However, the major known sources of anthropogenic mortality and injury of right whales clearly are ship strikes and entanglement in commercial fishing gear. Waring et al. (2008) provide a detailed description of the annual human related mortalities of right whales.

Humpback Whale

The humpback whale was listed as endangered throughout its range on June 2, 1970. Humpback whales calve and mate in the West Indies and migrate to feeding areas in the northwestern Atlantic during the summer months. Six separate feeding areas are utilized in northern waters after their return (Waring et al. 2002). Only one of these feeding areas, the GOM, lies within U.S. waters and is within the action area of this FMP. Most of the humpbacks that forage in the GOM visit Stellwagen Bank and the waters of Massachusetts and Cape Cod Bays. Sightings are most frequent from mid-March through November between 41º N and 43º N, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffreys Ledge (CeTAP 1982), and peak in May and August. Small numbers of individuals may be present in this area year-round. They feed on a number of species of small schooling fishes, particularly sand lance and Atlantic herring, by targeting fish schools and filtering large amounts of water for their associated prey. Humpback whales have also been observed feeding on krill (Wynne and Schwartz 1999).

Various papers (Barlow & Clapham 1997; Clapham et al. 1999) summarized information gathered from a catalogue of photographs of 643 individuals from the western North Atlantic population of humpback whales. These photographs identified reproductively mature western North Atlantic humpbacks wintering in tropical breeding grounds in the Antilles, primarily on Silver and Navidad Banks, north of the Dominican Republic. The primary winter range also includes the Virgin Islands and Puerto Rico (Waring et al. 2002). In general, it is believed that calving and copulation take place on the winter range. Calves are born from December through March and are about 4 meters at birth. Sexually mature females give birth approximately every 2 to 3 years. Sexual maturity is reached between 4 and 6 years of age for females and between 7 and 15 years for males. Size at maturity is about 12 meters.

Humpback whales use the mid-Atlantic as a migratory pathway, but it may also be an important feeding area for juveniles. Since 1989, observations of juvenile humpbacks in the mid-Atlantic have been increasing during the winter months, peaking January through March (Swingle et al. 1993). Biologists speculate that non-reproductive animals may be establishing a winter feeding range in the mid-Atlantic since they are not participating in reproductive behavior in the Caribbean. Swingle et al. (1993) identified a shift in distribution of juvenile humpback whales in the nearshore waters of Virginia, primarily in winter months. Those whales using this mid-Atlantic area that have been identified were found to be residents of the GOM and Atlantic Canada (Gulf of St. Lawrence and Newfoundland) feeding groups, suggesting a mixing of different feeding stocks in the mid-Atlantic region. A shift in distribution may be related to winter prey availability. Studies conducted by the Virginia Marine Science Museum indicate that these whales are feeding on, among other things, bay anchovies and menhaden. In concert with the increase in mid-Atlantic whale sightings, strandings of humpback whales have increased between New Jersey and Florida since 1985. Strandings were most frequent during September through April in North Carolina and Virginia waters, and were comprised primarily of juvenile humpback whales of no more than 11 meters in length (Wiley et al. 1995). Six of 18 humpbacks for which the cause of mortality was determined were killed by vessel strikes. An additional humpback had scars and bone fractures indicative of a previous vessel strike that may have contributed to the whale's mortality. Sixty percent of those mortalities that were closely investigated showed signs of entanglement or vessel collision.

New information has recently become available on the status and trends of the humpback whale population in the North Atlantic. Although current and maximum net productivity rates are unknown at this time, the Gulf of Maine stock has been steadily increasing (Waring et al. 2007). The minimum population estimate is the lower limit of the two-tailed 60% confidence interval of the lognormally distributed best abundance estimate.

This is equivalent to the 20th percentile of the log-normal distribution as specified by Wade and Angliss (1997). The best estimate of abundance for Gulf of Maine humpback whales is 847 (CV=0.55). The minimum population estimate for this stock is 549 animals (Waring et al. 2007).

PBR is the product of minimum population size (549 animals), one-half the maximum productivity rate, and a “recovery” factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). The maximum productivity rate is the default value of 0.04. The “recovery” factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP) is assumed to be 0.10 because this stock is listed as an endangered species under the ESA. PBR for the Gulf of Maine humpback whale stock is 1.1 whales (Waring et al. 2007).

The major known sources of anthropogenic mortality and injury of humpback whales include entanglement in commercial fishing gear and ship strikes. Waring et al. (2008) provide a detailed description of the annual human related mortalities of humpback whales. Humpback whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

Fin Whale

Fin whales inhabit a wide range of latitudes between 20-75°N and 20-75°S (Perry et al. 1999). Fin whales spend the summer feeding in the relatively high latitudes of both hemispheres, particularly along the cold eastern boundary currents in the North Atlantic and North Pacific Oceans and in Antarctic waters (IWC 1992). Most migrate seasonally from relatively high-latitude Arctic and Antarctic feeding areas in the summer to relatively low-latitude breeding and calving areas in the winter (Perry et al. 1999).

As in the case of right and humpback whales, fin whale populations were heavily affected by commercial whaling. However, commercial exploitation of fin whales occurred much later than for right and humpback whales. Although some fin whales were taken as early as the 17th century by the Japanese using a fairly primitive open-water netting technique (Perry et al. 1999) and were hunted occasionally by sailing vessel whalers in the 19th century (Mitchell and Reeves 1983), wide-scale commercial exploitation of fin whales did not occur until the 20th century when the use of steam power and harpoon- gun technology made exploitation of this faster, more offshore species feasible. In the southern hemisphere, over 700,000 fin whales were landed in the 20th century. More than 48,000 fin whales were taken in the North Atlantic between 1860 and 1970 (Perry et al. 1999). Fisheries existed off of Newfoundland, Nova Scotia, Norway, Iceland, the Faroe Islands, Svalbard (Spitsbergen), the islands of the British coasts, Spain and Portugal. Fin whales were rarely taken in U.S. waters, except when they ventured near the shores of Provincetown, MA, during the late 1800’s (Perry et al. 1999).

In the North Atlantic today, fin whales are widespread and occur from the Gulf of Mexico and Mediterranean Sea northward to the edges of the arctic pack ice (Waring et al. 2007). A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic. Mizroch et al. (1984) suggested that local depletions resulting from commercial overharvesting supported the existence of North Atlantic fin whale subpopulations. Others have used genetics information to provide support for the belief that there are several subpopulations of fin whales in the North Atlantic and Mediterranean (Bérubé et al. 1998). In 1976, the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales. These are: (1) North Norway; (2) West Norway-Faroe Islands; (3) British Isles-Spain and Portugal; (4) East Greenland-Iceland; (5) West Greenland; (6) Newfoundland-Labrador; and (7) Nova Scotia (Perry et al. 1999). However, it is uncertain whether these stock boundaries define biologically isolated units (Waring et al. 2002). The NMFS has designated one stock of fin whale for U.S. waters of the North Atlantic where the species is commonly found from Cape Hatteras northward.

The overall distribution of fin whales may be based on prey availability. This species preys opportunistically on both invertebrates and fish. The predominant prey of fin whales varies greatly in different geographical areas depending on what is locally available. In the western North Atlantic fin whales feed on a variety of small schooling fish (i.e., herring, capelin, sand lance) as well as squid and planktonic crustaceans. As with humpback whales, fin whales feed by filtering large volumes of water for their prey through their baleen plates. Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years (Seipt et al. 1990).

The major known sources of anthropogenic mortality and injury of fin whales include ship strikes and entanglement in commercial fishing gear. However, many of the reports of mortality cannot be attributed to a particular source. Fin whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

The fin whale was listed as endangered throughout its range on June 2, 1970 under the ESA. Hain et al. (1992) estimated that about 5,000 fin whales inhabit the northeastern United States continental shelf waters. Waring et al. (2008) present a more recent abundance estimate of 2,269 (CV=0.37) and minimum population estimate of 1,678 for fin whales in the western North Atlantic. PBR for the western North Atlantic fin whale is 3.4 animals. For the period 2001-2005, Waring et al. (2008) report that the average annual rate of human-caused mortality and serious injury to fin whales was 2.4 animals per year.

Blue Whale

Like the fin whale, blue whales occur worldwide and are believed to follow a similar migration pattern from northern summering grounds to more southern wintering areas

(Perry et al. 1999). Three subspecies have been identified: *Balaenoptera musculus musculus, B.m. intermedia*, and *B.m. brevicauda* (Waring et al. 2002). Only *B. musculus* occurs in the northern hemisphere. Blue whales range in the North Atlantic extends from the subtropics to Baffin Bay and the Greenland Sea. The IWC currently recognizes these whales as one stock (Perry et al. 1999).

Blue whales are only occasional visitors to east coast U.S. waters. They are more commonly found in Canadian waters, particularly the Gulf of St. Lawrence where they are present for most of the year, and other areas of the North Atlantic. It is assumed that blue whale distribution is governed largely by food requirements. In the Gulf of St. Lawrence, blue whales appear to predominantly feed on *Thysanoessa raschii* and *Meganytiphanes norvegica*. In the eastern North Atlantic, *T. inermis* and *M. norvegica* appear to be the predominant prey.

There is limited information on the factors affecting natural mortality of blue whales in the North Atlantic. Ice entrapment is known to kill and seriously injure some blue whales, particularly along the southwest coast of Newfoundland, during late winter and early spring. Habitat degradation has been suggested as possibly affecting blue whales such as in the St. Lawrence River and the Gulf of St. Lawrence where habitat has been degraded by acoustic and chemical pollution. However, there is no data to confirm that blue whales have been affected by such habitat changes (Perry et al. 1999).

Entanglement in fishing gear, and ship strikes are believed to be the major sources of anthropogenic mortality and injury of blue whales. However, confirmed deaths or serious injuries from either are few. In 1987, concurrent with an unusual influx of blue whales into the Gulf of Maine, one report was received from a whale watch boat that spotted a blue whale in the southern Gulf of Maine entangled in gear described as probable lobster pot gear. A second animal found in the Gulf of St. Lawrence apparently died from the effects of an entanglement. In March 1998, a juvenile male blue whale was carried into Rhode Island waters on the bow of a tanker. The cause of death was determined to be due to a ship strike, although not necessarily caused by the tanker on which it was observed, and the strike may have occurred outside the U.S. EEZ (Waring et al. 2002). No recent entanglements of blue whales have been reported from the U.S. Atlantic. Other impacts noted above for other baleen whales may occur.

Sei Whale

Sei whales are a widespread species in the world's temperate, subpolar and subtropical and even tropical marine waters. However, they appear to be more restricted to temperate waters than other balaenopterids (Perry et al. 1999). The IWC recognized three stocks in the North Atlantic based on past whaling operations as opposed to biological information: (1) Nova Scotia; (2) Iceland Denmark Strait; (3) Northeast Atlantic (Donovan 1991 in Perry et al. 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the northeastern United States, and extends northeastward to south of Newfoundland.

The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to longitude 42° (Waring et al. 2002). This is the only sei whale stock within the FMP management area.

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. The species occurs in deep water throughout their range, typically over the continental slope or in basins situated between banks. In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn, June and July on their way to and from the Gulf of Maine and Georges Bank where they occur in winter and spring. Within the action area, the sei whale is most common on Georges Bank and into the Gulf of Maine/Bay of Fundy region during spring and summer, primarily in deeper waters. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time then disappearing for year or even decades; this has been observed all over the world, including in the southwestern GOM in 1986. The basis for this phenomenon is not clear.

There are insufficient data to determine trends of the sei whale population. Waring et al. (2008) present a minimum population estimate of 128 fin whales in the western North Atlantic. PBR for the Nova Scotia stock of sei whales is 0.3 animals. Few instances of injury or mortality of sei whales due to entanglement or vessel strikes have been recorded in U.S. waters. Entanglement is not known to impact this species in the U.S. Atlantic, possibly because sei whales typically inhabit waters further offshore than most commercial fishing operations, or perhaps entanglements do occur but are less likely to be observed. Waring et al. (2008) reported that there were no fishery-related mortalities or serious injuries to fin whales observed by NMFS for the period 2001-2005. A small number of ship strikes of this species have been recorded. The most recent documented incident occurred in 1994 when a carcass was brought in on the bow of a container ship in Charlestown, Massachusetts. Other impacts noted above for other baleen whales may also occur. Due to the deep-water distribution of this species, interactions that do occur are less likely to be observed or reported than those involving right, humpback, and fin whales that often frequent areas within the continental shelf.

Sperm Whale

Sperm whales inhabit all ocean basins, from equatorial waters to polar regions (Perry et al. 1999). In the western North Atlantic they range from Greenland to the Gulf of Mexico and the Caribbean. The sperm whales that occur in the western North Atlantic are believed to represent only a portion of the total stock (Blaylock et al. 1995). Sperm whales generally occur in waters greater than 180 meters in depth. While they may be encountered almost anywhere on the high seas, their distribution shows a preference for continental margins, sea mounts, and areas of upwelling, where food is abundant (Leatherwood and Reeves 1983). Sperm whales in both hemispheres migrate to higher latitudes in the summer for feeding and return to lower latitude waters in the winter where mating and calving occur. Mature males typically range to much higher latitudes than mature females and immature animals but return to the lower latitudes in the winter to breed (Perry et al. 1999).

Waring et al. (2008) suggest sperm whale distribution is closely correlated with the Gulf Stream edge. Like swordfish, which feed on similar prey, sperm whales migrate to higher latitudes during summer months, when they are concentrated east and northeast of Cape Hatteras. In the U.S. EEZ, sperm whales occur on the continental shelf edge, over the continental slope, and into the mid-ocean regions, and are distributed in a distinct seasonal cycle; concentrated east-northeast of Cape Hatteras in winter and shifting northward in spring when whales are found throughout the mid-Atlantic Bight. Distribution extends further northward to areas north of Georges Bank and the Northeast Channel region in summer and then south of New England in fall, back to the mid-Atlantic Bight (Waring et al. 2007).

Total numbers of sperm whales off the USA or Canadian Atlantic coast are unknown, although eight estimates from selected regions of the habitat do exist for select time periods. The best estimate of abundance for the North Atlantic stock of sperm whales is 4,804 (CV=0.38). The minimum population estimate for the western North Atlantic sperm whale is 3,539 (Waring et al. 2007).

Few instances of injury or mortality of sperm whales due to human impacts have been recorded in U.S. waters. Because of their generally more offshore distribution and their benthic feeding habits, sperm whales are less subject to entanglement than right or humpback whales. Sperm whales are also struck by ships. In May 1994 a ship struck sperm whale was observed south of Nova Scotia (Waring et al. 2002). A sperm whale was also seriously injured as a result of a ship strike in May 2000 in the western Atlantic. Due to the offshore distribution of this species, interactions that do occur are less likely to be reported than those involving right, humpback, and fin whales that more often occur in nearshore areas. Other impacts noted above for baleen whales may also occur. Due to their offshore distribution, sperm whales tend to strand less often than, for example, right whales and humpbacks.

Atlantic Bottlenose dolphin

Most of the information which follows concerning Atlantic bottlenose dolphin was excerpted from the most recent stock assessment for this species (Waring et al. 2002). The coastal morphotype of the Atlantic bottlenose dolphin is continuously distributed along the Atlantic coast south of Long Island, around peninsula Florida and along the Gulf of Mexico coast. Within the western North Atlantic, the stock structure of coastal bottlenose dolphins is complex. Scott et al. (1988) hypothesized a single coastal migratory stock ranging seasonally from as far north as Long Island, NY, to as far south as central Florida, citing stranding patterns during a high mortality event in 1987-88 and observed density patterns along the U.S. Atlantic coast. The continuous distribution of dolphins along the coast seemed to support this hypothesis. It was recognized that bottlenose dolphins were resident in some estuaries; these were considered to be separate from the coastal migratory animals. However, recent studies suggest that the single coastal migratory stock hypothesis is incorrect and that there is likely a complex mosaic of stocks. For example, year-round resident populations have been reported at a variety of sites in the southern part of the range, from Charleston, South Carolina (Zolman 1996) to central Florida (Odell and Asper 1990); seasonal residents and migratory or transient animals also occur in these areas (summarized in Hohn 1997). In the northern part of the range the patterns reported include seasonal residency, year-round residency with large home ranges, and migratory or transient movements (Barco and Swingle 1996, Sayigh et al. 1997). Communities of dolphins have been recognized in embayments and coastal areas of the Gulf of Mexico (Wells et al. 1996; Scott et al. 1990; Weller 1998) so it is not surprising to find similar situations along the Atlantic coast (Waring et al. 2002).

Recent genetic analyses of samples from Jacksonville, FL, southern South Carolina (primarily the estuaries around Charleston), southern North Carolina, and coastal Virginia, using both mitochondrial DNA and nuclear microsatellite markers, indicate that a significant amount of the overall genetic variation can be explained by differences between the groups (NMFS 2001). These results indicate a minimum of four populations of coastal bottlenose dolphins in the Northwest Atlantic and reject the null hypothesis of one homogeneous population of bottlenose dolphins. Integration of the preliminary results from genetics, photo-identification, satellite telemetry, and stable isotope studies confirms a complex mosaic of stocks of coastal bottlenose dolphins in the western North Atlantic (Waring et al. 2002). As an interim measure, pending additional results, seven management units within the range of the "coastal migratory stock" have been defined. The true population structure is likely more than the seven units identified in Waring et al. (2002); research efforts continue in an attempt to identify that structure.

Earlier aerial (CETAP 1982) and shipboard (NMFS unpublished data) surveys north of Cape Hatteras identified two concentrations of bottlenose dolphins, one inshore of the 25 m isobath and the other offshore of the 25 m isobath. The lowest density of bottlenose dolphins was observed over the continental shelf, with higher densities along the coast and near the continental shelf edge. It was suggested that the coastal morphotype is restricted to waters < 25 m in depth north of Cape Hatteras (Kenney 1990). There was no apparent longitudinal discontinuity in bottlenose dolphin herd sightings during aerial surveys south of Cape Hatteras in the winter (Blaylock and Hoggard 1994). NMFS surveys conducted from 1992-1998 show a clustering of bottlenose dolphins nearshore and then additional bottlenose dolphins in the offshore areas. Unfortunately, the morphotype of bottlenose dolphins (WNA offshore or WNA coastal) cannot be determined from the air so attributing each sighting to a specific morphotype is not possible. There is also a potential for confusing immature spotted dolphins, with few or no spots dorsally, with bottlenose dolphins where the two species co-occur. In 1995, NMFS conducted two aerial surveys along the Atlantic coast (Blaylock 1995; Garrison and Yeung 2001). One survey was conducted during summer 1995 between Cape Hatteras, NC, and Sandy Hook, NJ, and included three replicate surveys. The second survey was conducted during winter 1995 between Cape Hatteras, NC, and Ft. Pierce, FL. A distributional analysis identified a significant spatial pattern in bottlenose dolphin sightings as a function of distance from shore (Garrison 2001a). During the northern (summer) surveys, the significant spatial boundary occurred at 12 km from shore. During the southern (winter) survey, the significant spatial boundary occurred at 27 km from shore. The gap in sightings best defines, for the time being, the eastern extent of the coastal morphotype for purposes of habitat definition and abundance estimates. NMFS continues to collect biopsy samples from Tursiops throughout the possible range of the coastal morphotype so that stock boundaries can be confirmed or modified on the basis of a more comprehensive data set (Waring et al. 2002).

The 1995 aerial surveys were conducted to estimate population size of the hypothesized single coastal migratory stock (Blaylock 1995; Garrison and Yeung 2001). The summer aerial survey was conducted between July 1 and August 14, 1995, covering Cape Hatteras, NC, to Sandy Hook, NJ, (35.23oN-40.5oN), and from the mainland shore to the 25 m isobath. This survey provided coverage and abundance estimates for the Northern Migratory (NM) and Northern North Carolina (NNC) management units. However, coverage of the NNC unit was incomplete as the surveys did not cover the region south of Cape Hatteras, NC, to Cape Lookout, NC. Abundance was estimated for each stratum pooling across the three replicate surveys. The winter survey was conducted between January 27 and March 6, covering from Fort Pierce, FL, to Cape Hatteras, NC, from the mainland shore to 9.25 km (5 Nautical Miles) beyond the inshore edge of the Gulf Stream or <200 km offshore. This survey included coverage of the NNC, Southern North Carolina (SNC), South Carolina (SC), Georgia (GA), Northern Florida (NFL) and Central Florida (CFL) management units. However, the coverage of the NNC management unit was incomplete and did not include the region north of Cape Hatteras, NC. These abundance estimates also include NM unit animals that have migrated south of the NC/VA border during winter. Abundance for each management unit was estimated using line transect methods and the program DISTANCE (Buckland et al. 1993) for both the winter and summer surveys. There was no significant difference between the abundance estimates for the combined NM and NNC management units in summer and the combined NM, NNC, and SNC stocks in winter. Another set of aerial surveys was conducted parallel to the coastline from the North Carolina/South Carolina border to the Maryland/Delaware border during 1998 and 1999 to document the distribution of dolphins and fishing gear in nearshore waters (Hohn et al. unpubl. data). These strip/ transect surveys were conducted weekly, weather permitting, over 12 months in most of North Carolina and for six months (May to December) in Virginia and Maryland. In retrospect, they provide seasonal coverage of the Southern North Carolina, Northern North Carolina, and Northern Migratory management units. The strip transect surveys cannot be used directly for abundance estimation because they did not follow the design constraints of line transect survey methods and covered only a small proportion of the habitat of coastal bottlenose dolphin. The density of dolphins near the coastline is high relative to habitats farther offshore, and the use of density estimates in this region to calculate overall abundance would likely result in significant positive bias. However, these surveys do provide information on the relative abundance of dolphins between regions that may be used to supplement the abundance estimates from the line transect surveys conducted in 1995 (Garrison and Hohn 2001). Both sets of aerial surveys covered ocean coasts only. An abundance estimate was generated for bottlenose dolphins in estuarine waters of North Carolina using mark-recapture methodology (Read et al. In review). It is possible to post-stratify the mark-recapture estimates consistent with management unit definitions (Palka et al. 2001). Abundance estimates for each management unit are the sum of estimates, where appropriate, from the recent analyses.

Estimated overall abundance was 9,206 from summer surveys and 19,459 from winter surveys. However, for consistency with achieving the goals of the MMPA, such as maintaining marine mammals as functioning components of their ecosystems, it is more appropriate to establish abundance estimates for each management unit. Abundance for each management unit was estimated by post-stratifying sightings and effort data consistent with geographic and seasonal management unit boundaries (Garrison and Yeung 2001; Palka et al. 2001). Although these estimates are improved relative to previous abundance estimates for coastal bottlenose dolphins, potential biases remain. The aerial survey estimates are not corrected for g(0), the probability of detecting a group on the track line as a function of perception bias and availability bias. The exclusion of g(0) from the abundance estimate results in a negative bias of unknown magnitude. A positive bias may occur if the longitudinal boundaries have been extended too far offshore resulting in offshore dolphins being included in the abundance estimates for the coastal morphotype or if estuarine dolphins were over-represented in coastal waters during the time of the survey. Further uncertainties in the abundance estimates result from incomplete coverage of some seasonal management units during the line transect surveys. While the strip transect surveys were used to supplement the survey coverage, uncertainties associated with that analysis also introduce uncertainty in the overall abundance estimate (Garrison and Hohn 2001).

The minimum population size (NMIN) for each management was calculated by Waring et al. (2002) according to he Potential Biological Removal (PBR) Guidelines (Wade and Angliss 1997): NMIN= N/exp(0.842×[ln(1+[CV(N)]2)]½). It was recognized that these estimates may be negatively biased because they do not include corrections for g(0) and, for some of the managements units, do not include the entire spatial range of the unit during that season. The strip transect surveys compensate for some of the abundance omitted during line-transect survey; nonetheless, for some management units the entire range was not covered. There are insufficient data to determine the population trend for this stock (Waring et al. 2002).

In addition, Current and maximum net productivity rates are not known for the WNA coastal morphotype. The maximum net productivity rate was assumed to be 0.04. This value is based on theoretical modeling showing that cetacean populations may not grow at rates much greater than 4% given the constraints of their reproductive life history (Barlow et al. 1995; Waring et al. 2002).

PBR is the product of the minimum population size, one-half the maximum productivity rate, and a “recovery” factor (Wade and Angliss 1997). The “recovery” factor is assumed to be 0.50, the default for depleted stocks and stocks of unknown status. At least part of the range-wide stock complex is depleted; for the remainder, status is unknown. For consistency with achieving the goals of the MMPA, such as maintaining marine mammals as functioning components of their ecosystems, it is more appropriate to establish separate PBRs for each management unit.

Total estimated average annual fishery-related mortality or serious injury resulting from observed fishing trips during 1996-2000 was 233 bottlenose dolphins (CV=0.16) in the mid-Atlantic coastal gillnet fishery (Waring et al. 2002). The management units affected by this fishery would be the NM, NNC, and SC. An estimated 24 (CV=0.89) were taken in the shark drift gillnet fishery off the coast of Florida during 1999-2000, affecting the Central and Northern Florida management units. No estimates of mortality from observed trips are available for any of the other fisheries that interact with WNA coastal bottlenose dolphins. Therefore, the total average annual mortality estimate is considered to be a lower bound of the actual annual human-caused mortality and serious injury (Waring et al. 2002).

Bottlenose dolphins are known to interact with commercial fisheries and occasionally are taken in various kinds of fishing gear including gillnets, seines, long-lines, shrimp trawls, and crab pots (Read 1994; Wang et al. 1994) especially in near-shore areas where dolphin densities and fishery efforts are greatest. There are nine Category II commercial fisheries that interact with WNA coastal bottlenose dolphins in the 2001 MMPA List of Fisheries (LOF), six of which occur in North Carolina waters. Category II fisheries include the mid-Atlantic coastal gillnet, NC inshore gillnet, mid-Atlantic haul/beach seine, NC long haul seine, NC stop net, Atlantic blue crab trap/pot, Southeast Atlantic gillnet, Southeastern U.S. Atlantic shark gillnet and the Virginia pound net (see 2001 List of Fisheries, 66 FR 42780, August 15, 2001; Waring et al. 2002). The mid-Atlantic haul/beach seine fishery also includes the haul seine and swipe net fisheries. There are five Category III fisheries that may interact with WNA coastal bottlenose dolphins. Three of these are inshore gillnet fisheries: the Delaware Bay inshore gillnet, the Long Island Sound inshore gillnet, and the Rhode Island, southern Massachusetts, and New York Bight inshore gillnet. The remaining two are the shrimp trawl and mid-Atlantic menhaden purse seine fisheries. There have been no takes observed by the NMFS observer programs in any of these fisheries (Waring et al. 2002).

The mid-Atlantic coastal gillnet fishery is actually a combination of small-vessel fisheries that target a variety of fish species, including bluefish, croaker, spiny and smooth dogfish, kingfish, Spanish mackerel, spot, striped bass, and weakfish (Steve et al. 2001). These fisheries operate in different seasons targeting different species in different states throughout the range of the coastal morphotype. Most nets are set gillnets without anchors and are fished close to shore. Anchored set gillnets or drift gillnets are used in some fisheries (e.g., monkfish or dogfish). A comprehensive description of coastal gillnet gears and fishing effort in North Carolina is available in Steve et al. (2001). This fishery has the highest documented level of mortality of WNA coastal bottlenose dolphins; the North Carolina sink gillnet fishery is its largest component in terms of fishing effort and observed takes. Bycatch estimates are available for the period 1996-2000 (Waring et al. 2002). Of 12 observed mortalities from 1995-2000, 5 occurred in sets targeting spiny or smooth dogfish and another in a set targeting “shark” species, 2 occurred in striped bass sets, 2 occurred in Spanish mackerel sets, and the remainder were in sets targeting kingfish, weakfish, or "finfish" (Rossman and Palka 2001; Waring et al. 2002).

The shark gillnet fishery operates in federal waters from southern Florida to southern Georgia. The fishery is defined by vessels using relatively large mesh nets (>10 inches) and net lengths typically greater than 1500 feet. The fishery primarily uses drifting nets that are set overnight; however, recently it has been employing a small number of shorter duration “strike” sets that encircle targeted schools of sharks. Since 1999, the Atlantic Large Whale Take Reduction Plan restricted the activities of the fishery to waters south of 27°51’ N latitude during the critical right whale season from 15 November – 31 March and mandated 100% observer coverage during this period. During the remainder of the year, these vessels generally operate north of Cape Canaveral, FL and there is little observer coverage of the fleet. The fishery potentially interacts with the Georgia, Northern Florida, and Central Florida management units of coastal bottlenose dolphin. During an observer program in 1993 and 1994 and limited observer coverage during the summer of 1998, no takes of bottlenose dolphin were observed (Trent et al. 1997; Carlson and Lee, 2000). However, takes resulting in mortality were observed in the Central Florida management unit during 1999 and 2000. Total bycatch mortality for this management unit has been estimated for 1999 and 2000 (Garrison 2001b).

A beach seine fishery operates along northern North Carolina beaches targeting striped bass, mullet, spot, weakfish, sea trout, and bluefish. The fishery operates on the Outer Banks of North Carolina primarily in the spring (April through June) and fall (October through December). It uses two primary gear types: a “beach anchored gill net” and a “beach seine.” Both systems utilize a small net anchored to the beach. The beach seine system also uses a bunt and a wash net that are attached to the beach and are in the surf (Steve et al. 2001). The North Carolina beach seine fishery has been observed since April 7, 1998 by the NMFS fisheries sampling program (observer program) based at the Northeast Fisheries Science Center. Through 2001, there were 101 sets observed during the winter season (Nov-Apr) and 65 sets observed during the summer season (May-Oct). A total of 2 coastal bottlenose dolphin takes were observed, 1 in May 1998 and 1 in December 2000. The beach seine observer data are currently being reviewed but estimates of mortality are not yet available (Waring et al. 2002).

Between 1994 and 1998, 22 bottlenose dolphin carcasses (4.4 dolphins per year on average) recovered by the Stranding Network between North Carolina and Florida’s Atlantic coast displayed evidence of possible interaction with a trap/pot fishery (i.e., rope and/or pots attached, or rope marks). Additionally, at least 5 dolphins were reported to be released alive (condition unknown) from blue crab traps/pots during this time period. In recent years, reports of strandings with evidence of interactions between bottlenose dolphins and both recreational and commercial crab-pot fisheries have been increasing in the Southeast Region (McFee and Brooks 1998). The increased reporting may result from increased effort towards documenting these marks or increases in mortality (Waring et al. 2002).

Data from the Chesapeake Bay suggest that the likelihood of bottlenose dolphin entanglement in pound net leads may be affected by the mesh size of the lead net (Bellmund et al. 1997), but the information is not conclusive. Stranding data for 1993-1997 document interactions between WNA coastal bottlenose dolphins and pound nets in Virginia. Two bottlenose dolphin carcasses were found entangled in the leads of pound nets in Virginia during 1993-1997, for an average of 0.4 bottlenose dolphin strandings per year. A third record of an entangled bottlenose dolphin in Virginia in 1997 may have been applicable to this fishery. This entanglement involved a bottlenose dolphin carcass found near a pound net with twisted line marks consistent with the twine in the nearby pound net lead rather than with monofilament gillnet gear. Given that other sources of annual serious injury and mortality estimates (e.g., observer data) are not available, the stranding data (0.4 bottlenose dolphins per year) were used as a minimum estimate of annual serious injury and mortality and this fishery was classified as a Category II fishery in the 2001 List of Fisheries (Waring et al. 2002).

The shrimp trawl fishery operates from North Carolina through northern Florida virtually year around, moving seasonally up and down the coast. One bottlenose dolphin was recovered dead from a shrimp trawl in Georgia in 1995 (Southeast USA Marine Mammal Stranding Network unpublished data), and another was taken in 1996 near the mouth of Winyah Bay, SC, during a research survey. No other bottlenose dolphin mortality or serious injury has been previously reported to NMFS (Waring et al. 2002).

The Atlantic menhaden purse seine fishery targets the Atlantic menhaden in Atlantic coastal waters. Smith (1999) summarized menhaden fishing patterns by the Virginia-North Carolina vessels from 1985-1996. Most of the catch and sets during that time occurred within three miles of the shore. Between 1994 and 1997, menhaden were processed at only three facilities, two in Reedville Beach, VA, and one in Beaufort, NC. Each of the Virginia facilities had a fleet of 9-10 vessels while the Beaufort facility is supported by 2-6 vessels. Since 1998, only one plant has operated in Virginia and the number of vessels has been reduced to ten in Virginia and two in North Carolina (Vaughan et al. 2001). The fishery moves seasonally, with most effort occurring off of North Carolina from November-January and moving northward to southern New England during warmer months. Menhaden purse seiners have reported an annual incidental take of 1 to 5 bottlenose dolphins, although observer data are not available (Waring et al. 2002).

From 1997-1999, 995 bottlenose dolphins were reported stranded along the Atlantic coast from New York to Florida (Hohn and Martone 2001; Hohn et al. 2001; Palka et al. 2001). Of these, it was possible to determine whether a human interaction had occurred for 449 (45%); for the remainder it was not possible to make that determination. The proportion of carcasses determined to have been involved in a human interaction averaged 34%, but ranged widely from 11-12% in Delaware and Georgia to 49% and 53% in Virginia and North Carolina, respectively.

The nearshore habitat occupied by the coastal morphotype is adjacent to areas of high human population and in the northern portion of its range is highly industrialized. The blubber of stranded dolphins examined during the 1987-88 mortality event contained anthropogenic contaminants in levels among the highest recorded for a cetacean (Geraci 1989). There are no estimates of indirect human-caused mortality resulting from pollution or habitat degradation.

The coastal migratory stock is designated as depleted under the MMPA. From 1995-2001, NMFS recognized only a single migratory stock of coastal bottlenose dolphins in the WNA and, therefore, the entire stock was listed as depleted. The management units in this report now replace the single coastal migratory stock. A re-analysis of the depletion designation on a management unit basis needs to be undertaken. In the interim, because one or more of the management units may be depleted, all management units retain the depleted designation. In addition, mortality in multiple units exceeded PBR (Waring et al. 2002). There are no rigorous results that would provide reliable information on current abundance relative to historical abundance. All prior estimates cover only part of the range of management units spatially or temporally, include the offshore morphotype, or are otherwise compromised. Population trends cannot be determined due to insufficient data. Over the past five years, estimated average annual mortality exceeded PBR in the mid-Atlantic gillnet fisheries for the northern migratory and northern NC management units during summer and for the NC mixed management units in winter (Waring et al. 2002).

The species is not listed as threatened or endangered under the Endangered Species Act, but because, as noted above, the stock is listed as depleted under the MMPA it is a strategic stock. This stock is also considered strategic under the MMPA because fishery-related mortality and serious injury exceed the potential biological removal level.

Hawksbill Sea Turtle

The following is a summary of information on the Hawksbill sea turtle made available by NMFS at the following website:
http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.html

The hawksbill occurs in tropical and subtropical seas of the Atlantic, Pacific and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean, with representatives of at least some life history stages regularly occurring in southern Florida and the northern Gulf of Mexico (especially Texas); in the Greater and Lesser Antilles; and along the Central American mainland south to Brazil. Within the United States, hawksbills are most common in Puerto Rico and its associated islands, and in the U.S. Virgin Islands. In the continental U.S., the species is recorded from all the gulf states and from along the eastern seaboard as far north as Massachusetts, with the exception of Connecticut, but sightings north of Florida are rare.

The hawksbill is a small to medium-sized sea turtle. In the U.S. Caribbean, nesting females average about 62-94cm in straight carapace length. Weight is typically to 80 kg in the wider Caribbean, with a record weight of 127 kg. Hatchlings average about 42 mm straight carapace length and range in weight from 13.5-19.5 g. The following characteristics distinguish the hawksbill from other sea turtles: two pairs of prefrontal scales; thick, posteriorly overlapping scutes on the carapace; four pairs of coastal scutes; two claws on each flipper; and a beak-like mouth. The carapace is heart-shaped in very young turtles, and becomes more elongate or subovate with maturity. Its lateral and posterior margins are sharply serrated in all but very old individuals.

Hawksbills utilize different habitats at different stages of their life cycle. Posthatchling hawksbills occupy the pelagic environment, taking shelter in weedlines that accumulate at convergence points. Hawksbills reenter coastal waters when they reach approximately 20-25 cm carapace length. Coral reefs are widely recognized as the resident foraging habitat of juveniles, subadults and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. The ledges and caves of the reef provide shelter for resting both during the day and night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. Hawksbills are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent. In Texas, juvenile hawksbills are associated with stone jetties.

Hawksbills utilize both low- and high-energy nesting beaches in tropical oceans of the world. Both insular and mainland nesting sites are known. Hawksbills will nest on small pocket beaches, and, because of their small body size and great agility, can traverse fringing reefs that limit access by other species. They exhibit a wide tolerance for nesting substrate type. Nests are typically placed under vegetation.

Incidental catch of hawksbill turtles during fishing operations is an unquantified and potentially significant source of mortality. Gill nets, longlines and shrimp trawls all take turtles in Gulf of Mexico waters. The extent to which hawksbills are killed or debilitated after becoming entangled in marine debris are unknown, but it is believed to be a serious and growing problem. Hawksbills have been reported entangled in monofilament gill nets, "fish nets", fishing line and rope. Hawksbill turtles eat a wide variety of debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts.

The most recent 5-year hawksbill turtle status review was completed in 2007 (NMFS and USFWS 2007) which included an examination of both recent and historic information on 83 hawksbill nesting sites distributed among 10 ocean regions around the world. Historic trends were determined for 58 of the 83 sites and all 58 (100%) showed a decrease in nesting abundance over time. Recent trends determined for 42 sites were more optimistic, with 10 (24%) increasing, 3 (7%) stable, and 29 (69%) in decline. Based on the best available information, NMFS and USFWS (2007) concluded that the hawksbill turtle should not be delisted or reclassified under the ESA. The review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if the application of the Distinct Population Segment policy under the ESA to the hawksbill turtle is warranted.

Leatherback Sea Turtle

Leatherback turtles (*Dermochelys coriacea*) were listed as endangered under the ESA on June 2, 1970. Leatherback turtles are widely distributed throughout the oceans of the world, and are found in waters of the Atlantic, Pacific, Caribbean, and the Gulf of Mexico (Ernst and Barbour 1972). It is the largest living turtle and ranges farther than any other sea turtle species, exhibiting broad thermal tolerances (NMFS and USFWS, 1995). Evidence from tag returns and strandings in the western Atlantic suggests that adults engage in routine migrations between boreal, temperate and tropical waters (NMFS and USFWS, 1992). Located in the northeastern waters during warmer months, this species is found in coastal waters of the continental shelf and near the Gulf Stream edge, but rarely in the inshore areas. A 1979 aerial survey of the outer Continental Shelf from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia showed leatherbacks to be present throughout the area with the most numerous sightings made from the Gulf of Maine south to Long Island. Shoop and Kenney (1992) also observed concentrations of leatherbacks during the summer off the south shore of Long Island and off New Jersey. This aerial survey estimated the leatherback population for the northeastern U.S. at approximately 300-600 animals (from near Nova Scotia, Canada to Cape Hatteras, North Carolina).

Leatherbacks are predominantly pelagic and feed on jellyfish (i.e., *Stomolophus, Chryaora*, and *Aurelia* (Rebel 1974)), cnidarians (*medusae, siphonophores*) and tunicates (*salps, pyrosomas*). Time-Depth-Recorder data recorded by Eckert et al. (1998b) indicate that leatherbacks are night feeders and are deep divers, with recorded dives to depths in excess of 1000 meters. However, leatherbacks may come into shallow waters if there is an abundance of jellyfish nearshore. Leary (1957) reported a large group of up to 100 leatherbacks just offshore of Port Aransas, Texas associated with a dense aggregation of *Stomolophus*. Leatherbacks also occur annually in places such as Cape Cod and Narragansett Bays during certain times of the year, particularly the fall.

Anthropogenic impacts to the leatherback population are similar to those for the loggerhead sea turtle, including fishery interactions as well as intense exploitation of the eggs (Ross 1979). Eckert (1996) and Spotila et al. (1996) recorded that adult mortality has also increased significantly, particularly as a result of driftnet and longline fisheries. Zug and Parham (1996) attribute the sharp decline in leatherback populations to the combination of the loss of long-lived adults due to fishery related mortality and the lack of recruitment (because of intense egg harvesting). Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and federal waters are known to negatively impact juvenile and adult leatherback sea turtles, including incidental takes in several commercial and recreational fisheries. Fisheries known or suspected to incidentally capture leatherbacks include those deploying bottom trawls, off-bottom trawls, purse seines, bottom longlines, hook and line, gill nets, drift nets, traps, haul seines, pound nets, beach seines, and surface longlines (NMFS and USFWS 1992). Leatherback interactions with the southeast shrimp fishery are also common. Turtle Excluder Devices (TEDs), typically used in the southeast shrimp fishery to minimize sea turtle/fishery interactions are less effective for the large-sized leatherbacks. As such, NMFS has used several alternative measures to protect leatherback sea turtles from lethal interactions with the shrimp fishery including establishment of a Leatherback Conservation Zone (60 FR 25260) and emergency measures such as the implementation of area specific 30-day TED requirements (December 8, 1999 (64 FR 69416)) when warranted. Leatherbacks are also susceptible to entanglement in lobster and crab gear, possibly as a result of attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, attraction to the buoys which could appear as prey, or the gear configuration which may be more likely to wrap around flippers.

Nest counts are currently the only reliable indicator of population status available for leatherback turtles. The status of the leatherback population in the Atlantic is difficult to assess since major nesting beaches occur over broad areas within tropical waters outside the United States. The most recent 5-year ESA leatherback turtle status review was completed in 2007 (NMFS & USFWS 2007c) which included an analysis of the most recent population and demographic data available for the species. The most recent population size estimate for the North Atlantic Ocean is a range of 34,000- 94,000 adult leatherbacks where the species appears to be stable or increasing (NMFS & USFWS 2007c). However, the East Pacific and Malaysian leatherback populations appear to have collapsed. Given the best available information, NMFS & USFWS (2007) concluded that the leatherback turtle should not be reclassified under the ESA and should remain listed as endangered. In addition, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to the endangered leatherback turtle is warranted.

Kemp’s Ridley Sea Turtle

Kemp's ridley turtles (*Lepidochelys kempii*) were listed as endangered under the ESA on December 2, 1970. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Juvenile Kemp's ridleys inhabit northeastern US coastal waters where they forage and grow in shallow coastal areas during the summer months. Juvenile ridleys migrate southward with autumnal cooling and are found predominantly in shallow coastal embayments along the Gulf Coast during the late fall and winter months. Ridleys found in mid-Atlantic waters are primarily post-pelagic juveniles averaging 40 cm in carapace length, and weighing less than 20 kg. After loggerheads, they are the second most abundant sea turtle in Virginia and Maryland waters, arriving there during May and June and then emigrating to more southerly waters from September to November. In the Chesapeake Bay, ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation (Lutcavage and Musick 1985).

The model presented by Crouse et al. (1987) illustrates the importance of subadults to the stability of loggerhead populations and may have important implications for Kemp's ridleys. The vast majority of ridleys identified along the Atlantic Coast have been juveniles and subadults. Sources of mortality in this area include incidental takes in fishing gear, pollution and marine habitat degradation, and other man-induced and natural causes. Loss of individuals in the Atlantic, therefore, may impede recovery of the Kemp's ridley sea turtle population. Sea sampling data from the northeast otter trawl fishery and southeast shrimp and summer flounder bottom trawl fisheries has recorded takes of Kemp's ridley turtles.

The Kemp's ridley population, as measured by number of nesting females, declined precipitously from the late 1940's through the mid-1980's. Due to intensive conservation actions, the Kemp's ridley began to slowly rebound during the 1990's and this increasing trend has continued to this day (NMFS & USFWS 2007d). Approximately 4,000 females are currently documented nesting annually, which is less than half of the downlisting criterion of 10,000 nests. As a result, the most recent five year review conducted by NMFS & USFWS 2007d concluded that the species should not be reclassified under the ESA and should remain listed as endangered. In addition, a full revision of the current Recovery Plan for the Kemp's ridley Sea Turtle (which was signed in 1992) is currently under way by the services.

Green Sea Turtle

Green sea turtles are more tropical in distribution than loggerheads, and are generally found in waters between the northern and southern 20°C isotherms. In the western Atlantic region, the summer developmental habitat encompasses estuarine and coastal waters as far north as Long Island Sound, Chesapeake Bay, and the North Carolina sounds, and south throughout the tropics (NMFS 1998). Most of the individuals reported in U.S. waters are immature (NMFS 1998). Green sea turtles found north of Florida during the summer must return to southern waters in autumn or risk the adverse effects of cold temperatures.

There is evidence that green turtle nesting has been on the increase during the past decade. For example, increased nesting has been observed along the Atlantic coast of Florida on beaches where only loggerhead nesting was observed in the past (NMFS 1998). Recent population estimates for the western Atlantic area are not available. Green turtles are threatened by incidental captures in fisheries, pollution and marine habitat degradation, destruction/disturbance of nesting beaches, and other sources of man-induced and natural mortality.

Juvenile green sea turtles occupy pelagic habitats after leaving the nesting beach. At approximately 20 to 25 cm carapace length, juveniles leave pelagic habitats, and enter benthic foraging areas, shifting to a chiefly herbivorous diet (NMFS 1998). Post-pelagic green turtles feed primarily on sea grasses and benthic algae, but also consume jellyfish, salps, and sponges. Known feeding habitats along U.S. coasts of the western Atlantic include shallow lagoons and embayments in Florida, and similar shallow inshore areas elsewhere (NMFS 1998). Sea sampling data from the summer flounder bottom trawl fishery has recorded incidental takes of green turtles

The most recent 5-year ESA green sea turtle status review was completed in 2007 (NMFS & USFWS 2007a) which included an analysis of the most recent population and demographic data available for green sea turtles. Overall, of the 23 threatened population nesting sites for which data are available, 10 nesting populations are increasing, 9 are stable, and 4 are decreasing (NMFS & USFWS 2007a). Long term continuous data sets (i.e., ≥ 20 years) are available for nine sites, all of which are increasing. Despite the apparent global increase in numbers, NMFS & USFWS (2007a) noted that this positive overall trend should be viewed with caution because trend data are available for just over half of all sites examined. Within the Western Atlantic/Caribbean, there are five threatened breeding populations, all of which appear to be stable or increasing (NMFS & USFWS 2007a). The green turtle nesting population of Florida, which is listed as endangered, also appears to be increasing based on 18 years (1989-2006) of index nesting data collected throughout the state (NMFS & USFWS 2007a). While green turtle nest counts have generally increased, NMFS & USFWS (2007a) concluded that populations of both endangered and threatened green turtles should not be reclassified under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to both endangered and threatened green turtle populations is warranted.

Loggerhead Sea Turtle

The loggerhead sea turtle occurs throughout the temperate and tropical regions of the Atlantic, Pacific and Indian Oceans (Dodd 1998). The loggerhead turtle was listed as "threatened" under the ESA on July 28, 1978, but is considered endangered by the World Conservation Union (IUCN) and under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). Loggerhead sea turtles are found in a wide range of habitats throughout the temperate and tropical regions of the Atlantic. These habitats include open ocean, continental shelves, bays, lagoons, and estuaries (NMFS& USFWS 2007b).

Because they are limited by water temperatures, loggerhead sea turtles do not usually appear on the summer foraging grounds in the Gulf of Maine until June, but are found in Virginia as early as April. They remain in these areas until as late as November and December in some cases, but the large majority leaves the Gulf of Maine by mid-September. Loggerheads are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (NMFS & USFWS 1995).

The most recent 5-year ESA loggerhead sea turtle status review was completed in 2007 (NMFS & USFWS 2007b) which included a review of the most recent research results for loggerhead sea turtles. Genetic analyses conducted since the last five-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 *Federal Register* 64585; November 16, 2007). NMFS has found that the petition presented substantial scientific information and in 2008, NMFS and FWS convened a biological review team (BRT), which recently completed a status review on the loggerhead sea turtle. The BRT evaluated genetic data, tagging and telemetry data, demographics information, oceanographic features, and geographic barriers to determine whether population segments exist. The BRT submitted their independent report to NMFS and FWS on August 11, 2009, to review and determine what, if any, action is appropriate under the ESA.

Shortnose Sturgeon

Shortnose sturgeon occur in large rivers along the western Atlantic coast from the St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while northern populations are amphidromous (NMFS 1998). Population sizes vary across the species' range with the smallest populations occurring in the Cape Fear and Merrimack Rivers and the largest populations in the Saint John and Hudson Rivers (Dadswell 1979; NMFS 1998).

Shortnose sturgeon are benthic and mainly inhabit the deep channel sections of large rivers. They feed on a variety of benthic and epibenthic invertebrates including mollusks, crustaceans (amphipods, chironomids, isopods), and oligochaete worms (Vladakov and Greeley 1963; Dadswell 1979). Shortnose sturgeon are long-lived (30 years) and mature at relatively old ages. In northern areas, males reach maturity at 5-10 years, while females reach sexual maturity between 7 and 13 years.

In the northern part of their range, shortnose sturgeon exhibit three distinct movement patterns that are associated with spawning, feeding, and overwintering periods. In spring, as water temperatures rise above 8° C, pre-spawning shortnose sturgeon move from overwintering grounds to spawning areas. Spawning occurs from mid/late April to mid/late May. Post-spawned sturgeon migrate downstream to feed throughout the summer.

As water temperatures decline below 8° C again in the fall, shortnose sturgeon move to overwintering concentration areas and exhibit little movement until water temperatures rise again in spring (NMFS 1998). Young-of-the-year shortnose sturgeon are believed to move downstream after hatching (NMFS 1998) but remain within freshwater habitats. Older juveniles tend to move downstream in fall and winter as water temperatures decline and the salt wedge recedes. Juveniles move upstream in spring and feed mostly in freshwater reaches during summer.

Shortnose sturgeon spawn in freshwater sections of rivers, typically below the first impassable barrier on the river (e.g., dam). Spawning occurs over channel habitats containing gravel, rubble, or rock-cobble substrates (NMFS 1998). Environmental conditions associated with spawning activity include decreasing river discharge following the peak spring freshet, water temperatures ranging from 9 -12 C, and bottom water velocities of 0.4 - 0.7 m/sec (NMFS 1998).

Atlantic salmon

The recent ESA-listing for Atlantic salmon covers the wild population of Atlantic salmon found in rivers and streams from the lower Kennebec River north to the U.S.-Canada border. These include the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot Rivers and Cove Brook. Atlantic salmon are an anadromous species with spawning and juvenile rearing occurring in freshwater rivers followed by migration to the marine environment. Juvenile salmon in New England rivers typically migrate to sea in May after a two to three year period of development in freshwater streams, and remain at sea for two winters before returning to their U.S. natal rivers to spawn from mid October through early November. While at sea, salmon generally undergo an extensive northward migration to waters off Canada and Greenland. Data from past commercial harvest indicate that post-smolts overwinter in the southern Labrador Sea and in the Bay of Fundy. The numbers of returning wild Atlantic salmon within the Gulf of Maine Distinct Population Segment (DPS) are perilously small with total run sizes of approximately 150 spawners occurring in 1999 (Baum 2000). Although capture of Atlantic salmon has occurred in commercial fisheries (usually otter trawl or gillnet gear) or by research/survey, no salmon have been reported captured in the Atlantic surfclam and ocean quahog fisheries.

2011 Summer Flounder, Scup,
and Black Sea Bass Specifications
Supplemental Environmental Assessment

January 2011

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

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Initial draft EA submitted by the MAFMC: October 1, 2010
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Final EA document: December 15, 2011
Supplemental EA submitted by the MAFMC: January 26, 2011

EXECUTIVE SUMMARY

The supplemental EA (SEA) updates the previously approved EA (December 15, 2010; attached) that analyzed the 2011 specifications for summer flounder, scup, and black sea bass. These specifications were published by NOAA's National Marine Fisheries service (NMFS) in the *Federal Registe*r on December 28, 2010 (75 FR 81498), and became effective on January 1, 2011. This document is not a stand-alone document, but rather a SEA, intended to be utilized in conjunction with the attached 2011 Summer Flounder, Scup, Black Sea Bass Specifications Environmental Assessment, December 2010 version. Unless otherwise noted, the initial 2011 Specifications Environmental Assessment prepared for this action and attached to this supplemental remains applicable, including the affected environment. Sections addressed in this supplemental EA should be considered within the context of the full 2011 Specifications Environmental Assessment.

The final rule established the 2011 scup specifications based on the Council's preferred Alternative 1. However, at the Council's December 14-16, 2010 meeting, the Council approved a motion to increase the 2011 total allowable landings (TAL) to the level associated with a 5.74 million lb recreational harvest limit and maintain status quo scup recreational measures in federal and state waters. This action was taken to prevent potential negative impacts on recreational fishermen and provide for recreational fishing opportunities which might not be available under a more restrictive TAL.

This revised Council-preferred alternative for scup specifications (alternative 1B in this supplement) includes a total allowable catch (TAC; catch includes both landings and discards) of 31.92 million lb and a TAL of 26.50 million lb. This is less than the acceptable biological catch (ABC) of 51.70 million lb (i.e., associated landings of 42.9 million lb), as recommended by the Council's scientific advisors, the Science and Statistical Committee (SSC). In addition, the SSC and the Council's Scup Monitoring Committee advised against "rapid increases in quota to meet the revised MSY [maximum sustainable yield]"; the increase in 2011 scup specifications is less than MSY of 35.60 million lb (i.e., landings of 28.96 million lb). The revised Council-preferred alternative is therefore within the range of recommendations of the SSC and Scup Monitoring Committee.

PURPOSE AND NEED

The purpose of both this and the original approved action is to implement 2011 specifications for the scup fishery consistent with the Magnuson-Stevens Fishery Conservation and Management Act[1] (MSA). Specifications for scup, derived from the TAC and initial TAL, include a commercial fishery quota, recreational harvest limit (RHL), and a research set aside (RSA) of 396,500 lb for the 2011 fishing year. The revised Council-preferred specifications for scup under alternative 1B comply with the MSA, including the national standards for fishery conservation and management, the Summer Flounder, Scup, and Black sea Bass Fishery Management Plan (FMP), and the FMP amendments.

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[1] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

PROPOSED ACTION

Revised Council-preferred alternative 1B for scup recommends a TAL of 26.50 million lb for 2011. Discards estimates generated by the scup stock assessment of 5.42 million lb were subtracted from the TAC of 31.92 million lb to derive this initial TAL. The TAL associated with revised Council-preferred alternative 1B is 33 percent higher than alternative 1 (i.e., TAL of 20.00 million lb) in the original EA, 88 percent higher than status quo alternative 2 (i.e., TAL of 14.11 million lb TAL), and 8 percent less than alternative 3 (i.e., TAL=MSY of 28.96 million lb).

The TAC is allocated to the commercial and recreational fisheries based on the proportions of commercial and recreational catches for the years 1988-1992. Based on this data, 78 percent of the TAC is allocated to the commercial fishery and 22 percent to the recreational fishery.

NMFS approved a scup RSA for 2011 of 396,500 lb, which is about 1 percent of the TAL. After deducting RSA from the initial TAL (i.e., 26.50 million lb), the Council-adjusted commercial quota is 20.36 million lb and the adjusted recreational harvest limit is 5.74 million lb.

Framework Adjustment 3 to the FMP allows for the transfer of unused scup quota from the Winter I to the Winter II period. As such, if the fishery does not land their quota in Winter I, the opportunities to land those scup are not lost for the fishing year. The current scup period allocation formula remains unchanged as detailed below in Box 1, which updates Box 5.2.1.2 in the original EA.

Box 1.Commercial scup quota alternative, by period, for 2011.

Period	Percent Allocation	Adjusted Quota (million lb) Alternative 1B
Annual	100.00	20.36
Winter I (Jan-April)	45.11	9.18
Summer (May-Oct)	38.95	7.93
Winter II (Nov-Dec)	15.94	3.25

NO ACTION ALTERNATIVE

The no action alternative, as defined in section 5.5 of the EA, is incorporated by reference in this supplement. As outlined in the EA, the no action alternative is not the same as the status quo. The no action alternative is inconsistent with the goals and objectives of the FMP, as well as its implementing regulations, and may result in overfishing or cause the level of acceptable biological catch (ABC) for summer flounder, scup, and/or black sea bass to be exceeded. By not preventing overfishing and/or allowing the ABC to be exceeded, it is also inconsistent with the MSA.

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

The affected environment, as defined in 6.0 of the EA, is incorporated by reference in this supplement. The scup stock is not overfished and not subject to overfishing based on the most recent stock update. The stock supports both a commercial and recreational fishery. Interactions with protected and endangered species, as well as interactions with Essential Fish Habitat, are well described in the EA's affected environment section incorporated by reference here.

SUPPLEMENTAL ENVIRONMENTAL IMPACTS

The revised specification level for scup proposed under Alternative 1B is within the range of previously analyzed alternatives in the original EA. It is 33 percent higher than alternative 1 (i.e., TAL of 20.00 million lb) in the original EA, 88 percent higher than *status quo* alternative 2 (i.e., TAL of 14.11 million lb TAL), and 8 percent less than alternative 3 (i.e., TAL=MSY of 28.96 million lb). Under alternative 1B, the revised 2011 adjusted commercial quota is approximately 90 percent higher when compared to the 2010 commercial quota of 10.68 million lb (i.e., *status quo)*. The 2011 adjusted recreational limit under alternative 1B is approximately 90 percent higher than the recreational harvest limit in 2010 of 3.01 million lb (i.e., *status quo)*.

The impacts of the change in 2011 scup catch level are not expected to significantly differ from those catch levels previously analyzed in the original EA, as shown in Box 2 below which updates Box ES-2 of the original EA.

Box 2. Updated Overall qualitative summary of the expected impacts of various scup alternatives considered in this document (2011). A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). An 'S' indicates short-term, and an 'L' is indicates long-term impacts. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

		Biological	EFH	Protected Resources	Economic	Social
Scup	**Alternative 1** (Original EA Council-Preferred)	+	0/-(u)	0/-(u)	+S/+L	+S/+L
	Alternative 1B (Revised Council-Preferred)	+	0/-(u)	0/-(u)	+S/+L	+S/+L
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	+	0	0	0S/+L	0S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/-(u)	0/-(u)	+S/-L(u)	+S/-L(u)

Biological Impacts

None of the scup alternatives analyzed in the original EA or the proposed measures contained in this supplement would result in scup catch exceeding the ABC identified by the SSC for 2011. The original EA indicated that the most liberal (i.e., highest) scup specifications alternative analyzed by the Council would have potential negative impacts, because of the SSC and Scup Monitoring Committee advice against "rapid increases in quota to meet the revised MSY". The revised Council-preferred alternative 1B is within the range of recommendations of the SSC and Scup Monitoring Committee. Even though alternative 1 represents an increase in overall TAL, commercial quota, and recreational harvest limit when compared to the *status quo*, it is consistent with the best scientific information available at the time and continues to reflect Council concerns about rapid increases in quotas relative to MSY. Revised alternative 1B is therefore expected to result in positive biological impacts, relative to 2010. This is consistent with the findings of the original EA, which evaluated biological impacts for scup alternatives 1, 2, and 3, and suggested negative biological impacts would be expected if TALs were set at or above MSY.

Impacts on Habitat, Including Essential Fish Habitat (EFH)

The principal commercial gear types used to harvest scup are otter trawls and floating traps, and to a lesser extent fish pots and hand lines. Mobile bottom tending and stationary gears have a potential to adversely impact EFH. The scup fishery in federal waters is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Additional applicable analyses and discussion in section 6.2 of the original EA also apply here. Nominal increases in commercial fishing effort or changes in fishery efficiency from more liberalized possession limits as a result of alternative 1B are expected to have neutral to potentially negative impacts on EFH.
There is uncertainty about the negative impacts to habitat and EFH which results from the inability to quantify if the scup fishery will be made more efficient through higher possession limits, changes in species abundance (i.e. changes in availability resulting in increased catch-per-unit-effort), or if more effort will result from the higher catch levels permitted. While Federal waters have established possession limits by fishing period, individual states also set possession limits for state waters and the Council cannot predict the behavioral response the states may have to trip limits adjustments as a result of implementing a higher commercial quota. Regardless, in Federal waters the scup fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Given the range of potential habitat impacts and depending upon how effort changes in 2011 as a result of the commercial quota increase and those other factors described above, revised alternative 1B is expected to have effects on habitat and EFH that range from impacts the same to negative, when compared to existing impacts. This is consistent with the findings of the original EA, which evaluated habitat impacts for scup alternatives 1, 2, and 3, and suggested neutral to negative habitat impacts would be expected if catch levels are substantially increased.

Impacts on Endangered and Other Protected Resources

The principal commercial gear types used to harvest scup are otter trawls and floating traps, and to a lesser extent fish pots and hand lines. Additional applicable analyses and discussion in section 6.3 of the original EA also applies here. Nominal increases in commercial fishing effort or changes in fishery efficiency from more liberalized possession limits as a result of alternative 1B are expected to have impacts that could potentially range from the same to negative impacts on endangered and protected resources if there are increases in the encounter rates with fishing gear.

There is uncertainty about the negative impacts to endangered and protected resources which results from the inability to quantify if the scup fishery will be made more efficient through higher possession/trip limits, changes in species abundance (i.e., changes in availability resulting in increased catch-per-unit-effort), or if in fact an increase in effort will result from the higher catch levels permitted. Effort would not be expected to increase in direct proportion to the increase in allowable landings. While Federal waters have established possession limits by fishing period, individual states also set possession limits for state waters and the Council cannot predict the behavioral response the states may have to trip limit adjustments or other management measures as a result of implementing a higher commercial quota. However, it may be reasonable to expect that states may liberalize possession limits which could result in an equal or lower number of fishing trips landing a larger volume of fish. In addition, there are other factors that affect effort, of which market supply demand and price are important considerations. For example, in Amendment 14 to the FMP (MAFMC 2007), a log-linear model was developed to examine the price and volume relationship for the scup fishery. The value of the landings parameter (-0.57) in that model indicates that if scup landings increase by 1 percent, the ex-vessel price per pound paid to harvesters declines by 0.57 percent; the relationship is not linear and suggests that a change in landings from 10-15 million does not have the same effect as from 30-35 million lb (MAFMC 2007). This suggests that the availability of additional quota could affect ex-vessel price, and perhaps have an influence in the expected fishing effort as some individual trips may be less lucrative.

An examination of 2009 NMFS vessel trip report (VTR) data on the distribution of catch in 2009 by gear and period suggests that 64 percent of the scup catch in 2009 occurred in Winter I (January-April) by bottom otter trawl (fish); followed by 19 percent in Winter II (November-December) by bottom otter trawl (fish); and in the Summer period (May-October), bottom otter trawl (fish) contributed 9 percent of the catch, followed by 4 percent from floating traps, and 1 percent from hand lines. The remaining 3 percent of 2009 scup catch was scattered across other gear types throughout the year. Examining the distribution of the fishery catch by statistical area (Figure 4 of the original EA) and period, greater than 5 percent of the 2009 scup catch occurred in statistical areas 616, 613, 622, 615, 537 during Winter I (1-5 percent catch in statistical areas 621, 611, and 539 in Winter I); during the Summer in statistical area 539 (1-5 percent catch in 611, 538, 537, 613 in Summer); and during Winter II in statistical areas 613 and 539 (1-5 percent catch in 537, 611, 615, 616, 612 in Winter II). The seasonal/spatial extent of the fishery is important given the availability of endangered and protected resources to scup fishing gears is also affected by protected resource distribution. In addition, the stock status (i.e., increasing or decreasing stock size) of these protected species may affect interaction rates.

Loggerhead, leatherback, Kemp's ridley, and green sea turtles occur seasonally in southern New England and Mid-Atlantic continental shelf waters north of Cape Hatteras. In general, turtles move up the coast from southern wintering areas as water temperatures warm in the spring (James *et al*. 2005; Morreale and Standora 2005; Braun-McNeill and Epperly 2004; Morreale and Standora 1998; Musick and Limpus 1997; Shoop and Kenney 1992; Keinath *et al.* 1987). The trend is reversed in the fall as water temperatures cool. By December, turtles have passed Cape Hatteras, returning to more southern waters for the winter (James *et al*. 2005; Morreale and Standora 2005; Braun-McNeill and Epperly 2004; Morreale and Standora 1998; Musick and Limpus 1997; Shoop and Kenney 1992; Keinath *et al.* 1987). Hard-shelled species are typically observed as far north as Cape Cod whereas the more cold-tolerant leatherbacks are observed in more northern Gulf of Maine waters in the summer and fall (Shoop and Kenney 1992; STSSN database). As described above based on the NMFS VTR data, the majority of scup catch occurs in winter when the expected interaction rates with sea turtles would be low, because of the migration of the turtles into more southerly areas.

Given the range of potential impacts on endangered and protected resources and depending upon how effort changes in 2011 as a result of the commercial quota increase and those other factors described above, revised alternative 1B is expected to have effects on endangered and protected resources that could potentially range from the same to negative impacts, when compared to existing impacts. This is consistent with the findings of the original EA, which evaluated endangered and protected resource impacts for scup alternatives 1, 2, and 3, and suggested neutral to negative endangered and protected resource impacts would be expected if the catch levels under those alternatives were implemented.

Socioeconomic Impacts

Alternative 1B is expected to result in positive socioeconomic impacts relative to established 2011 catch levels implemented by the original EA. Commercial fishing opportunities would increase approximately 90 percent when compared to the 2010 commercial quota of 10.68 million lb (i.e., *status quo)*. Furthermore, the 2011 adjusted recreational limit under this alternative is approximately 90 percent higher than the recreational harvest limit in 2010 of 3.01 million lb (i.e., *status quo)*. This would provide for additional commercial landings and potentially increased fishery efficiency through higher possession limits and/or longer seasons. In addition, greater recreational fishery opportunity would exist.

The combined revenue analysis of the preferred summer flounder, scup, and black sea bass (i.e., combined summer flounder alternative 1, scup alternative 1, and black sea bass alternative 1) presented in the original EA indicated that only vessels that landed black sea bass only (69 vessels) or a combination of black sea bass with scup (9 vessels) or black sea bass with summer flounder (11 vessels) were projected to incur in revenue losses of less than 5 percent when compared to the base year (2009 landings and revenues; Table 21 of the original EA). It is expected that given the additional commercial fishing opportunities for commercial scup fishermen under alternative 1B, the revenue losses for vessels that landed a combination of scup and black sea bass may decrease as a result of the additional increase in scup commercial quota.

Cumulative Impacts

Alternative 1B, the revised Council-preferred alternative, would not have a significant cumulative effect on any of the valued ecosystem components (VECs) outlined and described in section 6.0 of the original EA. This is consistent with the findings of the original EA, which considered the cumulative effects of the previous Council-preferred measure (i.e., summer flounder alternative 1, scup alternative 1, and black sea bass alternative 1). As previously stated, scup alternative 1B is within the range of scup catch level alternatives considered in the original EA (i.e., alternatives 1, 2, and 3).

Alternative 1B would increase catch levels above what was analyzed and implemented in the original EA and final rule. The cumulative effects under the revised Council-preferred measures (i.e., summer flounder alternative 1, scup alternative 1B, and black sea bass alternative 1) remains largely unchanged as the scup fishery would not experience overfishing nor would catch be expected to exceed the ABC, and the fisheries would likely be prosecuted in a similar manner when compared to previous years. Because the objectives of the FMP would continue to be met under alternative 1B, the original EA conclusion that the 2011 specifications would be expected positively reinforce the past, and anticipated positive cumulative effects on the scup stock. Alternative IB was not analyzed in the cumulative effects analyses in the original EA; however, the same discussion of past, present, and reasonably forseeable future actions relative to the valued ecosystem components in the original EA also apply here and are incorporated by reference. Therefore, no significant cumulative impacts are expected under Alternative 1B on non-target species or bycatch, habitat (including EFH), protected and endangered resources, and human communities. When this action (i.e., summer flounder alternative 1, scup alternative 1B, and black sea bass alternative 1) is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative (Box 1). Based on the information and analyses presented in past FMP documents, the original EA, and this supplemental document, there are no significant cumulative effects associated with alternative 1B in this supplemental document.

Box 1. Magnitude and significance of the cumulative effects; the additive and synergistic effects of the proposed action (summer flounder alternative 1, scup alternative 1B, and black sea bass alternative 1), as well as past, present, and future actions

VEC	Status in 2009	Net Impact of P, Pr, and RFF Actions	Impact of the Preferred Action	Significant Cumulative Effects
Managed Resource	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.1)	Neutral to negative and neutral to positive (Sections 7.1-7.5)	**None**
Non-target Species	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.2)	Neutral to negative and neutral to positive (Sections 7.1-7.5)	**None**
Habitat	Complex and	Neutral to positive	Neutral and	**None**

	variable (Section 6.2)	(Sections 7.6.4 and 7.6.5.3)	neutral to negative (Sections 7.1-7.5)	
Protected Resources	Complex and variable (Section 6.3)	Positive (Sections 7.6.4 and 7.6.5.4)	Neutral and neutral to negative (Sections 7.1-7.5)	**None**
Human Communities	Complex and variable (Section 6.4)	Positive (Sections 7.6.4 and 7.6.5.5)	Neutral to negative and neutral to positive short-term and long-term effects (Sections 7.1-7.5)	**None**

Finding of No Significant Impact

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 CFR §1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

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

The revised specifications presented in this SEA are not expected to jeopardize the sustainability of any target species affected by the action. The proposed specifications for scup, which include a TAL of 26.5 million lb, are consistent with the FMP objectives and the SSC advice for ABC. The proposed TAL is considered sustainable in the long-term and not expected to result in overfishing of scup stock. The proposed actions will ensure the long-term sustainability of harvests from the scup stock.

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

The revised specifications presented in this SEA are not expected to jeopardize the sustainability of any non-target species. The proposed measures are not expected to alter fishing methods or activities.

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

The proposed action as described in section 7.0 of the original EA and in this SEA is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, has the potential to adversely affect EFH for scup as detailed in section 6.2 of the original EA. The quota-setting measures proposed in this action could, under certain conditions, increase the amount of time that bottom trawling vessels spend fishing for scup, but the adverse impacts of this increased level of fishing on benthic habitats would not be expected to be significant. Neither these, nor any of the other measures included in the original EA or the SEA will have a significant adverse habitat impact.

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

None of the measures in the revised specifications alters the manner in which the industry conducts fishing activities for the target species. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on these fisheries, including the communities in which it operates, will not impact adversely public health or safety.

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

None of the original or revised specifications or RSA program is expected to alter fishing methods or activities. None of the original or revised specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort (see sections 7.0 of original EA and supplemental EA). Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the scup fishery.

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

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action revises the proposed annual commercial quotas and recreational harvest limits in 2011 for the scup fisheries. Neither the specifications nor RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort.

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

The proposed action is not expected to have a substantial impact on the natural or physical environment. Commercial capture of scup occurs predominately in the Mid-Atlantic mixed trawl, pot/trap, and hook and line fisheries. Bottom otter trawls have a potential to impact bottom habitat. However, none of the specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental effects as analyzed in the original EA.

8) Are the effects on the quality of the human environment likely to be highly controversial?

The impacts of the proposed specifications on the human environment are described in section 7.0 of the original EA. The proposed action considered in this supplemental EA revises the annual commercial quotas and recreational harvest limits in 2011 for the scup fisheries. The proposed action is based on measures contained in the FMP, which have been in place for many years. In addition, the scientific information upon which the annual quotas are based has been peer reviewed and is the most recent information available. Thus, the measures contained in this action are not expected to be highly controversial.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

This action revises the annual commercial quotas and recreational harvest limits in 2011 for the scup fisheries. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the action is not expected to have a substantial impact on any of these areas.

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

The impacts of the proposed measures on the human environment are described in section 7.0 of the original EA and in the Supplemental Environmental Impacts section above. The proposed action revises the annual commercial quota and recreational harvest limits in 2011 for the scup fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

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

As discussed in section 7.6 of the original EA and this SEA, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. The proposed actions, together with past, present, and future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The impacts of the proposed measures on the human environment are described in section 7.0 of the original EA and this SEA. The proposed action revises the annual commercial quota and recreational harvest limits in 2011 for the scup fisheries. The scup fishery is not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in, or eligible for listing in, the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

There is no evidence or indication that the scup fishery has ever resulted in the introduction or spread of nonindigenous species. None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

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

This action revises the proposed annual commercial quotas and recreational harvest limits in 2011 for the scup fisheries. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessment or other biological information about these species becomes available in the future, then the annual specifications will be adjusted according to the overfishing definitions contained in the FMP. None of these specifications or RSA program results in significant effects, nor do they represent a decision in principle about a future consideration.

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

This action revises the proposed annual commercial quota and recreational harvest limit in 2011 for the scup fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities such that they threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws (see sections 8.2-8.11 of the original EA).

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

The impacts of the alternatives on the biological, physical, and human environment are described in section 7.0 of the original EA and in this SEA above. In this SEA, the revised limits on scup are not expected to substantially increase fishing effort or the spatial and/or temporal distribution of fishing effort; therefore, no significant cumulative adverse effects are anticipated. The synergistic interaction of improvements in the efficiency of the fishery consistent with the FMP and scientific advice is expected to generate positive impacts overall.

DETERMINATION

In view of the information presented in this document to supplement the analyses contained in original environmental assessment prepared for the 2011 summer flounder, scup, and black sea bass fisheries specifications, it is hereby determined that the proposed actions analyzed in this supplemental environmental assessment will not significantly impact the quality of the human environment as described above and in the original environmental assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

______________________________________ __________________

Regional Administrator for NERO, NMFS, NOAA *Date*

List of Agencies and Persons Consulted

In preparing this document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS NERO personnel was sought.

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2011 Summer Flounder, Scup, and Black Sea Bass Specifications Environmental Assessment Initial Regulatory Flexibility Analysis

December 2010

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service

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1.0 EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (Council) in consultation with the National Marine Fisheries Service (NMFS). The purpose of this action (specifications document) is to implement 2011 total allowable catch (TAC), total allowable landings (TAL), commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to prevent overfishing, ensure acceptable biological catch (ABC) limits are not exceeded, and in the case of summer flounder, ensure rebuilding occurs on schedule[1].

This specifications document was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act[2] (MSA) and the National Environmental Policy Act (NEPA), the former being the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ). Although this document has been prepared primarily in response to the requirements of the MSA and NEPA, it also addresses requirements of the Marine Mammal Protection Act (MMPA), Endangered Species Act (ESA), Regulatory Flexibility Act (RFA), Administrative Procedure Act (APA), Paperwork Reduction Act (PRA), Coastal Zone Management Act (CZMA), the Information Quality Act (IQA), and Executive Order 12866 (Regulatory Planning and Review). These applicable laws and executive orders help ensure that the Council considers the full range of alternatives and their expected impacts on the marine environment, living marine resources, and affected human communities. This integrated document contains all required elements of an environmental assessment including a socioeconomic analysis as required by NEPA.

This specifications document details all management alternatives for summer flounder, scup, and black sea bass fisheries evaluated for a one year period (2011). Under the FMP, the no action alternatives for summer flounder, scup, and black sea bass are not equivalent to the *status quo*. If the actions proposed in this document are not taken, some current management measures will remain in place, but the overall management program will not be identical to that of 2010. The “true” no action alternative for each fishery is infeasible and inconsistent with the MSA; therefore, the no action alternatives are presented in section 5.5 of this document but not analyzed further. For comparison purposes, the alternatives in this specifications document are compared to the *status quo* alternatives (base line) as opposed to the “true” no action alternatives. The base line condition is the adjusted quotas for 2010 (quotas adjusted for research set-aside (RSA) and/or overages/quotas restorations).

[1] The Council and ASMFC Summer Flounder, Scup and Black Sea Bass Board (Board) will meet in December 2010 to adopt 2011 recreational management measures when more complete data regarding 2010 recreational landings are available. A comprehensive document which analyzes the impacts of recreational management measures for summer flounder, scup, and black sea bass (i.e., bag limits, size limits, and seasonal closures) will be prepared after the December Council meeting.
[2] Magnuson-Stevens Fishery Conservation and Management Act, portions retained plus revisions made by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006.

Quota Alternatives

The proposed actions in this specifications document would only modify the 2011 commercial quotas and recreational harvest limits (Box ES-1). Changes to other commercial management measures (i.e., minimum fish size, mesh size, possession limits, and other gear regulations) are not recommended for 2011. Therefore, these other commercial management measures would remain *status quo* for the 2011 fishing year (see section 5.5 for additional discussion).

Box ES-1. Comparison of the summer flounder, scup, and black sea bass quota alternatives, in million lb, analyzed in this specifications document.

		Initial TAL	Research Set-Aside[b]	Council-adjusted Commercial Quota	Council-adjusted Recreational Harvest Limit
Summer Flounder [a]	**Alternative 1** (Preferred) (Preferred)	29.48	0.88	17.16	11.44
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	22.13	0.66	12.88	8.59
	Alternative 3 (Non-Preferred: Least Restrictive)	35.05	1.05	20.40	13.60
Scup[a]	**Alternative 1** (Preferred)	20.00	0.60	15.13	4.27
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	14.11	0.42	10.68	3.01
	Alternative 3 (Non-Preferred: Least Restrictive)	28.96	0.87	21.91	6.18
Black Sea Bass[a]	**Alternative 1** (Preferred: *Status quo* (No Action)) [b]	3.60	0.11	1.71	1.78
	Alternative 2 (Non-Preferred: Most Restrictive)	2.30	0.07	1.09	1.14
	Alternative 3 (Non-Preferred: Least Restrictive)	4.35	0.13	2.07	2.15

[a] As discussed below, the no action alternative (no TAL specified for 2011) for each species is presented in section 5.5 but is not analyzed.
[b] For analysis of the alternatives in this specifications document, the RSA amount deducted from each TAL is 3 percent of the TAL.
[c] This alternative is noted as status quo (no action) because the ABC=TAC receommendations were identical to the 2010 Council recommendations; however, the 2011 TAL is 0.10 million lb less due to a higher projected discard estimate for 2011 relative to 2010. Therefore, while the TALs are very similar they are not exactly the status quo (no action).

Summary of Alternatives

The following section presents a qualitative summary of expected impacts, by species, research set-aside, and cumulatively, for the alternatives under consideration for 2011. For purposes of impact evaluation, *status quo* alternatives are compared to 2010 condition, while all other alternatives are compared to the *status quo* alternative. Black sea bass alternative 2 is noted as status quo (no action) because the ABC=TAC receommendations were identical to the 2010 Council recommendations; however, the 2011 TAL is 0.10 million lb less due to a higher projected discard estimate for 2011 relative to 2010. Therefore, while the TALs are very similar they are not exactly the status quo (no action). As previously discussed, the no action alternative for each species is presented in section 5.5 but is not analyzed.

Summer Flounder

The preferred alternative 1 is expected to result in positive biological impacts on the managed resource in 2011, when compared to the *status quo* (alternative 2; Box ES-2). The stock is expected to increase under this alternative, the likelihood of overfishing is projected to be low, and it is consistent with the advice of the Council's scientific and technical advisors, the Science and Statistical Committee (SSC). Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would result in positive stock growth towards rebuilding goals. These measures will likely result in no changes to the incidental catch rates of other species relative to the *status quo* alternative.

Non-preferred alternative 2 is expected to result in positive biological impacts on the managed resource in 2011, when compared to 2010. Although the TAL proposed under alternative 2 is the same TAL that was implemented in 2010, the biological impacts of that TAL on the managed resource are not the same across years. Stock demographics change and the relative biological impacts of that TAL also changes. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure both sustainability of the stock and rebuilding goals are met, and the impacts under this alternative would be more positive than under the preferred alternative (alternative 1). Under this alternative, it may be less likely that overfishing will occur. Similar to alternative 1, alternative 2 is not expected to alter the incidental catch rates of other species.

Non-preferred alternative 3 is expected to have negative biological impacts on the managed resource in 2011, when compared to the *status quo*. This least restrictive alternative is inconsistent with the advice of the Council's scientific and technical advisors. Ranking these three TAL alternatives from more likely to less likely to prevent overfishing and achieve rebuilding, they rank as alternative 2, alternative 1, and alternative 3.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same (as expected under alternative 2), to the same to negative through increased fishing effort (as expected under alternatives 1 and 3), when compared to existing impacts.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects that range from the same (as expected under alternative 2), to the same to negative due to increased fishing effort (as expected under alternatives 1 and 3), when compared to existing impacts.

Under alternative 1, it is expected that short-term positive social and economic impacts may occur because of the increase in total landings (in 2011), relative to the *status quo*. There may be positive social and economic impacts that will be realized in the long-term, if the stock size continues to rebuild and if the target fishing mortality rates are not exceeded. Given that the commercial quotas and recreational harvest levels under alternative 2 (*status quo*) are the same as in 2010; therefore, it is expected there will be neutral to slight positive short-term social and economic impacts. However, positive social and economic impacts are expected in the long-term, if the stock size continues to grow. Under alternative 3, it is expected that short-term positive social and economic impacts may occur because of the increase in total landings (in 2011), relative to the *status quo*. However, due to the potential negative biological impact to the stock associated with these landings levels, including slowed or negative gains in rebuilding efforts, negative social and economic impacts in the long-term could occur.

Scup

The preferred alternative 1 is expected to result in positive biological impacts on the managed resource in 2011, when compared to the *status quo* (Box ES-2). This TAL is consistent with the Council's scientific and technical advisors, the SSC and Scup Monitoring Committee. Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time of specifications and addressed scientific concerns about rapidly increasing the TAL to meet maximum sustainable yield (MSY). This alternative will likely result in no change in the incidental catch rates of other species relative to 2010.

Non-preferred alternative 2 (*status quo*) is expected to result in positive biological impacts on the managed resource in 2011, when compared to 2010. Although the TAL proposed under alternative 2 is the same as the TAL that was implemented in 2010, the biological impacts of these TALs on the managed resource are not similar across years. Stock demographics change and the relative biological impacts of TALs also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the preferred alternative (alternative 1).

Non-preferred alternative 3 is expected to result in negative biological impacts on the managed resource in 2011, when compared to the *status quo*, given the Council was cautioned by the SSC and Scup Monitoring Committee about concerns with rapid increases to be MSY given scientific uncertainty. Alternatives 2 and 3 are not expected to result in changes to the incidental catch rates of other species.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same (as expected under alternative 2), to the same to negative through increased fishing effort (as expected under alternatives 1 and 3), when compared to existing impacts.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects that range from the same (as expected under alternative 2), to the same to negative due to increased fishing effort (as expected under alternatives 1 and 3), when compared to existing impacts.

It is expected that positive short-term social and economic impacts may occur under alternative 1 when compared to the *status quo*. Alternative 2 contains the *status quo* measures, which are the same as in 2010. As such, alternative 2 would result in neutral social and economic impacts in the short-term when compared to 2010. Long-term positive social and economic impacts would be anticipated under alterntaives 1 and 2. Alternative 3 (also least restrictive) will likely result in positive social and economic impacts on the scup fisheries compared to the *status quo* in the short-term. However, due to the potential negative impact to the stock associated with these landings levels because the Council was cautioned by the SSC and Scup Monitoring Committee about concerns with rapid increases to be MSY given scientific uncertainty, potential negative social and economic impacts in the long-term could occur.

Black Sea Bass

The preferred alternative 1 (*status quo*) is expected to result in positive biological impacts on the managed resource in 2011, when compared to 2010 (Box ES-2). This TAL is consistent with both the SSC recommendations for ABC and the TAC recommended Black Sea Bass Monitoring Committee. Although the TAL proposed under alternative 1 is the nearly the same TAL that was implemented in 2010 (i.e., slightly lower TAL due to higher discard estimate), the biological impacts of this TAL on the managed resource is not similar across years. Stock demographics change and the relative biological impacts of TALs also change. This TAL is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock. Alternative 1 will likely result in no change in the incidental catch rates of other species relative to 2010.

Non-preferred alternative 2 is expected to result in positive biological impacts on the managed resource in 2011, when compared to the *status quo*. The best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the alternative 1.

Non-preferred alternative 3 is expected to result in negative impacts on the managed resource in 2011, when compared to 2010. This alternative results in a TAL that is higher than the TAL that would be associated with the SSC's ABC recommendation. Both alternatives 2 and 3 are not expected to change the incidental catch rates of other species compared to the *status quo*.

Given the range of potential habitat impacts, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects on habitat and EFH that range from the same (as expected under alternatives 1 *status quo*) to impacts that are the same to positive through decreased fishing effort (as expected under alternative 2), to impacts that are the same to slight negative (as expected under alternative 3), when compared to existing impacts.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases, these three alternatives are expected to have effects that range from from the same (as expected under alternatives 1 *status quo*) to impacts that are the same to positive through decreased fishing effort (as expected under alternative 2), to impacts that are the same to slight negative (as expected under alternative 3), when compared to existing impacts.

Given that the commercial quotas and recreational harvest levels under alternative 1 (*status quo*) are slightly lower than those in 2010, it is expected there will be slight negative short-term social and economic impacts. However, positive social and economic impacts are expected in the long-term, if the stock size continues to grow. Alternative 2 (also most restrictive) will likely result in negative social and economic impacts on the black sea bass fishery compared to the *status quo* in the short-term with potential positive impacts in the long-term. Alternative 3 (also least restrictive) would allow for the largest positive social and economic impacts in the short-term when compared to *status quo*. However, due to the potential negative impact to the stock associated with these landings levels, potential negative social and economic impacts could occur in the long-term.

Box ES-2. Overall qualitative summary of the expected impacts of various summer flounder, scup, and black sea bass alternatives considered in this document (2011). A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). An 'S' indicates short-term, and an 'L' is indicates long-term impacts. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

		Biological	EFH	Protected Resources	Economic	Social
Summer Flounder	**Alternative 1** (Preferred)	+	0/-(u)	0/-(u)	+S/+L(u)	+S/+L(u)
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	+	0	0	sl+S/+L	sl+S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/-(u)	0/-(u)	+S/-L(u)	+S/-L(u)
Scup	**Alternative 1** (Preferred)	+	0/-(u)	0/-(u)	+S/+L	+S/+L
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	+	0	0	0S/+L	0S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/-(u)	0/-(u)	+S/-L(u)	+S/-L(u)
Black Sea Bass	**Alternative 1** (Preferred: *Status quo* (No Action))	+	0	0	sl-S/+L	sl-S/+L
	Alternative 2 (Non-Preferred: Most Restrictive)	+	0/+(u)	0/+(u)	-S/+L	-S/+L
	Alternative 3 (Non-Preferred: Least Restrictive)	-	0/sl-(u)	0/sl-(u)	+S/-L(u)	+S/-L(u)

Research Set-aside

Under both RSA alternative 1 (No Action/No Research Set-Aside) and alternative 2 (Specify RSA/*status quo*), all summer flounder, scup, and black sea bass landings count against the overall quotas regardless of whether or not an RSA is implemented; therefore, the biological impacts of alternatives 1 and 2 in 2011 would not change relative to 2010. However under alternative 2, which specifies RSA amounts for each FMP species, there could be indirect positive effects as new data or other information pertaining to these fisheries are obtained for management and/or stock assessment purposes.

The impacts of both alternative 1 and alternative 2 on protected and endangered resources and habitat are not expected to change relative to 2010. Because all landings count against the overall quota regardless of which alternative is implemented, neither alternative is expected to change the level of fishing effort, as the quotas themselves are determined through action taken in other alternatives within this document, cause effort to be redistributed by gear type, or change the manner in which these fisheries are prosecuted.. Under non-preferred alternative 1, there will be no RSA deducted from the overall TALs for each FMP species. In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-RSA participants in the fishery. Since no RSA is implemented under this alternative, there are no direct economic or social costs as described above. Under preferred alternative 2, specifying the RSA would result in indirect positive effects from the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made. There may also be other small indirect positive impacts sucg as reduced discarding of RSA landed fish during season closures and efficney of operations. Qualitative summaries of the impacts of the RSA alternatives under consideration are provided in Box ES-3.

Box ES-3. Overall qualitative summary of the expected impacts of summer flounder, scup, and black sea bass research set-aside measures considered in this document (2011). A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and a zero is used to indicate a null impact. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

	Environmental Dimensions				
	Biological	**EFH**	**Protected Resources**	**Economic**	**Social**
Alternative 1 (No Action/No Research Set-Aside)	0	0	0	0	0
Alternative 2 (Preferred; Specify RSA/*Status quo*)	+ (u)	0	0	0/-(u)	+

Cumulative Impacts

For summer flounder, scup, and black sea bass, the Council analyzed the biological, habitat (EFH), protected resources, social, and economic impacts of the Council-considered alternatives. When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects associated with the action proposed in this document (see section 7.6).

Conclusions

A detailed description and discussion of the expected environmental impacts resulting from each of the alternatives, as well as any cumulative impacts, considered in this specifications document are provided in section 7.0. None of the preferred action alternatives are associated with significant impacts to the biological, social or economic, or physical environment individually or in conjunction with other actions under NEPA; therefore, a "Finding of No Significant Impact" is determined.

2.0 LIST OF ACRONYMS

ABC	Annual Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACL	Annual Catch Limit
ADAPT VPA	Adaptive Approach (age-structured) Virtual Population Analysis
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
APA	Administrative Procedures Act
ASAP	Age Structured Assessment Program
ASMFC	Atlantic States Marine Fisheries Commission or Commission
B	Biomass
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPUE	Catch Per Unit Effort
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
DPSWG	Data Poor Stocks Working Group
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
GRA	Gear Restricted Area
HPTRP	Harbor Porpoise Take Reduction Plan
IQA	Information Quality Act
IRFA	Initial Regulatory Flexibility Analysis
LNG	Liquified Natural Gas
LOF	List of Fisheries
LTPC	Long-term Potential Catch
LWTRP	Large Whale Take Reduction Plan
M	Natural Mortality Rate
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MFMT	Maximum Fishing Mortality Threshold
MRFSS	Marine Recreational Fisheries Statistical Survey
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Administrative Order
NE	New England
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRDC	Natural Resources Defense Council
OY	Optimal Yield
PBR	Potential Biological Removal

PRA	Paperwork Reduction Act
PREE	Preliminary Regulatory Economic Evaluation
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SAFMC	South Atlantic Fishery Management Council
SARC	Stock Assessment Review Committee
SAV	Submerged Aquatic Vegetation
SAW	Stock Assessment Workshop
SCALE	Statistical Catch-at-Length Model
SFA	Sustainable Fisheries Act
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SPR	Spawn Per Recruit
SSC	Scientific and Statistical Committee
TAL	Total Allowable Landings
TED	Turtle Excluder Device
US	United States
USFWS	United States Fish and Wildlife Service
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

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ENVIRONMENTAL ASSESSMENT

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 PURPOSE AND NEED OF THE ACTION

The purpose of this action (specifications document) is to implement 2011 commercial quotas and 2011 recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve, but not exceed the acceptable biological catch (ABC) that was receommend by the Council's Scientific and Statistical Committee (SSC). These specifications are needed to prevent overfishing in 2011 and in the case of summer flounder allow continued stock rebuilding. This specifications document was developed in accordance with the MSA and NEPA, the former being the primary domestic legislation governing fisheries management in the U.S. EEZ, and the FMP. Failure to specify annual quotas that constrain catch to prevent overfishing and not exceed the ABCs for summer flounder, scup, and black sea bass in 2011 would therefore be inconsistent with the National Standards under the MSA.

The management regime is detailed in the FMP, including any subsequent amendments. A summary of the management actions taken since the establishment of the FMP, through amendments and framework adjustments is given in Box 4.1.

Box. 4.1 Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.

Year Approved	Document	Plan Species	Management Action(s)
1988	Original FMP	summer flounder	- Established management plan for summer flounder
1991	Amendment 1	summer flounder	- Established an overfishing definition for summer flounder
1993	Amendment 2	summer flounder	- Established rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, permit and reporting requirements for summer flounder - Created the Summer Flounder Monitoring Committee
1993	Amendment 3	summer flounder	- Revised exempted fishery line - Increased large mesh net threshold - Otter trawl retentions requirements for large mesh use
1993	Amendment 4	summer flounder	- Revised state-specific shares for summer flounder quota allocation
1993	Amendment 5	summer flounder	- Allowed states to combine or transfer summer flounder quota
1994	Amendment 6	summer flounder	- Set criteria for allowance of multiple nets on board commercial vessels for summer flounder - Established deadline for publishing catch limits, commercial mgmt. measures for summer flounder

Box. 4.1 Cont. Summary of the history of the Summer Flounder, Scup, and Black Sea Bass FMP.			
Year Approved	**Document**	**Plan Species**	**Management Action**
1995	Amendment 7	summer flounder	- Revised the F reduction schedule for summer flounder
1996	Amendment 8	summer flounder and scup	- Incorporated Scup FMP into Summer Flounder FMP and established scup measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1996	Amendment 9	summer flounder and black sea bass	- Incorporated Black Sea Bass FMP into Summer Flounder FMP and established black sea bass measures including commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements
1997	Amendment 10	summer flounder, scup, and black sea bass	- Modified commercial minimum mesh requirements, continued commercial vessel moratorium, prohibited transfer of fish at sea, established special permit for party/charter sector for summer flounder
1998	Amendment 11	summer flounder, scup, and black sea bass	- Modified certain provisions related to vessel replacement and upgrading, permit history transfer, splitting, and permit renewal regulations
1999	Amendment 12	summer flounder, scup, and black sea bass	- Revised FMP to comply with the SFA and established framework adjustment process
2001	Framework 1	summer flounder, scup, and black sea bass	-Established quota set-aside for research for all three species
2001	Framework 2	summer flounder	- Established state-specific conservation equivalency measures for summer flounder
2003	Framework 3	scup	- Allowed the rollover of scup quota - Revised start date for summer quota period for scup fishery
2003	Framework 4	scup	- Established system to transfer scup at sea
2003	Amendment 13	summer flounder, scup, and black sea bass	- Addressed disapproved sections of Amendment 12 and included new EIS
2004	Framework 5	summer flounder, scup, and black sea bass	- Established multi-year specification setting of quota for all three species
2006	Framework 6	summer flounder	- Established region-specific conservation equivalency measures for summer flounder
2007	Amendment 14	scup	- Established rebuilding schedule for scup
2007	Framework 7	summer flounder, scup, and black sea bass	- Built flexibility into process to define and update status determination criteria for each plan species - Scup GRAs made modifiable through framework adjustment process
2007	Amendment 16	summer flounder, scup, and black sea bass	- Standardized bycatch reporting methodology

The Council's SSC identified an ABC for each of the managed resources which address scientific uncertainty inherent in the assessment of the resource and is intended to prevent overfishing. Council recommendations for catch limits cannot exceed the ABC. A memo from the SSC chairmen to the Council chairmen, dated August 2, 1010, details the derivation of ABC for each resource and highlights the specific sources of uncertainty that were of particular relevance to the SSC deliberation.

Summer flounder is currently under a rebuilding schedule; therefore, annual specifications need to be set not only to ensure overfishing does not occur and ABC is not exceeded (as is the case with all three resources), but additionally to ensure the statutory rebuilding deadlines for summer flounder are met. Overfishing occurs when the threshold fishing mortality rate is exceeded and the stock is overfished when stock biomass falls below the minimum biomass threshold.

For summer flounder, the rebuilding deadline is January 1, 2013. The SSC used a target fishing mortality rate (F) to derive an ABC to address scientific uncertainty and prevent, which is less than both the threshold and rebuilding F and is projected to achieve the spawning stock biomass rebuilding target of 132.4 million lb (60.07 million kg) by November 1, 2012 (see Aug. 2, 2010 memo for more details). The threshold F in the FMP was defined as F35%=0.31 (level of fishing that maintains 35% MSP (maximum spawning potential); proxy for F_{MSY}; NEFSC 2008), and the minimum biomass threshold is defined as 66.2 million lb (30.04 million kg; NEFSC 2008). The total allowable landings (TAC; landings + discards) recommended by the Council for specifications is the same as the ABC recommendation of the SSC. Therefore, a total allowable landing (TAL; landings only) is derived by subtracting projected discards, and the TAL is allocated to the commercial (60 percent) and the recreational (40 percent) sectors. The commercial sector's quota is allocated to the coastal states based on percentage shares specified in the FMP.

Scup is not subject to a rebuilding schedule. While the SSC identified an ABC based 75 percent of F_{MSY} (i.e., 75 percent of the threshold F) to address scientific uncertainty, the SSC also expressed concerns about rapid increases in quota to meet MSY (see Aug. 2, 2010 memo for more details). Therefore, the TAC recommended by the Council for specifications is less than the ABC recommendation of the SSC. Specifically, the threshold F in the FMP was defined as F40%=0.18 (level of fishing that maintains 40% SPR; proxy for F_{MSY}; NEFSC 2009), and the minimum biomass threshold is defined as 101.5 million lb (46.02 million kg; NEFSC 2009). The TAC is allocated to the commercial sector for three different periods (78 percent) and the recreational (22 percent) sector. The summer period, is managed state-by-state under the system adopted by the Atlantic States Marine Fisheries Commission (Commission).

Black sea bass is not subject to a rebuilding schedule. The SSC identified an ABC based on a constant catch of 4.5 millions lbs, which addresses scientific uncertainty and specific concerns about the reliability of the black sea bass assessment (see Aug. 2, 2010 memo for more details). This ABC is less than the catch associated with the threshold F. The TAC recommended by the Council for specifications is the same as the ABC recommendation of the SSC. The threshold F in the FMP was defined as F40%=0.42 (level of fishing that maintains 40% SPR; proxy for F_{MSY}; NEFSC 2009), and the minimum biomass threshold is defined as 27.6 million lb (12.54

million kg; NEFSC 2009). The F is achieved by specification of TAC and TAL, with the TAL allocated to the commercial (49 percent) and the recreational (51 percent) sectors. The annual coastwide commercial quota is specified and then allocated state-by-state under the system adopted by the Commission for the commercial black sea bass fishery.

4.2 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; and
6) minimize regulations to achieve the management objectives stated above.

To attain these management objectives, the FMP states that the following measures may be specified annually:

* commercial quotas;
* minimum size limits;
* gear regulations;
* recreational harvest limits; and
* recreational possession limits seasons, and no-sale provision.

4.3 MANAGEMENT UNITS

The management unit for summer flounder (*Paralichthys dentatus*) is the U.S. waters in the western Atlantic Ocean from the southern border of North Carolina northward to the U.S.-Canadian border. The management unit for both scup (*Stenotomus chrysops*) and black sea bass (*Centropristis striata*) is the U.S. waters in the western Atlantic Ocean from Cape Hatteras, North Carolina northward to the U.S.-Canadian border.

4.4 PROCESS AND METHODS OF ANALYSIS

The MSA requires each Council establish a Scientific and Statistical Committee (SSC) to assist it by providing it with, among other things, ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. The FMP established Monitoring Committees develops recommendations for management measures designed to achieve, but not exceeded, the catch limits recommended by the Council. Generally speaking, the SSC is focused on developing an ABC that addresses scientific uncertainty, while the Monitoring Committees focus on developing measures to address management uncertainty, including implementation uncertainty. Based on SSC and Monitoring Committee's recommendations, the Council makes a recommendation to the NMFS Northeast Regional Administrator. The Regional Administrator reviews the recommendation forwarded through this specifications document and may revise it if necessary to achieve FMP objectives and statutory requirements. Because the FMP is cooperatively managed with the Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) typically adopts complementary measures. The Council met jointly with the Board in August 2010 and recommended complementary management measures for the three species for 2011.

This specifications document serves a dual purpose, as it is a vehicle to convey the Council recommendations to the Regional Administrator. It also serves as a decision document for the Regional Administrator, who reviews the analysis of impacts of the various management alternatives presented here and determines which alternative achieves the FMP objectives as well as the objectives and statutory requirements under MSA and other applicable law.

This environmental assessment (EA) examines the impacts of each proposed action on the affected environment. The aspects of the affected environment that are likely to be directly or indirectly affected by the actions proposed in this document are described as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resources (summer flounder, scup, and black sea bass) and any non-target species; habitat, including EFH for the managed resource and non-target species; endangered and protected resources; and any human communities (social and economic aspects of the environment). The impacts of the alternatives are evaluated with respect to these VECs.

Framework 1 to the FMP established a procedure through which research set-aside amounts up to 3 percent are set annually as part of the Council's quota-setting process, to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2011 will depend on the specific amounts requested by the approved research projects, but can not exceed 3 percent of the TAL. Therefore, the maximum 3 percent RSA was analyzed for each alternative (i.e., deducted from the TAL analyzed), and reduced impacts would be anticipated with RSA amounts less than the maximum allowable 3 percent. While the Council-adjusted TALs given in this document deduct RSA, they were not adjusted for 2010 partial-year overages and/or transfers of quota among states. NMFS will adjust quotas based on updated information on overages and/or transfers as part of the final rule that implements the 2011 specifications late in 2010 when the data are more complete.

All management alternatives under consideration for summer flounder, scup, and black sea bass were analyzed for 2011 only. A full description of each of these alternatives, including a discussion of a no action alternative, is given in section 5.0. Box 4.4.1 describes the suite of alternatives for each species which include a preferred alternative (specified at the August 2010 Council meeting), a *status quo* alternative, and any additional alternatives under consideration. These recommendations and their impacts relative to 2009 landings are shown in Box 4.4.2.

Box 4.4.1. Comparison of the summer flounder, scup, and black sea bass alternatives of quota combinations reviewed for 2011 in million lb.

		Initial TAL	Research Set-Aside[a]	Council-adjusted Commercial Quota[b]	Council-adjusted Recreational Harvest Limit
Summer Flounder	**Alternative 1** (Preferred)	29.48	0.88	17.16	11.44
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	22.13	0.66	12.88	8.59
	Alternative 3 (Non-Preferred: Least Restrictive)	35.05	1.05	20.40	13.60
Scup	**Alternative 1** (Preferred)	20.00	0.60	15.13	4.27
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	14.11	0.42	10.68	3.01
	Alternative 3 (Non-Preferred: Least Restrictive)	28.96	0.87	21.91	6.18
Black Sea Bass	**Alternative 1** (Preferred: *Status quo* (No Action))	3.60	0.11	1.71	1.78
	Alternative 2 (Non-Preferred: Most Restrictive)	2.30	0.07	1.09	1.14
	Alternative 3 (Non-Preferred: Least Restrictive)	4.35	0.13	2.07	2.15

[a]Note that this RSA amount represents 3 percent of the TAL associated with the respective alternative; therefore, the conditionally-approved project amounts may be less than or equal to this value.

[b]Note that the Council-adjusted quotas are provisional and may be modified in the NMFS final rule to account for 2010 overages and/or transfers when 2010 data are more complete.

Box 4.4.2. Comparison of the summer flounder, scup, and black sea bass alternatives of quota combinations reviewed for 2011 in million lb.

		Council-adjusted Commercial Quota[a]	2009 Commercial Landings	Percent Change from 2009 Landings
Summer Flounder	**Alternative 1** (Preferred)	17.16	11.06	+55.2
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	12.88	11.06	+16.5
	Alternative 3 (Non-Preferred: Least Restrictive)	20.40	11.06	+84.4
Scup	**Alternative 1** (Preferred)	15.13	8.20	+84.5
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	10.68	8.20	+30.2
	Alternative 3 (Non-Preferred: Least Restrictive)	21.91	8.20	+167.2
Black Sea Bass	**Alternative 1** (Preferred: *Status quo* (No Action))	1.71	1.13	+51.3
	Alternative 2 (Non-Preferred: Most Restrictive)	1.09	1.13	-3.5
	Alternative 3 (Non-Preferred: Least Restrictive)	2.07	1.13	+83.2

[a] Note that the Council-adjusted quotas are provisional and may be modified in the NMFS final rule to account for 2010 overages and/or transfers when 2010 data are more complete.

5.0 MANAGEMENT ALTERNATIVES

Under the management programs for summer flounder, scup, and black sea bass, detailed in the FMP, the no action alternative is not equivalent to the *status quo* alternative (see section 5.5 for additional discussion). Therefore, for purposes of comparing impacts throughout this document, the proposed alternatives for each species (alternatives 1, 2, and 3) are compared to the *status quo* alternative (baseline) as opposed to the "true" no action alternative. Therefore, the alternatives for summer flounder, scup, and black sea bass are compared to summer flounder alternative 2, scup alternative 2, and black sea bass alternative 1, respectively. It should be noted that in the case of black sea bass alternative 2, the TAL is not exactly identical and is slightly lower (0.10 million lb lower) than the 2010 TAL. The recommendations for ABC and preferred TAC were identical and status quo; however, slightly higher projected discards for 2011 resulted in a slightly lower TAL.

It should be noted that for each of the proposed quota alternatives, commercial quotas and state shares listed are provisional and may be adjusted (i.e., by state for summer flounder, period for scup, or coastwide for black sea bass) by NMFS in the 2011 specifications final rule. Adjustments to the commercial quotas may be made to account for 2010 overages and/or transfers or to account for overages and/or transfers from the 2009 fishery that were not previously accounted for in the 2010 specifications final rule.

In addition, the RSA projects for fishing year 2011 have not yet been approved and awarded. The Council approved an RSA up to 3 percent of the TAL for each of the FMP species; therefore, the actual 2011 RSA amounts may be equal to or less than the 3 percent maximum allowable depending on which projects are approved and the specific RSA amounts requested.

5.1 Summer Flounder

The proposed summer flounder specification alternatives would only modify the 2011 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2011 by the Council and Board. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2011 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require a 14 inch-TL minimum fish size in the commercial fishery and a 5.5 inch diamond or 6 inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder, i.e., 200 lb in the winter and 100 lb in the summer. The summer flounder regulations in the Code of Federal Regulations (CFR) at Title 50 Section 648 Subpart G are available through the website for the Northeast Regional Office (NERO) of NMFS: http://www.nero.noaa.gov/nero/regs/.

In addition, a program (established in 1998 by the Council and Commission) by which states can allocate 15 percent of their quota to bycatch fisheries will continue; therefore, under this incidental catch allocation program it is recommended that: 1) state's implement possession limits such that summer flounder on board do not exceed 10 percent of total landings composition per trip and 2) possession limits be sufficiently restrictive to allow the incidental catch fishery to remain open for the entire year.

5.1.1 Alternative 1 (Preferred TAL)

Alternative 1 includes the Council-recommended summer flounder TAL of 29.48 million lb (13.37 million kg) for 2011. The TAL selected by the Council has a 50 percent probability of achieving the target F=0.26 in 2011. This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013, and is consistent with the recommendations of the Council's scientific advisors, the SSC.

The Council approved a maximum 3 percent RSA for summer flounder in 2011 (884,400 lb; 401,157 kg). After the RSA is deducted from the TAL, the TAL is divided between the commercial and recreational components of the fishery in the same proportion required by the summer flounder regulations; 60 percent to the commercial fishery and 40 percent to the recreational fishery. In 2011, the Council-adjusted commercial quota is 17.16 million lb (7.78 million kg) and the adjusted recreational harvest limit is 11.44 million lb (5.19 million kg). The summer flounder commercial quota is allocated to each state based on 1980-1989 adjusted landings as detailed in Amendment 4 of the FMP. As indicated in Box 5.1.1, state commercial shares would range from 79 lb (36 kg) to 4.71 million lb (2.14 million kg) in 2011. Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

Box 5.1.1. 2011 Summer flounder commercial fishery state by state allocations for coastwide quota alternatives 1-3[a].

		Quota Allocation (lb)		
State	**Percent**	**Alternative 1**	**Alternative 2**	**Alternative 3**
ME	**0.04756**	8,160	6,126	9,702
NH	**0.00046**	79	59	94
MA	**6.82046**	1,170,211	878,452	1,391,312
RI	**15.68298**	2,690,785	2,019,915	3,199,187
CT	**2.25708**	387,255	290,704	460,424
NY	**7.64699**	1,312,022	984,906	1,559,917
NJ	**16.72499**	2,869,567	2,154,122	3,411,747
DE	**0.01779**	3,052	2,291	3,629
MD	**2.0391**	349,856	262,629	415,958
VA	**21.31676**	3,657,393	2,745,526	4,348,427
NC	**27.44584**	4,708,982	3,534,931	5,598,704
Total [a]	**100**	**17,157,360**	**12,879,660**	**20,399,100**

[a]Total quota is the summation of all states having allocation. Delaware had an allocation of zero (0) in 2010 due to an overage of about 50,000 lb.

5.1.2 Alternative 2 (Non-Preferred: Most Restrictive/*Status quo* (No Action) TAL)

The most restrictive alternative for summer flounder considered by the Council is a TAL of 22.13 million lb (10.04 million kg) for 2011. This non-preferred TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013 and has the highest rebuilding probability. After deducting the maximum 3 percent RSA of 663,900 lb (301,140 kg) in 2011, the Council-adjusted commercial quota is 12.88 million lb (5.84 million kg) and the adjusted recreational harvest limit is 8.59 million lb (3.89 million kg). The state commercial shares for this alternative would range from 59 lb (27 kg) to 3.53 million lb (1.61 million kg) in 2011 (Box 5.1.1). Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

5.1.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive summer flounder alternative includes a TAL of 35.05 million lb (15.90 million kg) in 2011. The proposed TAL has a 50 percent probability of achieving the threshold F=0.31 in 2011, and conversely a 50 percent probability of overfishing. It is therefore inconsistent with the Council adopted risk policy, as identified in their August 2010 meeting, which suggests a probability of overfishing greater than 40 percent is inconsistent with Council tolerance for overfishing. This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013 and has the lowest rebuilding probability. After deducting the maximum 3 percent RSA for summer flounder of 1,051,500 lb (476,952 kg) in 2011, the Council-adjusted commercial quota is 20.40 million lb (9.25 million kg) and the adjusted recreational harvest limit is 13.60 million lb (6.17 million kg). The state commercial shares for this alternative would range from 94 lb (43 kg) to 5.60 million lb (2.54 million kg) in 2011 (Box 5.1.1). Delaware has had an accrued overage of about 50,000 lb which has resulted in an allocation of 0 for the prior few years.

5.2 Scup

The proposed scup alternatives would only modify the 2011 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2011 by the Council and Board. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2011 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require a 9 inch-TL minimum fish size in the commercial fishery and a 5-inch minimum mesh size for the first 75 meshes from the terminus of the net and for codends constructed with fewer than 75 meshes, a minimum mesh size of 5 inch in the entire net for vessels possessing more than the threshold amount of scup, i.e., 500 lb of scup from November 1 through April 30 and 200 lb or more of scup from May 1 through October 31. The minimum vent sizes for scup pots/traps are 3 $^{1}/_{10}$ inch (7.9 cm) in diameter for circular vents, 2 $^{1}/_{4}$ inch (5.7 cm) square vent for each side, or an equivalent rectangular escape vent. The Winter I landings limit is a 30,000 lb possession limit until 80 percent of the landings is reached, and then the possession limit would drop to 1,000 lb; and the possession limit is 2,000 lb in the Winter II fishery. If transfer of quota occurs between Winter I and Winter II, then the Winter II possession limit increases at 1,500 lb intervals for every 500,000 lb of scup transferred.

Comprehensive descriptions of scup regulations as detailed in the CFR are available through the website for the NERO of NMFS: http://www.nero.noaa.gov/nero/regs/.

5.2.1 Alternative 1 (Preferred TAL)

The preferred alternative for scup recommends a TAL of 20.00 million lb (9.07 million kg) for 2011. The SSC identified an ABC based 75 percent of F_{MSY} (i.e., 75 percent of the threshold F) but expressed concerns about rapid increases in quota to meet MSY. Similarly, the Scup Monitoring Committee was concerned about rapid increases in catch limits and presented options for increased TACs/TALs, all of which were less than MSY. Therefore, the TAC recommended by the Council for specifications is less than the ABC recommendation of the SSC and less than MSY, and is based on a 41-percent increase in the TAC when compared to the 2010 TAC. Discards estimates generated by the scup stock assessment were then subtracted from the TAC to derive the initial TAL.

The TAC is allocated to the commercial and recreational fisheries based on the proportions of commercial and recreational catches (landings plus discards) for the years 1988-1992. Based on this data, 78 percent of the TAC is allocated to the commercial fishery and 22 percent to the recreational fishery.

Box 5.2.1.1. Derivation of the initial 2011 TALs for scup.

	Alternative 1	Alternative 2	Alternative 3
TAC	24.10	17.09	35.63
Discard Estimate	4.10	2.98	6.67
Initial TAL	20.00	14.11	28.96

The Council approved up to 3 percent of the scup TAL for RSA in 2011. The alternative 1 TAL results in a maximum RSA of 600,000 lb (272,155 kg), which after deducted from the initial TAL in Box 5.2.1.1 results in a Council-adjusted commercial quota of 15.13 million lb (6.86 million kg) and an adjusted recreational harvest limit of 4.27 million lb (1.94 million kg).

Framework Adjustment 3 to the FMP allows for the transfer of unused scup quota from the Winter I to the Winter II period. As such, if the fishery does not land their quota in Winter I, the opportunities to land those scup are not lost for the fishing year. The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

Box 5.2.1.2. Comparison (in million lb) of the commercial scup quota alternatives, by period, for 2011.				
		Adjusted Quota (million lb)		
Period	**Percent Allocation**	**Alternative 1**	**Alternative 2**	**Alternative 3**
Annual	100	15.13	10.68	21.91
Winter I (Jan-April)	45.11	6.83	4.82	9.88
Summer (May-Oct)	38.95	5.89	4.16	8.53
Winter II (Nov-Dec)	15.94	2.41	1.70	3.49

5.2.2 Alternative 2 (Non-Preferred: Most Restrictive/*Status quo* (No Action) TAL)

The most restrictive alternative considered for scup in 2011 is a TAL of 14.11 million lb (6.40 million kg). This non-preferred TAL is the same TAL that was implemented in fishing year 2010 (*status quo*). This alternative may be more restrictive than necessary given the recommendations of the SSC and Scup Monitoring Committee. After deducting the maximum RSA for scup under this alternative of 423,300 lb (192,006 kg) from the initial TAL (Box 5.2.1.1), the Council-adjusted commercial quota is 10.68 million lb (4.84 million kg) and an adjusted recreational harvest is 3.01 million lb (1.37 million kg). The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

5.2.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive alternative considered for scup in 2011 includes a TAL of 28.96 million lb (13.14 million kg). This TAL is based on setting the TAC equal to maximum sustainable yield (MSY; TAC=MSY); therefore, the TAL is equal to landings associated with MSY. This alternative did not address the SSC and Scup Monitoring Committee concerns about rapid increases in catch limits relative to MSY; therefore, the Council did not identify this option as preferred. The approved maximum RSA for scup of 868,800 lb (394,081 kg) is then deducted from the initial TAL (Box 5.2.1.1) to result in a Council-adjusted commercial quota of 21.91 million lb (9.94 million kg) and an adjusted recreational harvest limit of 6.18 million lb (2.80 million kg). The current scup period allocation formula remains unchanged as detailed in Box 5.2.1.2.

5.3 Black Sea Bass

The proposed black sea bass alternatives would only modify the 2011 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2011 by the Council and Board. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2011 fishing year (see section 5.5 for additional discussion). For reference, the current regulations require an 11 inch-TL minimum fish size in the commercial fishery and a minimum mesh size of 4.5 inch for the first 75 meshes from the terminus of the net in the codends for large nets, or 4.5 inch in the entire net for small nets of vessels possessing more than the threshold amount of black sea bass, i.e., 500 lb of black sea bass from January 1 through March 31 and 100 lb or more of black sea bass from April 1 through December 31. The minimum vent sizes for black sea bass pots/traps are 2 $^{1}/_{2}$ inch (6.4 cm) in diameter for circular vents, 2 inch (5.1 cm) square vents, or a 1 $^{3}/_{8}$ x 5 $^{3}/_{4}$ inch (3.5 x 14.6 cm) rectangular escape vent; with two additional vents required in the parlor portion of the trap. The black sea bass regulations in the CFR are available through the website for the NERO of NMFS: http://www.nero.noaa.gov/nero/regs/.

5.3.1 Alternative 1 (Preferred: *Status quo* (No Action) TAL)

The preferred alternative for black sea bass recommends a TAL of 3.60 million lb (1.63 million kg) for 2011. The SSC and Black Sea Bass Monitoring Committee recommended and ABC and TAC, respectively, that are equal (i.e., ABC=TAC). These recommendations constitute status quo/no action and were identical to the prior year TAC; however, projected discard estimates were revised for 2011. Therefore, this preferred TAL is slightly less than the TAL that was implemented in fishing year 2010 (*status quo*) due to higher discard estimates, which resulted in a TAL that is 0.10 million lb less. While this alterntive is referred to as the "status quo (no action)" alternative, it is in fact the TAC that is "status quo (no action)" and the TAL, while very similar, is not exactly the status quo (no action). The FMP establishes and allocation of 49 percent of the TAL is the commercial fishery, and 51 percent is allocated to the recreational fishery. The Council approved a maximum of 3 percent of the 2011 TAL to be set-aside for research. Under Alternative 1, RSA for black sea bass of 108,000 lb (48,988 kg) is then deducted from the initial TAL to result in a Council-adjusted commercial quota of 1.71 million lb (0.78 million kg), and an adjusted recreational harvest of 1.78 million lb (0.81 million kg).

5.3.2 Alternative 2 (Non-Preferred: Most Restrictive TAL)

The most restrictive alternative considered for black sea bass in 2011 is a TAL of 2.30 million lb (1.04 million kg). This TAL is the most restrictive that has been applied to the black sea bass fishery since the FMP was implemented. This alternative may be more restrictive than necessary and is substantially less than the SSC recommended ABC. After deducting the approved RSA for black sea bass of 69,000 lb (31,298 kg) from the initial TAL, the Council-adjusted commercial quota is 1.09 million lb (0.49 million kg), and the adjusted recreational harvest is 1.14 million lb (0.52 million kg).

5.3.3 Alternative 3 (Non-Preferred: Least Restrictive TAL)

The least restrictive TAL considered for black sea bass in 2011 is 4.35 million lb (1.97 million kg). This TAL is based on maintaining the most recent estimate of F for this stock (2009-F=0.29) in 2011. This TAL is not consistent with the recommendations of the SSC, as the TAC associated with this alternative is in fact higher than the SSC recommended ABC. The Council's recommendations cannot exceed the ABC; therefore, the council did not identify this alternative as preferred. After the approved RSA for black sea bass of 130,500 lb (59,194 kg) is deducted, the Council-adjusted commercial quota is 2.07 million lb (0.94 million kg), and the adjusted recreational harvest is 2.15 million lb (0.98 million kg).

5.4 Research Set-Aside Measures

Framework Adjustment 1 to the FMP established a program in which research projects can be funded through the sale of fish that has been set-aside from the total annual quota. Through the Mid-Atlantic RSA Program the Council encourages collaborative efforts between the public, research institutions, and government agencies in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest as RSA quota to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation's fisheries.

In addition, the Mid-Atlantic RSA Program assures that research endeavors selected and funded under this program will receive the peer review and analysis necessary to be utilized in improving the management of public fisheries resources. The annual research set-aside amount may vary between 0 and 3 percent of each species' quota. For those species that have both a commercial quota and a recreational harvest limit, the set-aside calculation shall be made from the combined total allowable landing level.

5.4.1 Alternative 1 (No Research Set-Aside/No-Action)

Under this alternative, no RSA will be implemented for summer flounder, scup, or black sea bass in 2011. Thus, the quotas would not be adjusted downward for the RSAs.

5.4.2 Alternative 2 (Preferred: Specify Research Set-Asides/*Status quo*)

The Council has recommended that 3 percent of the 2011 summer flounder, scup, and black sea bass quotas, 884,400 lb (401,157 million kg), 600,000 lb (272,155 million kg), 108,000 lb (48,988 million kg), respectively, be set-aside to fund projects selected under the 2011 Mid-Atlantic RSA Program. Although the project selection and award process for the 2011 Mid-Atlantic RSA Program has not concluded, 3 projects, as described in section 7.4, have been preliminarily selected for funding. If any portion of the research quota is not awarded, NMFS will return any un-awarded set-aside amount to the commercial fishery either through the 2011 summer flounder, scup, and black sea bass specification rulemaking process or through the publication of a separate notice in the *Federal Register* notifying the public of a quota adjustment.

In order to expedite the implementation of the 2011 Mid-Atlantic RSA Program, the environmental impact of this program and the selected projects are analyzed in this document. With the exception of the research activities of Project #2, for which the NEPA and Endangered Species Act analysis occurred through a separate EA completed April 20, 2010, and a Section 7 Consultation completed April 13, 2010, this document analyzes all research activities, compensation fishing activities, and regulatory exemptions with respect to the summer flounder, scup, and black sea bass FMP. MSA requires that interested parties are provided an opportunity to comment on all proposed exempted fishing permits. Potential environmental impacts of this program on *Ilex, Loligo*, butterfish, Atlantic mackerel, and Atlantic bluefish are addressed in those respective specification documents. Additional consultation and analysis with respect to

NEPA, ESA, MSA, and other applicable law may be necessary if the statement of work changes or additional exemptions are requested.

5.5 "True" No-Action Alternatives – (Summer Flounder, Scup, and Black Sea Bass)

Section 5.03(b) of NOAA Administrative Order (NAO) 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 Environmental Quality (CEQ) has explained that there are two distinct interpretations of the "no action:" One interpretation is essentially the *status quo*, i.e., no change from the current management; and the other interpretation is when a proposed project, such as building a railroad facility, does not take place. In the case of the proposed 2011 specifications for summer flounder, scup, and black sea bass, determining the no action alternative is slightly more complicated than either of these interpretations suggest.

The *status quo* management for the summer flounder, scup, and black sea bass fisheries each involve a set of indefinite (i.e., in force until otherwise changed) management measures, such as minimum allowable sizes, bag limits, and reporting requirements. These measures will continue as they are even if the proposed specifications are not implemented. However, the current management program includes TALs that are specific to the 2010 fishing year. In the case of scup, it is also required a TAC be specified. There are no "roll-over" provisions currently for these three fisheries provided for in the FMP. Thus, if the proposed 2011 summer flounder, scup, or black sea bass specifications are not implemented for one or all of these fisheries by January 1, 2011, that fishery/or fisheries will operate without an identified cap on allowable landings. Therefore, because of the subtleties in the management program for each FMP species the no action alternative is not equivalent to *status quo*. If the action that results in setting the proposed specifications for any/or all of these fisheries is not taken, some current measures will remain in place, but the overall management program for those fisheries will not be identical to that of 2010.

For the purposes of this EA, the no action alternative for summer flounder is defined as follows: (1) no proposed specifications for the 2011 summer flounder fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) no quota set-aside allocated to research in 2011; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] measures. A commercial quota, which determines the maximum amount of

[3] A summary of the regulations for summer flounder, scup, and black sea bass is provided in sections 5.1, 5.2, and 5.3, respectively. Comprehensive descriptions of the regulations as detailed in the Code of Federal Regulations (CFR) are available through the website for the Northeast Regional Office (NERO) of NMFS: http://www.nero.noaa.gov/nero/regs/.

summer flounder landings allowable before the commercial fishery is closed, would not be implemented for 2011.

For the purposes of this EA, the no action alternative for scup is defined as follows: (1) no proposed specifications for the 2011 scup fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) no quota set-aside allocated to research in 2011; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] measures. A commercial quota, which determines the maximum amount of scup landings allowable before the commercial fishery is shut down, would not be implemented for 2011.

For the purposes of this EA, the no action alternative for black sea bass is defined as follows: (1) no proposed specifications for the 2011 black sea bass fishery will be published; (2) the indefinite management measures (minimum sizes, bag limits, possession limits, permit and reporting requirements, etc.) remain unchanged; (3) no quota set-aside allocated to research in 2011; and (4) no specific cap on the allowable annual landings in this fishery (i.e., no quota). Under the no action alternative, the only regulatory controls on fishing effort and harvests would be the indefinite[3] measures. A commercial quota, which determines the maximum amount of black sea bass landings allowable before the commercial fishery is shut down, would not be implemented for 2011.

The implications of the no action alternatives are substantial. These alternatives do not allow NMFS to specify and implement a TAL (also TAC in the case of scup) for these fisheries, as required in the regulations at 50 CFR part 648, for the upcoming fishing year. Monitoring the landings, and taking action as necessary to prevent the state and federal caps from being exceeded, as applicable, is essential for management of these fisheries and forms the backbone of the current quota-based management systems under the FMP. The no action alternative is inconsistent with the goals and objectives of the FMP, as well as its implementing regulations, and may result in overfishing or cause the level of acceptable biological catch (ABC) for summer flounder, scup, and/or black sea bass to be exceeded. By not preventing overfishing and/or allowing the ABC to be exceeded, it is also inconsistent with the MSA. The no action alternatives are not considered reasonable; therefore, they are not analyzed further in the EA. Therefore, the alternatives for summer flounder, scup, and black sea bass are compared to summer flounder alternative 2, scup alternative 2, and black sea bass alternative 1, respectively, which are the *status quo* alternatives (base line) as opposed to the “true” no action alternatives described above.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource

6.1.1 Description of the Fisheries

The commercial and recreational fisheries for summer flounder, scup, and black sea bass are fully described in section 3.3.2 of Amendment 13 to the FMP (MAFMC 2002) and are also outlined by principal port in section 3.4.2 of that document. Otter trawls are utilized in the commercial fisheries for all three species. In addition, floating traps and pots/traps are utilized to capture scup and black sea bass, respectively. An overview of commercial and recreational fisheries trends in landings for each of the FMP species is provided below. The commercial landings are based on Dealer Weighout Data, as of May 27, 2010, and South Atlantic General Canvass Data as of June 28, 2010; recreational landings are based on Marine Recreational Fisheries Statistical Survey (MRFSS) data. As discussed in section 4.1, annual TALs are implemented through this specifications document to ensure overfishing does not occur and any rebuilding goals are met. These controls on fishery removals (i.e., output controls) result in landings trends that may or may not closely follow trends in stock abundance. In the summer flounder commercial fishery, any landings overages are subtracted from the initial quota for a given state the following year. For the scup and black sea bass commercial fisheries, landings overages are subtracted from the following year's initial quota by period for scup and coastwide for black sea bass. An exception to this requirement occurred when a court ruling added 3.05 million lb (1.38 million kg) to the summer flounder commercial fishery for 1995 (February 16, 1995, 60 FR 8958). In the recreational fishery, projected landings in a given year are used by the Council in recommending recreational management measures for the subsequent year. The recreational fishery has target harvest levels. Due to the lengthy time lag (i.e., months) in recreational data collection, when compared to the commercial landings information which is available in a more timely manner, in-season adjustment and closures of the recreational fisheries for summer flounder, scup, and black sea bass are typically not feasible.

6.1.1.1 Summer Flounder

Commercial and recreational summer flounder landings are graphed to show the relative contributions of each to total landings in Figure 1. Commercial landings peaked in 1984 at 37.77 million lb (17.13 million kg) and then declined rapidly to a low of 9.26 million lb (4.20 million kg) in 1990. In 2009, commercial landings were 11.06 million lb (5.02 million kg). The mean for the commercial time series, 1980 to 2009 is 17.42 million lb (7.90 million kg). Recreational landings peaked in 1980 at 38.22 million lb (17.34 million kg) and then declined rapidly to a time series low of 3.16 million lb (1.43 million kg) in 1989. In 2009, recreational landings were 7.30 million lb (3.31 million kg). The mean for the recreational time series, 1980 to 2009 is 12.16 million lb (5.52 million kg). Combined commercial and recreational landings were 17.36 million lb (7.87 million kg) in 2009.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined), is given in Box 6.1.1.1 below. This information indicates a pattern of exceeding the summer flounder coastwide TAL in 7 of the 10 most recent years.

Box 6.1.1.1. Summer Flounder TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.

Year	TAL	Total Landings	Overage
2000	18.52	27.70	9.18
2001	17.91	22.58	4.67
2002	24.30	22.50	-
2003	23.30	25.93	2.63
2004	28.20	28.81	0.61
2005	30.30	27.86	-
2006	23.59	25.47	1.88
2007	17.11	19.83	2.72
2008	15.77	17.04	1.27
2009 [b]	18.45	17.36	-
2010	22.13	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of May 27, 2010; recreational landings based on MRFSS. Note: 2010 landings not yet available.

6.1.1.2 Scup

Commercial and recreational scup landings are graphed to show the relative contributions of each to total landings in Figure 2. Commercial landings peaked in 1981 at 21.73 million lb (9.86 million kg) and then declined rapidly to a time series low of 2.66 million lb (1.21 million kg) in 2000. In 2009, commercial landings were 8.20 million lb (3.72 million kg). The mean for the commercial time series, 1981 to 2009 is 10.37 million lb (4.70 million kg). Recreational landings peaked in 1986 at 11.61 million lb (5.27 million kg) and then declined rapidly to a time series low of 0.88 million lb (0.40 million kg) in 1998. In 2009, recreational landings were 2.94 million lb (1.33 million kg). The mean for the recreational time series, 1981 to 2009 is 4.33 million lb (1.96 million kg). Combined commercial and recreational landings were 11.14 million lb (5.05 million kg) in 2009.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined) is given in Box 6.1.1.2 below. This information indicates that since 1999, the scup coastwide TAL was exceeded from 2000 to 2003 and in 2007.

Box 6.1.1.2. Scup TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.			
Year	**TAL**	**Total Landings**	**Overage**
2000	3.77	8.10	4.33
2001	6.21	8.33	2.12
2002	10.77	10.91	0.14
2003	16.50	18.38	1.88
2004	16.50	13.57	-
2005	16.49	11.95	-
2006	16.27	11.92	-
2007	12.00	12.90	0.90
2008	11.18	9.23	-
2009[b]	14.11	11.14	-
2010	17.09	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of May 27, 2010; recreational landings based on MRFSS. Note: 2010 landings not yet available.

6.1.1.3 Black Sea Bass

Commercial and recreational black sea bass landings are graphed to show the relative contributions of each to total landings in Figure 3. Commercial landings peaked in 1984 at 4.33 million lb (1.96 million kg) and then declined to 2.07 million lb (0.93 million kg) in 1995. In 2009, commercial landings were 1.13 million lb (0.51 million kg) due to the most restrictive quota in the time series. The mean for the commercial time series, 1981 to 2009 is 2.95 million lb (1.34 million kg). Recreational landings peaked in 1986 at 12.46 million lb (5.65 million kg) and then declined rapidly to a time series low of 1.29 million lb (0.59 million kg) in 1998. In 2009, recreational landings were 2.44 million lb (1.11 million kg). The mean for the recreational time series, 1981 to 2009 is 3.68 million lb (1.67 million kg). Combined commercial and recreational landings were 3.57 million lb (1.62 million kg) in 2009.

The landings history for this stock, with respect to achieving the coastwide TALs (both recreational and commercial fisheries combined), is given in Box 6.1.1.3 below. This information indicates that the black sea bass coastwide TAL was exceeded from 2000 to 2002 and 2009; the TAL was not exceeded in 6 of the 10 most recent years.

Box 6.1.1.3. Black sea bass TAL,[a] and any landings overages above the coastwide TAL (both sectors combined), in million lb.			
Year	**TAL**	**Total Landings**	**Overage**
2000	6.17	6.80	0.63
2001	6.17	6.45	0.28
2002	6.80	7.90	1.10
2003	6.80	6.39	-
2004	8.00	4.92	-
2005	8.20	4.85	-
2006	8.00	4.84	-
2007	5.00	3.81	-
2008	4.22	3.47	-
2009 [b]	2.30	3.57	1.27
2010	3.70	-	n/a

[a]Includes both commercial quotas and recreational harvest limits.
[b]Preliminary. Commercial landings based on Dealer Weighout Data, as of May 27, 2010 and General Canvass data as of June 28, 2010; recreational landings based on MRFSS. Note: 2010 landings not yet available.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on "Stock Status," including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports, and Data Poor Stocks Working Group (DPSWG) reports and peer-review panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

6.1.2.1 Summer Flounder

The most recent peer-reviewed assessment of summer flounder was June 2008 during SAW 47 (NEFSC 2008). The model used to assess the stock changed from the ADAPT VPA model to a statistical catch at age model, called Age Structured Assessment Program (ASAP). An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009 (Box 6.1.2.1). The fishing mortality rate has declined to below 1.0 since 1997 and was estimated to be 0.237 in 2009, below the threshold fishing mortality reference point = F35% (as FMSY proxy) = 0.310. There is a 50% probability that the fishing mortality rate in 2008 was between 0.224 and 0.250. Spawning stock biomass (SSB) decreased from about 55.1 million lb (25.0 million kg) in the early 1980s to about 15.4 million lb (7.0 million kg) in 1989, then increased to above 88.2

million lb (40.0 million kg) by 2002. SSB was estimated to be 117.9 million lb (53.5 million kg) in 2009, about 89% of the SSB35% (as SSB_{MSY} target proxy reference point) = 132.4 million lb (60.1 million kg). There is a 50% chance that SSB in 2009 was between 111.5 million lb (50.6 million kg) and 123.5 million lb (56.0 million kg). The arithmetic average recruitment from 1982 to 2009 is 42 million fish at age 0. The 1981 and 1982 year classes are the largest in the historical assessment time series, at 73 and 81 million fish; the 1988 year class is the smallest at 13 million fish. The 2008 year class is currently estimated to be about 49 million fish, 17 percent above the average. The 2009 year class is currently estimated to be about 82 million fish, about twice the average, and the largest in the assessment time series.

A full description of stock characteristics and ecological relationships of summer flounder is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics" (Packer et al. 1999).

Box 6.1.2.1 Summer Flounder Stock Status Information[a], 2000-2009.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.31)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=66.2 million lb)	Year Class Estimate (millions of fish)
2000	0.67	Yes	69.0	No	40
2001	0.49	Yes	81.8	No	38
2002	0.43	Yes	92.8	No	44
2003	0.41	Yes	101.2	No	34
2004	0.44	Yes	103.2	No	55
2005	0.45	Yes	100.5	No	29
2006	0.34	Yes	102.7	No	30
2007	0.26	No	100.3	No	30
2008	0.24	No	99.2	No	49
2009	0.24	No	117.9	No	82

[a] Based on SAW 47 (NEFSC 2008) and the June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.2 Scup

The most recent assessment for scup was peer-reviewed and accepted in December 2008 by the DPSWG Peer Review Panel (NEFSC 2009). The model used to assess the stock changed from index-based methods to a statistical catch at age model, called ASAP. An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009 (Box 6.1.2.1). Fishing mortality varied between F = 0.1 and F = 0.3 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at about F=1.1 in the mid-1990s. Fishing mortality decreased after 1994, falling to less than F=0.1 since 2004, with F in 2009=0.043. There is a 50% chance that F in 2009 was between 0.033 and 0.058. Spawning stock biomass (SSB) decreased from about 220 million lb (100 million kg) in 1963 to about 110 million lb (50 million kg) in 1969, then increased to about 165 million lb (75 million kg) during the mid 1970s. SSB declined through the 1980s and early 1990s to less than 11 million lb (5 million kg) in the mid-1990s. With greatly improved recruitment and low fishing mortality rates since 1998, SSB has increased to about 346 million lb (157 million kg) in 2008 and 342 million lb (155 million kg) in 2009. There is a 50% chance that SSB in 2009 was between 331 million lb (150 million kg) and 357 million lb (162 million kg). Recruitment at age 0 averaged 92 million fish during 1963-1983, the period in which recruitment estimates are influenced mainly by the assessment model stock-recruitment relationship. Since 1984, recruitment estimates from the model are influenced mainly by the fishery and survey catches at age, and recruitment at age 0 averaged 104 million fish during 1984-2009. The 1999 and 2000 year classes are estimated to be the largest of the time series, at 207 and 184 million age 0 fish. Recruitment has exceeded the 1984-2009 average of 104 million in 2001 and 2004-2009.

The stock characteristics and ecological relationships of scup are fully described in section 3.1.2 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the document titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999).

Box 6.1.2.2 Scup Stock Status Information[a], 2000-2009.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.18)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=101.5 million lb)	Year Class Estimate (millions of fish)
2000	0.18	No	46.3	Yes	184
2001	0.10	No	94.8	Yes	149
2002	0.10	No	147.7	No	88
2003	0.10	No	194.0	No	88
2004	0.07	No	216.1	No	138
2005	0.05	No	242.5	No	144
2006	0.06	No	262.4	No	163
2007	0.06	No	291.0	No	141
2008	0.05	No	346.1	No	164
2009	0.04	No	341.7	No	140

[a]Based on DPSWG assessment (NEFSC 2009) and June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.2.3 Black Sea Bass

The most recent assessment independently peer-reviewed assessment for black sea bass was accepted in December 2008 by the DPSWG Peer Review Panel (NEFSC 2009). The model used to assess the stock changed from index-based methods to a length-structured assessment model, called Statistical Catch at Length (SCALE). An assessment update was conducted in June 2010, which utilized the most recent data and applied the exact same methods that were validated by the 2008 peer-review.

Using the updated stock status information, relative to the biological reference points, the stock is not overfished and overfishing was not occurring in the most recent year, 2009 (Box 6.1.2.1). Fishing mortality varied between F=0.20 and F=0.74 during the 1960s and 1970s. Fishing mortality increased steadily during the 1980s and early 1990s, peaking at F=1.26 in 1986. Fishing mortality remained high until after 2001 (F=1.17), falling steadily to F=0.29 in 2009, less than the threshold F=0.42. SSB decreased from about 26.8 million lb (12.16 million kg) in 1975 to about 18.2 million lb (8.28 million kg) in 1979, then increased to about 25.6 million lb (11.60 million kg) during the mid 1980s. SSB declined through the 1980s and early 1990s to only 14.7 million lb (6.66 million kg) in 1996. With improved recruitment and low fishing mortality rates since 2001, SSB has steadily increased to about 28.6 million lb (12.98 million kg) in 2009. Recruitment averaged 26.4 million fish during 1968-1999 but increased to 56 million in 2000 followed by recruitment of 40 million fish in 2002. Although 2004 recruitment was the lowest in the time series, recent years have been near average. The black sea bass model average retrospective pattern suggests that F is under-estimated and recruitment and total biomass are over-estimated in the terminal year.

A full description of stock characteristics and ecological relationships is presented in section 3.1.1 of Amendment 13 to the FMP (MAFMC 2002). Additional information can be found in the documents titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999) and an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics (Second Edition)" (Drohan et al. 2007).

Box 6.1.2.3 Black Sea Bass Stock Status Information[a], 2000-2009.

Year	Updated F Estimate	Overfishing? ($F_{threshold}$=0.42)	Spawning Stock Biomass (million lb)	Overfished? ($SSB_{threshold}$=13.8 million lb)	Year Class Estimate (millions of fish)
2000	0.97	Yes	18.0	No	56
2001	1.17	Yes	21.8	No	26
2002	1.03	Yes	27.7	No	40
2003	0.84	Yes	27.8	No	26
2004	0.66	Yes	27.6	No	20
2005	0.45	Yes	26.9	No	24
2006	0.44	Yes	26.5	No	23
2007	0.43	No	26.0	No	28
2008	0.35	No	26.7	No	26
2009	0.29	No	28.6	No	27

[a]Based on DPSWG assessment (NEFSC 2009) and June 2010 Assessment Update; therefore, values in this box may not match those in the prior year's specifications document.

6.1.3 Non-target Species

The summer flounder, scup and black sea bass fisheries are mixed fisheries, where squid, Atlantic mackerel, silver hake, skates, and other species are harvested with summer flounder, scup, and/or black sea bass. Section 5.1.9 of Amendment 13 to the FMP (MAFMC 2002) provides a full description of bycatch and/or non-target species in these fisheries. The term "bycatch," as defined by the MSA, means fish that are harvested in a fishery but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include fish released alive under a recreational catch-and-release fishery management program.

6.2 Habitat (Including Essential Fish Habitat)

A description of the habitat associated with the summer flounder, scup, and black sea bass fisheries is presented in section 3.2 of Amendment 13 to the FMP (MAFMC 2002), and a brief summary of that information is given here. The impact of fishing on summer flounder, scup, and black sea bass on habitat (and EFH) and the impact of the summer flounder, scup, and black sea bass fisheries on other species' habitat and EFH can be found in Amendment 13 to the FMP (section 3.2; MAFMC 2002). Potential impacts associated with the measures proposed in this specifications document on habitat (including EFH) are discussed in section 7.0.

6.2.1 Summer Flounder

Summer flounder spawn during the fall and winter over the open ocean areas of the continental shelf. Planktonic larvae are often found in the northern part of the Middle Atlantic Bight from September to February and in the southern part from November to May. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Summer flounder exhibit strong seasonal inshore-offshore movements. Adult flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the colder months. EFH includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas, from the Gulf of Maine through North Carolina. Additional information on summer flounder habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics" (Packer et al. 1999). An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for summer flounder are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP (MAFMC 2002). Summer flounder are primarily landed by bottom otter trawls.

Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the MSA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the summer flounder fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.2.2 Scup

Scup spawn once annually, over weedy or sand-covered areas in the spring. Scup eggs and newly hatched larvae are found in open water in bays and sounds of Southern New England during the spring-summer. Juvenile and adult scup are demersal using inshore waters in the spring and moving offshore in the winter. EFH includes demersal waters, sands, mud, mussel and seagrass beds, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on scup habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999). An electronic version of the source documents is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for scup are available at the following website:
http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Scup are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the scup fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.2.3 Black Sea Bass

The northern population of black sea bass spawns in the Middle Atlantic Bight continental shelf during the spring through fall, primarily between Virginia and Cape Cod, Massachusetts. Spawning begins in the spring in the southern portion of the population range, i.e., off North Carolina and Virginia, and progresses north into southern New England waters in the summer-fall; these pelagic eggs are closely associated with spawning. Collections of ripe fish and egg distributions indicate that the species spawns primarily on the inner continental shelf between Chesapeake Bay and Montauk Pt., Long Island. The duration of larval stage and habitat-related settlement cues are unknown; therefore, distribution and habitat use of this pelagic stage may only partially overlap with that of the egg stage. Adult black sea bass are also very structure oriented, especially during their summer coastal residency. Unlike juveniles, they tend to enter only larger estuaries and are most abundant along the coast. Larger fish tend to be found in deeper water than smaller fish. A variety of coastal structures are known to be attractive, and these include shipwrecks, rocky and artificial reefs, mussel beds and any other object or source of shelter on the bottom. In the warmer months, inshore, resident adult black sea bass are usually found associated with structured habitats. EFH for black sea bass is pelagic waters, structured habitat (e.g., sponge beds), rough bottom shellfish, sand and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Additional information on black sea bass habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Steimle et al. 1999) and an update of that document, "Essential Fish Habitat Source Document: Black Sea Bass, *Centropristis striata*, Life History and Habitat Characteristics" (Drohan et al. 2007). An electronic version of this source document is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for black sea bass are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

Any actions implemented in the FMP that affect species with overlapping EFH were considered in the EFH assessment for Amendment 13 to the FMP (MAFMC 2002). Black sea bass are primarily landed by fish pots/traps, bottom and midwater trawls, and lines. Amendment 13 included alternatives to minimize the adverse impacts of fishing gear on EFH (as required pursuant to section 303(a)(7) of the SFA). As stated in section 3.2 of Amendment 13, the Council determined that both mobile bottom tending and stationary gear have a potential to adversely impact EFH. The analysis in that document also indicated that no management measures were needed, because in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. On that basis, the Council selected the no action alternative, from among the suite of alternatives to minimize fishing gear impacts on EFH in Amendment 13 to the FMP. There have be no significant changes to the manner in which the black sea bass fishery is prosecuted, and none of the alternatives being considered in this document would adversely affect EFH (see section 7.0); therefore, the effects of fishing on EFH have not been re-evaluated since Amendment 13 to the FMP, and no alternatives to minimize adverse effects on EFH are presented in this document.

6.3 Endangered and Protected Species

There are numerous species inhabiting the environment, within the management unit of the three species managed through this FMP, that are afforded protection under the Endangered Species Act (ESA) of 1973 (i.e., for those designated as threatened or endangered), the Marine Mammal Protection Act of 1972 (MMPA), and Migratory Bird Act of 1918. Fifteen are classified as endangered or threatened under the ESA and are listed below in Table 9. A more detailed description of the species listed as endangered or threatened, including ecological relationships and life history information, is presented in Appendix C. The potential impacts to protected species associated with the proposed measures under this specifications document are discussed in section 7.0.

The status of these and other marine mammal populations inhabiting the Northwest Atlantic has been discussed in detail in the U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments. Initial assessments were presented in Blaylock et al. (1995) and are updated in Waring et al. (2009). The most recent information on the stock assessment of various marine mammals through 2009 can be found at: http://www.nmfs.noaa.gov/pr/sars/.

Three other useful websites on marine mammals are:
http://www.nmfs.noaa.gov/pr/recovery, which provides information on recovery plans, http://spo.nwr.noaa.gov/mfr611/mfr611.htm, provides history and status of endangered whales, and http://www.nmfs.noaa.gov/pr/species/mammals, which provides updates of stock status.

Under section 118 of the MMPA of 1972, NMFS must publish, and annually update, the List of Fisheries (LOF), which places all U.S. commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two-tiered classification system). The categorization of a fishery in the LOF determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The classification criteria consist of a two-tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2).

Box 6.3. Species protected by the ESA and MMPA that are found in the environment utilized by the summer flounder, scup, and black sea bass fisheries.

Species	Common name	Scientific Name	Status
Cetaceans	Northern right	*Eubalaena glacialis*	Endangered
	Humpback	*Megaptera novaeangliae*	Endangered
	Fin	*Balaenoptera physalus*	Endangered
	Blue	*Balaenoptera musculus*	Endangered
	Sei	*Balaenoptera borealis*	Endangered
	Sperm	*Physeter macrocephalus*	Endangered
Sea Turtles	Leatherback	*Dermochelys coriacea*	Endangered
	Kemp's ridley	*Lepidochelys kempii*	Endangered
	Green	*Chelonia mydas*	Endangered
	Hawksbill	*Eretmochelys imbricata*	Endangered
	Loggerhead	*Caretta caretta*	Threatened
Fishes	Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
	Atlantic salmon	*Salmo salar*	Endangered
Birds	Roseate tern	Sterna dougallii dougallii	Endangered
	Piping plover	Charadrius melodus	Endangered

If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10 percent of the Potential Biological Removal[4] (PBR) for the stock, then the stock is designated as Tier 1, and all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to categorization under Tier 2. Under Tier 2, individual fisheries are subject to the following categorization:

I. Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the PBR level;

II. Annual mortality and serious injury of a stock in a given fishery is greater than one percent and less than 50 percent of the PBR level; or

III. Annual mortality and serious injury of a stock in a given fishery is less than one percent of the PBR level.

[4] PBR is the product of minimum population size, one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997).

Under Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In Category III, there is information indicating no more than a "remote likelihood"[5] of an incidental taking of a marine mammal in the fishery or, in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery.

All types of commercial fishing gear are required to meet the gear restrictions detailed in the: Atlantic Large Whale Take Reduction Plan at http://www.nero.noaa.gov/whaletrp/, the Harbor Porpoise Take Reduction Plan at http://www.nero.noaa.gov/prot_res/porptrp/, the MMPA and ESA respectively at http://www.nmfs.noaa.gov/pr/laws/mmpa/, and http://www.nmfs.noaa.gov/pr/laws/esa/. These restrictions are intended to reduce fishery interactions and incidental injury or mortality of protected resources.

The commercial fisheries for summer flounder, scup, and black sea bass are primarily prosecuted with otter trawls, otter trawls and floating traps, and otter trawls and pots/traps, respectively. These fisheries are mixed fisheries (indiscriminate), where squid, Atlantic mackerel, silver hake, skates, and other species are harvested with summer flounder, scup, and/or black sea bass. The 2010 LOF indicates that the Mid-Atlantic bottom trawl fishery is a Category II fishery, with potential to result in incidental injury and mortality of Western North Atlantic common dolphins, white-sided dolphin, short-finned pilot whales, and long-finned pilot whales. Based on NMFS observer data for the period of January 2007 through December 2009, there were no observed interactions between marine mammals in the Mid-Atlantic bottom trawl fishery, where summer flounder, scup, or black sea bass were the fishing trip targets. The Atlantic mixed species trap/pot fishery is listed as a Category II fishery, with potential to result in incidental injury and mortality of North Atlantic fin whales and humpback whales in the Gulf of Maine. This fishery was classified by analogy. There have been no observed interactions of fin and humpback whales with the Atlantic mixed species trap/pot fishery; however, the lobster trap/pot fishery has been involved in entanglements with large cetaceans. However, there were 3 observed interactions of dead seals (1 gray seal; 2 unknown spp.) with gill net gear in the NMFS observer data for the period of January 2007 through December 2009 where summer flounder was the trip target.

The NMFS observer data for the period of January 2007 through December 2009 indicate there were 18 sea turtle takes (1 Kemp’s ridley, 1 leatherback, 16 loggerhead) where summer flounder was the species being targeted for the trip where bottom otter trawls were used. While a green turtle take has not occurred during this time period, the trawl fishery has taken green turtles in prior years; therefore, the green turtle description is included in this section. These 18 takes involved 1 leatherback turtle and 12 loggerheads turtles released alive, 2 loggerheads released

[5] A commercial fishery with a “remote likelihood” of causing incidental mortality and serious injury of marine mammals is one that collectively with other fisheries is responsible for the annual removal of: (1) 10% or less of any marine mammal stock's potential biological removal level, or (2) More than 10% of any marine mammal stock's PBR level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's PBR level.

alive and resuscitated, and 2 loggerheads and 1 Kemp's ridley turtle were dead (NMFS, pers. comm. August 23, 2010).

Since 1992, all vessels using bottom trawls to fish for summer flounder in specific areas and times off VA and NC have been required to use NMFS-approved Turtle Excluder Devices (TEDs) in their nets (57 FR 57358, December 4, 1992; 50 CFR 223.206(d)(2)(iii)). NMFS announced in May 2009 (74 FR 21627, May 8, 2009) its intention to prepare an Environmental Impact Statement (EIS) and to conduct public scoping meetings to comply with NEPA by assessing potential impacts resulting from the proposed implementation of new sea turtle regulations in the Atlantic and Gulf of Mexico trawl fisheries. These requirements are proposed to protect threatened and endangered sea turtles in the western Atlantic Ocean and Gulf of Mexico from incidental capture, and would be implemented under the ESA. NMFS announced consideration of rulemaking for these new sea turtle regulations in an Advance Notice of Public Rulemaking (72 FR 7382, February 15, 2007). NMFS will evaluate a range of alternatives in the Draft EIS to reduce sea turtle bycatch and mortality in trawl fisheries along the Atlantic Coast.

Murray (2008) evaluated fisheries observers documented interactions between bottom otter trawl gear and sea turtles in the U.S. Mid-Atlantic region (i.e., south of 41°30’N/66°W to approximately 35º00’N/75°30’W) during 1996-2004. Bycatch rates and total mortality were only estimated for loggerhead turtles, the species involved in the majority of interactions. Vessel Trip Reports (VTR) from fishermen operating bottom otter trawl gear in the Mid-Atlantic were used to expand predicted bycatch rates to total estimated bycatch. Predicted bycatch rates were stratified by a combination of significant variables, which included latitude zone, depth, sea surface temperature, and the use of a working TED. Estimated average annual bycatch of loggerhead turtles in Mid-Atlantic bottom otter trawl gear during 1996-2004 was 616 animals (C.V.=0.23, 95% C.I. over the 9 year period: 367-890). Murray (2006) provided an estimate of loggerhead bycatch in all fisheries using bottom otter trawl fish gear in Mid-Atlantic waters; estimated bycatch in scallop trawl gear is reported separately in Murray (2007). In Murray (2006), there was not enough evidence to suggest that bycatch rates differed significantly among target species groups; thus, rates were not stratified, nor total mortality estimates reported in this manner. However, in Murray (2008) NERO requested this information by FMP group to support their ESA Section 7 consultations for various FMPs. This information, evaluated from 2000-2004, suggests that 47 percent of the loggerhead takes for that period were by the Mid-Atlantic bottom otter trawl fish gear targeting summer flounder, scup, and black sea bass (Murray 2008). It should be noted that Murray (2008) highlights extensive data and analysis caveats, which include but are not limited to, assumptions about bycatch rates within expansion stratum, assumptions about bycatch rates across fisheries and years, as well as the representativeness of VTR data. The original report should be consulted when interpreting these results.

The following provides more detailed descriptions of the four species of turtle with documented interaction with the summer flounder fishery; the literature cited in the following turtle descriptions can be found in Appendix A of this EA.

<u>*Leatherback Sea Turtle:*</u> Leatherback turtles (*Dermochelys coriacea*) were listed as endangered under the ESA on June 2, 1970. Leatherback turtles are widely distributed throughout the oceans

of the world, and are found in waters of the Atlantic, Pacific, Caribbean, and the Gulf of Mexico (Ernst and Barbour 1972). It is the largest living turtle and ranges farther than any other sea turtle species, exhibiting broad thermal tolerances (NMFS and USFWS, 1995). Evidence from tag returns and strandings in the western Atlantic suggests that adults engage in routine migrations between boreal, temperate and tropical waters (NMFS and USFWS, 1992). Located in the northeastern waters during warmer months, this species is found in coastal waters of the continental shelf and near the Gulf Stream edge, but rarely in the inshore areas. A 1979 aerial survey of the outer Continental Shelf from Cape Hatteras, North Carolina to Cape Sable, Nova Scotia showed leatherbacks to be present throughout the area with the most numerous sightings made from the Gulf of Maine south to Long Island. Shoop and Kenney (1992) also observed concentrations of leatherbacks during the summer off the south shore of Long Island and off New Jersey. This aerial survey estimated the leatherback population for the northeastern U.S. at approximately 300-600 animals (from near Nova Scotia, Canada to Cape Hatteras, North Carolina).

Leatherbacks are predominantly pelagic and feed on jellyfish (i.e., *Stomolophus, Chryaora,* and *Aurelia* (Rebel 1974)), cnidarians (*medusae, siphonophores*) and tunicates (*salps, pyrosomas*). Time-Depth-Recorder data recorded by Eckert et al. (1998b) indicate that leatherbacks are night feeders and are deep divers, with recorded dives to depths in excess of 1000 meters. However, leatherbacks may come into shallow waters if there is an abundance of jellyfish nearshore. Leary (1957) reported a large group of up to 100 leatherbacks just offshore of Port Aransas, Texas associated with a dense aggregation of *Stomolophus*. Leatherbacks also occur annually in places such as Cape Cod and Narragansett Bays during certain times of the year, particularly the fall.

Anthropogenic impacts to the leatherback population are similar to those for the loggerhead sea turtle, including fishery interactions as well as intense exploitation of the eggs (Ross 1979). Eckert (1996) and Spotila et al. (1996) recorded that adult mortality has also increased significantly, particularly as a result of driftnet and longline fisheries. Zug and Parham (1996) attribute the sharp decline in leatherback populations to the combination of the loss of long-lived adults due to fishery related mortality and the lack of recruitment (because of intense egg harvesting). Poaching is not known to be a problem for U.S. nesting populations. However, numerous fisheries that occur in both U.S. state and federal waters are known to negatively impact juvenile and adult leatherback sea turtles, including incidental takes in several commercial and recreational fisheries. Fisheries known or suspected to incidentally capture leatherbacks include those deploying bottom trawls, off-bottom trawls, purse seines, bottom longlines, hook and line, gill nets, drift nets, traps, haul seines, pound nets, beach seines, and surface longlines (NMFS and USFWS 1992). Leatherback interactions with the southeast shrimp fishery are also common. Turtle Excluder Devices (TEDs), typically used in the southeast shrimp fishery to minimize sea turtle/fishery interactions are less effective for the large-sized leatherbacks. As such, NMFS has used several alternative measures to protect leatherback sea turtles from lethal interactions with the shrimp fishery including establishment of a Leatherback Conservation Zone (60 FR 25260) and emergency measures such as the implementation of area specific 30-day TED requirements (December 8, 1999 (64 FR 69416)) when warranted. Leatherbacks are also susceptible to entanglement in lobster and crab gear, possibly as a result of attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, attraction to the buoys which could appear as prey, or the gear configuration which may be more likely to wrap around flippers.

Nest counts are currently the only reliable indicator of population status available for leatherback turtles. The status of the leatherback population in the Atlantic is difficult to assess since major nesting beaches occur over broad areas within tropical waters outside the United States. The most recent 5-year ESA leatherback turtle status review was completed in 2007 (NMFS & USFWS 2007c) which included an analysis of the most recent population and demographic data available for the species. The most recent population size estimate for the North Atlantic Ocean is a range of 34,000- 94,000 adult leatherbacks where the species appears to be stable or increasing (NMFS & USFWS 2007c). However, the East Pacific and Malaysian leatherback populations appear to have collapsed. Given the best available information, NMFS & USFWS (2007) concluded that the leatherback turtle should not be reclassified under the ESA and should remain listed as endangered. In addition, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to the endangered leatherback turtle is warranted.

Green Sea Turtle: Green sea turtles are more tropical in distribution than loggerheads, and are generally found in waters between the northern and southern 20°C isotherms. In the western Atlantic region, the summer developmental habitat encompasses estuarine and coastal waters as far north as Long Island Sound, Chesapeake Bay, and the North Carolina sounds, and south throughout the tropics (NMFS 1998). Most of the individuals reported in U.S. waters are immature (NMFS 1998). Green sea turtles found north of Florida during the summer must return to southern waters in autumn or risk the adverse effects of cold temperatures.

There is evidence that green turtle nesting has been on the increase during the past decade. For example, increased nesting has been observed along the Atlantic coast of Florida on beaches where only loggerhead nesting was observed in the past (NMFS 1998). Recent population estimates for the western Atlantic area are not available. Green turtles are threatened by incidental captures in fisheries, pollution and marine habitat degradation, destruction/disturbance of nesting beaches, and other sources of man-induced and natural mortality.

Juvenile green sea turtles occupy pelagic habitats after leaving the nesting beach. At approximately 20 to 25 cm carapace length, juveniles leave pelagic habitats, and enter benthic foraging areas, shifting to a chiefly herbivorous diet (NMFS 1998). Post-pelagic green turtles feed primarily on sea grasses and benthic algae, but also consume jellyfish, salps, and sponges. Known feeding habitats along U.S. coasts of the western Atlantic include shallow lagoons and embayments in Florida, and similar shallow inshore areas elsewhere (NMFS 1998). Sea sampling data from the summer flounder bottom trawl fishery has recorded incidental takes of green turtles

The most recent 5-year ESA green sea turtle status review was completed in 2007 (NMFS & USFWS 2007a) which included an analysis of the most recent population and demographic data available for green sea turtles. Overall, of the 23 threatened population nesting sites for which data are available, 10 nesting populations are increasing, 9 are stable, and 4 are decreasing (NMFS & USFWS 2007a). Long term continuous data sets (i.e., ≥ 20 years) are available for nine sites, all of which are increasing. Despite the apparent global increase in numbers, NMFS & USFWS (2007a) noted that this positive overall trend should be viewed with caution because trend data are available for just over half of all sites examined. Within the Western Atlantic/Caribbean, there are five threatened breeding populations, all of which appear to be stable or increasing (NMFS & USFWS 2007a). The green turtle nesting population of Florida, which is listed as endangered, also appears to be increasing based on 18 years (1989-2006) of index nesting data collected throughout the state (NMFS & USFWS 2007a). While green turtle nest counts have generally increased, NMFS & USFWS (2007a) concluded that populations of both endangered and threatened green turtles should not be reclassified under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA to both endangered and threatened green turtle populations is warranted.

Kemp's ridley Sea Turtle: Kemp's ridley turtles (*Lepidochelys kempii*) were listed as endangered under the ESA on December 2, 1970. The only major nesting site for ridleys is a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963). Juvenile Kemp's ridleys inhabit northeastern US coastal waters where they forage and grow in shallow coastal areas during the summer months. Juvenile ridleys migrate southward with autumnal cooling and are found predominantly in shallow coastal embayments along the Gulf Coast during the late fall and winter months. Ridleys found in mid-Atlantic waters are primarily post-pelagic juveniles averaging 40 cm in carapace length, and weighing less than 20 kg. After loggerheads, they are the second most abundant sea turtle in Virginia and Maryland waters, arriving there during May and June and then emigrating to more southerly waters from September to November. In the Chesapeake Bay, ridleys frequently forage in shallow embayments, particularly in areas supporting submerged aquatic vegetation (Lutcavage and Musick 1985).

The model presented by Crouse et al. (1987) illustrates the importance of subadults to the stability of loggerhead populations and may have important implications for Kemp's ridleys. The vast majority of ridleys identified along the Atlantic Coast have been juveniles and subadults. Sources of mortality in this area include incidental takes in fishing gear, pollution and marine habitat degradation, and other man-induced and natural causes. Loss of individuals in the Atlantic, therefore, may impede recovery of the Kemp's ridley sea turtle population. Sea sampling data from the northeast otter trawl fishery and southeast shrimp and summer flounder bottom trawl fisheries has recorded takes of Kemp's ridley turtles.

The Kemp's ridley population, as measured by number of nesting females, declined precipitously from the late 1940's through the mid-1980's. Due to intensive conservation actions, the Kemp's ridley began to slowly rebound during the 1990's and this increasing trend has continued to this day (NMFS & USFWS 2007d). Approximately 4,000 females are currently documented nesting annually, which is less than half of the downlisting criterion of 10,000 nests. As a result, the most recent five year review conducted by NMFS & USFWS 2007d concluded that the species should not be reclassified under the ESA and should remain listed as endangered. In addition, a full revision of the current Recovery Plan for the Kemp's ridley Sea Turtle (which was signed in 1992) is currently under way by the services.

Loggerhead Sea Turtle: The loggerhead sea turtle occurs throughout the temperate and tropical regions of the Atlantic, Pacific and Indian Oceans (Dodd 1998). The loggerhead turtle was listed as "threatened" under the ESA on July 28, 1978, but is considered endangered by the World Conservation Union (IUCN) and under the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). Loggerhead sea turtles are found in a wide range of habitats throughout the temperate and tropical regions of the Atlantic. These habitats include open ocean, continental shelves, bays, lagoons, and estuaries (NMFS& USFWS 2007b).

Because they are limited by water temperatures, loggerhead sea turtles do not usually appear on the summer foraging grounds in the Gulf of Maine until June, but are found in Virginia as early as April. They remain in these areas until as late as November and December in some cases, but the large majority leaves the Gulf of Maine by mid-September. Loggerheads are primarily benthic feeders, opportunistically foraging on crustaceans and mollusks (NMFS & USFWS 1995).

The most recent 5-year ESA loggerhead sea turtle status review was completed in 2007 (NMFS & USFWS 2007b) which included a review of the most recent research results for loggerhead sea turtles. Genetic analyses conducted since the last five-year review indicate there are five demographically independent groups in the Western North Atlantic, corresponding to nesting beaches found in Florida and Mexico. The primary metric used to evaluate trends in global loggerhead populations are counts of beach nests, many of which occur in areas outside U.S. waters. Given that loggerhead nest counts have generally declined during the period 1989-2005, NMFS & USFWS (2007b) concluded that loggerhead turtles should not be delisted or reclassified and should remain designated as threatened under the ESA. However, the review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if application of the Distinct Population Segment policy under the ESA is warranted for the species. Additionally, the Center for Biological Diversity and the Turtle Island Restoration Network filed a petition to reclassify loggerhead turtles in the North Pacific Ocean as a distinct population segment (DPS) with endangered status and designate critical habitat under the ESA (72 *Federal Register* 64585; November 16, 2007). NMFS has found that the petition presented substantial scientific information and in 2008, NMFS and FWS convened a biological review team (BRT), which recently completed a status review on the loggerhead sea turtle. The BRT evaluated genetic data, tagging and telemetry data, demographics information, oceanographic features, and geographic barriers to determine whether population segments exist. The BRT submitted their independent report to NMFS and FWS on August 11, 2009, to review and determine what, if any, action is appropriate under the ESA.

6.4 Human Communities and Economic Environment

6.4.1 Fishery Descriptions

A detailed description of the economic aspects of the commercial and recreational fisheries for summer flounder, scup, and black sea bass was presented in section 3.3.1, 3.3.2, and 3.3.3, respectively, of Amendment 13 to the FMP (MAFMC 2002). Recent trends in landings and ex-vessel values are presented below.

6.4.1.1 Summer Flounder

The ex-vessel value of summer flounder landings in 2009 was approximately $21.83 million resulting from commercial landings of 11.06 million lb (5.02 million kg), with an average ex-vessel price estimated at $1.88/lb. The value of commercial landings of summer flounder from 2007 to 2009 averaged $21.92 million, with an average ex-vessel price of $2.18/lb. In general, summer flounder landings for smaller tonnage vessels tend to be greater in the summer months, while landings for larger tonnage vessels tend to be greater in the winter months. On average, higher prices tend to occur during the summer months. This price fluctuation is likely in response to supply. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3.

Summer flounder continues to be an important component of the recreational fishery. Estimates of primary species sought as reported by anglers in recent intercept surveys indicate that summer flounder recreational trips have shown an upward trend, ranging from 3.8 million in 1992 to 6.1 million in 2001. For the 2006 to 2009 period, summer flounder recreational fishing trips were estimated at 5.4, 5.8, 5.4, and 4.8 million, respectively (section 8.11.3.1.2).

6.4.1.2 Scup

Commercial scup landings were approximately 8.20 million lb (3.72 million kg; from ME to Cape Hatteras, NC) and valued at $6.30 million in 2009 ($0.76/lb). The value of commercial landings of scup from 2007 to 2009 averaged $7.54 million, with an average ex-vessel price of $0.87/lb. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3.

Scup continues to be an important component of the recreational fishery. Estimates of primary species sought as reported by anglers in recent intercept surveys indicate that scup recreational trips have shown an upward trend, ranging from 0.20 million in 1997 to 0.97 million in 2003. For the 2006 to 2009 period, scup recreational fishing trips were estimated at 0.47, 0.74, 0.73, and 0.54 million, respectively (section 8.11.3.1.2).

6.4.1.3 Black Sea Bass

Commercial black sea bass landings were approximately 1.29 million lb (0.59 million kg; from ME to Cape Hatteras, NC) and valued at $3.50 million in 2009 ($2.70/lb). The value of commercial landings of black sea bass from 2007 to 2009 averaged $5.05 million, with an average ex-vessel price of $2.95 per lb. Recent summer flounder, scup, and black sea bass landing patterns among ports are presented in section 6.4.3.

Black sea bass continues to be an important component of the recreational fishery. Estimates of primary species sought as reported by anglers in recent intercept surveys indicate that black sea bass recreational trips have shown an upward trend, ranging from 0.14 million in 1999 to 0.43 million in 2007. For the 2006 to 2009 period, summer flounder recreational fishing trips were estimated at 0.25, 0.43, 0.27, and 0.35 million, respectively (section 8.11.3.1.2).

6.4.2 Description of the Areas Fished

The baseline impact of the summer flounder, scup, and black sea bass commercial fisheries on the environment is fully described in section 3.2.8 of Amendment 13 to the FMP (MAFMC 2002). It should be noted that the VTR data presented does not represent every trip made in these three fisheries because state-only permitted vessel effort may not be captured through VTRs.

6.4.2.1 Summer Flounder

NMFS 2009 VTR data indicated that 16,416 trips, by five major gear types, caught a total of 9.37 million lb (4.25 million kg) of summer flounder; landing 9.11 million lb (4.13 million kg) and discarding 0.26 million lb (0.12 million kg). The majority of the trips and catch were made by bottom otter and beam trawls (72.1 percent of trips, 96.0 percent of catch), followed by gillnets (11.0 percent of trips, 1.6 percent of catch), handline “other” (10.5 percent of trips, 1.2 percent of catch), scallop dredges (5.1 percent of trips, 1.0 percent of catch), and pots and traps (1.1 percent of trips, 0.3 percent of catch). There were eight statistical areas, which individually accounted for greater than 5 percent of the summer flounder catch in 2009 (Table 1). Collectively, these eight areas accounted for 76 percent of the summer flounder catch. There were six statistical areas, which individually accounted for greater than 5 percent of the trips which caught summer flounder in 2009 (Table 2). Collectively, these six areas accounted for 77 percent of the trips that caught summer flounder and 36 percent of the 2009 summer flounder catch.

6.4.2.2 Scup

NMFS 2009 VTR data indicated that 7,771 trips, by six major gear types, caught a total of 6.50 million lb (2.95 million kg) of scup. Of these, 6.24 million lb (2.83 million kg) of scup were landed, and 0.26 million lb (0.12 million kg) were discarded. The majority of the trips and catch were made by bottom otter and beam trawls (70.0 percent of trips, 92.3 percent of catch), followed by hand line "other" (14.7 percent of trips, 1.3 percent of catch), pots and traps (8.4 percent of trips, 4.9 percent of catch), gillnets (6.7 percent of trips, 0.9 percent of catch), scallop dredges (less than 0.1 percent of trips, 0.3 percent of catch), and mid-water otter trawls (less than 0.1 percent of trips, 0.7 percent of catch). There were seven statistical areas, which individually accounted for greater than 5 percent of the scup catch in 2009 (Table 1). Collectively, these seven areas accounted for 93 percent of the scup catch. There were seven statistical areas, which individually accounted for greater than 5 percent of the trips which caught scup in 2009 (Table 2). Collectively, these seven areas accounted for 97 percent of the trips that caught scup and 81 percent of the 2009 scup catch.

6.4.2.3 Black Sea Bass

NMFS 2009 VTR data indicated that 4,388 trips, by four major gear types, caught a total of 1.01 million lb (0.46 million kg) of black sea bass. Of these, 0.94 million lb (0.43 million kg) of black sea bass were landed, and 0.07 million lb (0.03 million kg) were discarded. The majority of the trips and catch were made by bottom otter and beam trawls (51.3 percent of trips, 51.7 percent of catch), followed by pots and traps (28.4 percent of trips, 42.1 percent of catch), handline "other" (15.2 percent of trips, 5.5 percent of catch), and gillnets (4.7 percent of trips, 0.6 percent of catch). There were five statistical areas, which individually accounted for greater than 5 percent of the black sea bass catch in 2009 (Table 1). Collectively, these five areas accounted for 64 percent of the black sea bass catch. There were eight statistical areas, which individually accounted for greater than 5 percent of the trips which caught black sea bass in 2009 (Table 2). Collectively, these eight areas accounted for 86 percent of the trips that caught black sea bass and 47 percent of the 2009 black sea bass catch.

6.4.3 Port and Community Description

The ports and communities that are dependent on summer flounder, scup, and black sea bass are fully described in Amendment 13 to the FMP (section 3.4; MAFMC 2002).

To examine recent landings patterns among ports, 2009 NMFS dealer data are used. The top commercial landings ports for summer flounder, scup, and black sea bass by pounds landed are shown in Table 3. A "top port" is defined as any port that landed at least 100,000 lb of summer flounder, scup, or black sea bass. Related data for the recreational fisheries are shown in Table 4. However, due to the nature of the recreational database (Marine Recreational Fisheries Statistical Survey--MRFSS), it is inappropriate to desegregate to less than state levels. The level of precision of annual harvest estimates from MRFSS data depend on the survey sample sizes, the frequency of sampled angler trips that caught the species, and the variability of numbers caught among those trips. Harvest estimates are always progressively less precise at lower levels of stratification. Thus port-level recreational data are not shown.

6.4.4 Analysis of Permit Data

Federally Permitted Vessels

This analysis estimates that in 2009, there were 2,206 vessels with one or more of the following three commercial or recreational federal Northeast permits: summer flounder, scup, and black sea bass (Table 5). A total of 957, 808, and 845 federal commercial permits for summer flounder, scup, and black sea bass, respectively, had been issued to Northeast region fishing vessels (Table 5). For party/charter operators, a total of 929, 834, and 904 federal permits were issued for summer flounder, scup, and black sea bass, respectively (Table 5).

These three fisheries (summer flounder, scup, and black sea bass) have vessels permitted as commercial, party/charter for participation in recreational fisheries, or both. Of the 2,206 vessels with at least one federal permit, there were 1,226 that held only commercial permits for summer flounder, scup, and/or black sea bass while there were 881 vessels that held only a recreational permit. The remaining vessels (99) held some combination of recreational and commercial permits (Table 5). Whether engaged in a commercial or recreational fishing activity, vessels may hold any one of seven combinations of summer flounder, scup, and black sea bass permits. The total number of vessels holding any one of these possible combinations of permits by species and commercial or recreational status are reported in Table 5.

Row sums in Table 5 indicate the total number of vessels that have been issued some unique combination of commercial permits. For example, there were 314 vessels whose only commercial permit was for summer flounder. By contrast, there were 469 vessels that held all three commercial permits. Column totals in Table 5 indicate the total number of vessels that have been issued some unique combination of federal recreational permits. For example, there were 7 vessels whose only recreational permit was for scup, while 716 vessels held all three recreational permits. Each cell in Table 5 reports the total number of vessels that have a unique combination of recreational and commercial permits by species. For example, the cell entry of 1 in row 2 column 2 indicates that there was 1 vessel that held the unique combination of single summer flounder commercial permit and a single summer flounder recreational permit. Note that each cell entry in row one corresponds to vessels that held no commercial permit for summer flounder, scup or black sea bass, while each cell entry in column 1 corresponds to vessels that held no such recreational permit.

In addition to summer flounder, scup, and black sea bass, there are a number of alternative commercial or recreational fisheries for which any given vessel might possess a federal permit. The total number of vessels holding any one or more of these other permits is reported in Table 6.

Of the vessels that hold at least one federal permit for summer flounder, scup, or black sea bass, the largest number of commercial permit holders are held by Massachusetts vessels, followed by New Jersey, Rhode Island, New York, North Carolina, and Virginia (Table 7). The fewest permits are held by Delaware and Florida vessels. In terms of average tonnage, the largest commercial vessels are found in Pennsylvania, followed by Virginia, Connecticut, North Carolina, and Massachusetts. In terms of average length, the largest commercial vessels are found in Virginia, Pennsylvania, and North Carolina followed by New Jersey, Connecticut, Massachusetts, and Rhode Island. In terms of average horse power, the largest commercial vessels are found in Pennsylvania followed by Connecticut, Virginia, Florida, and New Jersey.

For party/charter vessels (Table 8), the largest numbers of permit holders are found in Massachusetts, followed by New Jersey and New York. The fewest permits are in Florida and North Carolina. As might be expected, recreational vessels are smaller on average than commercial vessels. In terms of average length, the largest party/charter vessels operate out of principal ports in the state of Pennsylvania, followed by Connecticut, Florida, New York, Maryland, and North Carolina. In terms of average horse power, the largest recreational vessels are found in Florida, North Carolina, Virginia, and Pennsylvania.

For vessels that hold a combination of commercial and party/charter permits, most vessels operate out of ports in the state of New York followed by Massachusetts, Rhode Island, New Jersey, North Carolina, and Virginia (Table 9). Like the vessels that hold only party/charter summer flounder, scup, or black sea bass permits, these vessels are generally smaller than exclusively commercial vessels.

Summer flounder landings are allocated by state, though vessels are not constrained to land in their home state. It can be useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. With the exception of the states of Pennsylvania and Virginia, a high percentage of commercial vessel owners list the same state as both the vessel owner's declared principal port of landing and their identified home port (Table 7).

A high percentage of recreational vessel owners list the same state as both the vessel owner's declared principal port of landing and their identified home port, with the exception of Pennsylvania (Table 8). With the exception of the states of Connecticut, Rhode Island, and Pennsylvania, a high percentage of recreational/commercial vessel owners list the same state as both the vessel owner's declared principal port of landing and their identified home port (Table 9).

Those vessels which have generally made it a practice to land in their home state may have less inherent flexibility in altering their landing state to adjust to smaller quotas in their home state.

Dealers

There were 244 Federally-permitted dealers who bought summer flounder, scup and/or black sea bass in 2009 from Maine through North Carolina. They were distributed by state as indicated in Table 10. Employment data for these specific firms are not available. In 2009, these dealers from Maine through North Carolina bought approximately $20.8 million worth of summer flounder; $6.3 million worth of scup; and $3.5 million worth of black sea bass.

7.0 ENVIRONMENTAL CONSEQUENCES AND REGULATORY ECONOMIC EVALUATION OF ALTERNATIVES

This EA analyzes the impacts of the alternatives which specify 2011 commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to achieve, but not exceed, the ABC. Changes to other commercial management measures for summer flounder, scup, and black sea bass were not recommended for 2011 by the Council and Board. Therefore, it is recommended that other commercial management measures in place remain unchanged (*status quo*) for the 2011 fishing year (see section 5.0 for additional details). The Council and Commission's Board will meet in December 2010 to adopt 2011 recreational management measures when more complete data regarding 2010 recreational landings are available, which will be presented at that time to the Regional Administrator in a recreational specifications document. The nature and extent of the management programs for summer flounder, scup, and black sea bass fisheries have been examined in detail in the EAs and EISs prepared for the management actions and are detailed in section 4.0. The aspects of the environment (Valued Ecosystem Components - VECs) that could be affected by the proposed actions are detailed in section 6.0, and the analysis in this section focuses on impacts relative to those VECs (managed resources and non-target species, habitat (including EFH), protected resources, and human communities).

To conduct a more complete socioeconomic analysis, the socioeconomic impacts of the preferred alternatives are analyzed in combination in section 7.5 and in section 8.11.3. Combined impacts were examined because many of the vessels active in these fisheries participate in more than one of these fisheries at a time.

7.1 Summer Flounder Alternatives

Section 5.1 fully described the summer flounder alternatives under consideration for 2011. In addition, section 4.4 details specific methods of analysis for this section. For reference, the summer flounder alternatives are:

- **Preferred Alternative 1 - TAL of 29.48 million lb** (a 17.16 million lb Council-adjusted commercial quota; a 11.44 million lb adjusted recreational harvest limit; 884,400 lb RSA)

- **Non-preferred Alternative 2 - Most Restrictive/*Status quo* (No Action) TAL of 22.13 million lb** (a 12.88 million lb Council-adjusted commercial quota; a 8.59 million lb adjusted recreational harvest limit; 663,900 lb RSA)

- **Non-preferred Alternative 3 - Least Restrictive TAL of 35.05 million lb** (a 20.40 million lb Council-adjusted commercial quota; a 13.60 million lb adjusted recreational harvest limit; 1,051,500 lb RSA)

Box 7.1 below provides the percent change in the 2011 overall TAL, Council-adjusted commercial quotas, and recreational harvest limits for each alternative, when compared to 2010.

Box 7.1 Comparison of the percentage change in 2011 overall summer flounder TAL, Council-adjusted commercial quotas, and recreational harvest limits for each alternative, when compared to 2010.*				
		Alternative 1	**Alternative 2**	**Alternative 3**
Summer Flounder	**Change in overall TAL**	+33.2	0	+58.4
	Council-adjusted Commercial Quota	+33.5	+0.2	+58.8
	Council-adjusted Recreational Harvest Limit	+33.2	0	+58.3
*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages and/or transfers are available, and the final RSA values are set. The small percent change in *status quo* (alt. 2) Council-adjusted commercial quota, when compared to 2010, is due to a 2010 commercial overage adjustment.				

7.1.1 Biological Impacts

This section details the impacts of the three summer flounder alternatives (see section 7.1) on the managed resource, as well as other non-target species.

The TAL under preferred alternative 1 has a 50 percent probability of achieving the target F=0.26 in 2011. This TAL is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013, and maintains better than a 50 percent probability of success as required by the judicial order resulting from the Natural Resources Defense Council (NRDC) versus Daley litigation[6] (i.e., at least 50 percent). Alternative 1 represents an increase in overall TAL when compared to the *status quo*, and it is consistent with the best scientific information available at the time of developing specifications. Analysis by the SDWG and SSC indicates fishing at a TAL at or below the level recommended under alternative 1 would result in positive stock growth towards rebuilding goals. Under this alternative, the 2011 Council-adjusted commercial quota is 33.5 percent higher than 2010. The commercial fishery for summer flounder is primarily prosecuted with otter trawls and is a mixed fishery (see section 6.1.3 for additional details).

Under alternative 1, this larger commercial quota is not expected to result in negative impacts to other fisheries relative to the *status quo*. Several possibilities exist that influence fishing effort and thus the catch of other species. A larger quota could result in more, or longer fishing trips resulting in an increase in the incidental catch rates of other species relative to 2010. As such, a larger summer flounder Council-adjusted commercial quota could result in negative impacts on

[6] National Resources Defense Counsel v. Daley, Civil No. 1:99 CV 00221 (JGL)

other fisheries, relative to the *status quo* (alternative 2). Conversely, a larger quota may mean that states establish higher possession limits, which result in an equal or lower number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase in future years which could result in increased catch-per-unit-effort (i.e., fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will not result in large increases in the incidental catch rates of other species relative to 2010 as the increase in quota associated with alternative 1 may not necessarily translate to more or longer fishing trips. The 2011 recreational limit under alternative 1 is 33.2 percent higher than the recreational harvest limit when compared to 2010. The adjusted recreational limits under this alternative allow for more recreational landings in 2010 compared to the *status quo* alternative. Overall, preferred alternative 1 is expected to result in positive biological impacts, relative to the *status quo* measures for summer flounder (alternative 2).

The TAL under non-preferred alternative 2 (*status quo*) is projected to rebuild the spawning stock biomass to SSB_{MSY} by January 1, 2013 and under this alternative it may be more likely that when the 2010 F is estimated (in 2011 when complete 2010 landings data are available), it will not exceed the threshold F=0.31. The magnitude of the positive impacts associated with this alternative (alternative 2) is expected to be greater than those under alternative 1 because of the higher probability of achieving the target F, thus reducing the risk of exceeding the maximum fishing mortality threshold (MFMT). Although the TAL proposed under alternative 2 is the same TAL that was implemented in 2010, the biological impacts of that TAL on the managed resource are not the same across years. Stock demographics change and the relative biological impacts of that TAL also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the preferred alternative (alternative 1). Under this alternative, the 2011 adjusted commercial quota is approximately 0.2 percent higher when compared to 2010. Given that the proposed commercial quota under alternative 2 is nearly identical to the commercial quota implemented in 2010, it is not expected that changes in fishing effort will occur as a consequence of this alternative. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the proposed measures will not result in an increase in the incidental catch rates of other species relative to 2010. The 2011 recreational limit under alternative 2 is identical to the limit in 2010; therefore, recreational landing opportunities will likely be similar. Overall, non-preferred alternative 2 is expected to result in positive biological impacts, when compared to the 2010 measures for summer flounder.

There is greater risk of overfishing associated with this alternative (alternative 3) relative to alternative 1 or 2. The proposed TAL under non-preferred alternative 3 has a 50 percent probability of achieving the threshold F= 0.31 in 2011. There is potential for negative impacts on the stock due to an increased risk that overfishing will occur by fishing at the threshold F, resulting in slowed or negative gains in rebuilding efforts. Under this alternative, the 2011 adjusted commercial quota is approximately 58.8 percent higher when compared to 2010. The same discussion above for alternative 1 on the effects of larger quotas on catches of other species also applies here. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the proposed measures will not result in an increase in the incidental catch rates of other species relative to 2010. The 2011 recreational limit under alternative 3 is 58.3 percent higher than the recreational harvest limit when compared to 2010. The adjusted recreational limits under this alternative allows for greater recreational landings in 2011 compared to 2010. Overall, non-preferred alternative 3 is expected to result in negative impacts, when compared to the *status quo*.

7.1.2 Habitat Impacts

The principal commercial gear used to harvest summer flounder is the bottom otter trawl with lesser amounts in other gears, including scallop dredges, the hook and line fishery, and the pound net fishery. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004). Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the Mid-Atlantic region where summer flounder are caught. Table 11 describes the range of potential habitat impacts that could occur under each summer flounder quota alternative with more detailed discussion below.

The preferred alternative 1 includes an increase in the summer flounder commercial quota by 33.5 percent compared to 2010 (Box 7.1). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is 0.2 percent higher when compared to 2010. The commercial quota under alternative 3 is 58.8 percent higher than the 2010 commercial quota. Given the proposed commercial quota under alternative 2 is only slightly higher when compared to the commercial quota implemented in 2010, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The increase in quota under alternatives 1 and 3 could potentially result in more, or longer fishing trips, with a corresponding increase in habitat impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase under this schedule which could result in increased catch-per-unit-effort (i.e., fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort, it is likely that the proposed measures will not result in large increases in effort relative to 2010 as the increase in quota associated with alternative 1 and 3 may not necessarily translate to more or longer fishing trips. In Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Given the range of potential habitat impacts and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, alternatives 1 is expected to have effects on habitat and EFH that are neutral to negative, alternative 2 is expected to result in neutral impacts, and alternative 3 impacts are expected to be neutral to negative, when compared to existing impacts.

7.1.3 Impacts on Endangered and Other Protected Species

The principal commercial gear used to harvest summer flounder is the bottom otter trawl with lesser amounts in other gears, including scallop dredges, the hook and line fishery, and the pound net fishery. As discussed in section 6.3, the 2010 LOF indicates that the Mid-Atlantic bottom trawl fishery is a Category II fishery, and the three other fisheries which harvest summer flounder (sea scallop dredge, the hook and line, and pound net fishery) are listed as Category III. None of these fisheries have documented marine mammal takes where summer flounder was the target species. However, over the last few years there have been documented sea turtle takes where summer flounder was the target species (see section 6.3 for additional discussion). It is reasonable to assume that the extent of interactions between these commercial fishing gears and endangered and protected resources is related to fishing effort.

The preferred alternative 1 includes an increase in the summer flounder commercial quota by 33.5 percent compared to 2010 (Box 7.1). Alternative 2 (*status quo*) is the most restrictive alternative, of the three considered, and the Council-adjusted commercial quota is 0.2 percent higher when compared to 2010, with the small difference due to a 2010 overage adjustment. The commercial quota under alternative 3 is 58.8 percent higher than the 2010 commercial quota. Given the proposed commercial quota under alternative 2 is only slightly higher when compared to the commercial quota implemented in 2010, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The increase in quota under alternatives 1 and 3 could potentially result in more, or longer fishing trips, with a corresponding increase in protected resources impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal or lower number of fishing trips landing a larger volume of fish. In addition, summer flounder is under a rebuilding schedule. As such, the overall stock size and age structure have the potential to increase under this schedule which could result in increased catch-per-unit-effort (i.e. fewer trips landing more or larger (heavier) fish). While it is not known with certainty how the proposed measures will affect fishing effort and catches endangered and protected resources, it is likely that the proposed measures will not result in large increases in interactions relative to 2010 as the increase in quota associated with alternative 1 and 3 may not necessarily translate to more or longer fishing trips. The availability of endangered and protected resources to summer flounder fishing gears is also affected by the stock status (i.e., increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects on endangered and protected resources that are neutral (under alternative 2) to neutral to negative as expected under alternatives 1 and 3 due to potentially increased effort, when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the Atlantic Large Whale Take Reduction Plan (ALWTRP), Harbor Porpoise Take Reduction Plan (HPTRP), MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2010.

7.1.4 Socioeconomic Impacts

The proposed 2011 TAL of 29.48 million lb (Council-adjusted commercial quota and recreational harvest limit of 17.16 and 11.44 million lb, respectively) under preferred alternative 1 is approximately 33.2 percent higher than the *status quo* TAL (non-preferred alternative 2). Under alternative 2, the 2011 TAL is identical to the TAL implemented in 2010. Alternative 3 is the least restrictive alternative, of the three considered, and its TAL is 58.4 percent greater than the *status quo* alternative. The corresponding Council-adjusted commercial quotas, adjusted recreational harvest limits, and RSA amounts associated with each evaluated summer flounder alternative are presented at the beginning of section 7.1 for reference purposes.

As a result of the higher Council-adjusted commercial quota under alternative 1 (33.5 percent increase), positive economic impacts on the summer flounder fishery are likely to occur, when compared to 2010. Each state's allocation will increase under these adjusted commercial quotas (Box 5.1.1 and section 8.11). Overall, the projected increase in landings in 2011 under alternative 1 will likely result in a revenue increase relative to the *status quo* alternative.

The proposed recreational harvest limit under alternative 1 (11.44 million lb) represents a 33.2 percent increase in harvest limit when compared to the adjusted recreational harvest limit implemented in 2010 (8.59 million lb). If recreational landings are the same in 2010 as in 2009 (6.30 million lb), the Council-adjusted recreational harvest limit is not expected to constrain recreational landings in 2011. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will be required in 2011 when compared to 2010. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 1 will likely increase recreational satisfaction for the summer flounder recreational fishery, relative to 2010. Overall, it is expected that positive social and economic impacts may occur because of the increase in total landings (in 2011), relative to the 2010 measures for summer flounder. Alternative 1 is likely to result in increase recreational satisfaction when compared to alternative 2 (*status quo*). It is expected that positive social and economic impacts will continue to be realized in the long-term, once the stock is rebuilt to sustainable levels. As discussed in section 7.1.1, the TAL under this alternative is expected to result in positive biological impacts on the managed resource in 2011, when compared to the *status quo*.

Non-preferred alternative 2 (*status quo*) contains the most restrictive measures for summer flounder. The summer flounder TAL under this alternative is 22.13 million lb for 2011 (Council-adjusted commercial quota and recreational harvest limit of 12.88 and 8.59 million lb, respectively), this TAL is identical to the TAL implemented in 2010. Note that even though the summer flounder quota under this alternative is the *status quo* measure, the 2011 Council-adjusted summer flounder quota is slightly different (0.2 percent greater) than the adjusted quota implemented in 2010 due to a 2010 commercial overage adjustment. Even though the overall summer flounder commercial quota under this alternative is only 0.2 percent higher than the adjusted quota implemented in 2010, the individual 2011 state summer flounder quota ranges from the same for most states to 4 percent higher for Massachusetts when compared to the state adjusted summer flounder quotas implemented in 2010 (section 8.11). This difference is due to 2010 commercial overage adjustments by individual states. Given that the overall potential change in commercial quota associated with this alternative when compared to 2010 is almost nil; it is expected that no adverse economic and social impacts will occur when compared to 2010.

The recreational harvest limit under alternative 2 (8.59 million lb) is identical to the limit implemented in 2010. If recreational landings are the same in 2010 as in 2009 (6.30 million lb), the Council-adjusted recreational harvest limit under this alternative is not expected to constrain recreational landings in 2011. As such, it is unlikely that more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required in 2011 to prevent anglers from exceeding the recreational harvest limit. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 2 will likely maintain the same level of recreational satisfaction in 2011 when compared to 2010 thus resulting in very little change in overall fishing effort. However, it is likely that even though anglers may face similar restrictive recreational limits in 2011, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their summer flounder effort in 2011 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is currently no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed through adjustments to the management measures. It is unlikely that the proposed management measures may restrict the recreational fishery for 2011 and that these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season); furthermore, there is no indication that any of these measures will lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). Non-preferred alternative 2 (*status quo*) is likely to result in no change in recreational satisfaction when compared to alternatives 1 and 3.

Given that the Council-adjusted commercial quota and recreational harvest level under alternative 2 are lower than under alternatives 1 and 3, it is expected that the positive social and economic impacts under this alternative would be lower than those derived when comparing to 2010. However, positive social and economic impacts will be realized in the long-term, once the stock is rebuilt to sustainable levels. This TAL has the greatest potential to reduce fishing pressure on the stock and enable rebuilding.

Non-preferred alternative 3 contains the least restrictive measures for summer flounder. The proposed 2011 TAL under this alternative is 35.05 million lb (Council-adjusted commercial quota and recreational harvest limit of 20.40 and 13.60 million lb, respectively). This alternative includes an increase in the Council-adjusted summer flounder commercial quota of approximately 58.8 percent in 2011 when compared to 2010. As a result of a higher adjusted commercial quota for summer flounder, overall positive economic impacts on the summer flounder fishery will probably occur, relative to preferred alternative 1.

The least restrictive measures for summer flounder implement a Council-adjusted recreational harvest limit that is higher (58.3 percent) than the limit implemented in 2010. If recreational landings are the same in 2010 as in 2009 (6.30 million lb), the Council-adjusted recreational harvest limit is not expected to constrain recreational landings in 2011. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above for alternative 1 also applies here. This alternative is expected to yield higher recreational satisfaction than both alternatives 1 and 2. It is unlikely that the limit under alternative 3 will negatively affect the demand for recreational fishing trips.

Overall, summer flounder measures under alternative 3 (also least restrictive) will likely result in positive social and economic impacts on the summer flounder fisheries compared to 2010. As indicated in section 7.1.1, there is potential for negative impacts on the stock due to the fact that establishing a TAL associated with the threshold F leaves little margin for error in the rebuilding schedule, has a 50 percent probability of overfishing associated with it, and given the retrospective pattern in recruitment, SSB may not increase as rapidly as anticipated. This alternative, therefore, has the potential to result in long-term social and economic negative impacts if the stock does not rebuild or overfishing occurs.

7.2 Scup Alternatives

Section 5.2 fully described the scup alternatives under consideration for 2011. In addition, section 4.4 details specific methods of analysis for this section. For reference, the scup alternatives are:

- **Preferred Alternative 1 - TAL of 20.00 million lb** (a 15.13 million lb Council-adjusted commercial quota; a 4.27 million lb adjusted recreational harvest limit; 600,000 lb RSA)

- **Non-preferred Alternative 2 - Most Restrictive / *Status quo* (No Action) TAL of 14.11 million lb** (a 10.68 million lb Council-adjusted commercial quota; a 3.01 million lb adjusted recreational harvest limit; 423,300 lb RSA)

- **Non-preferred Alternative 3 – Least Restrictive TAL of 28.96 million lb** (a 21.91 million lb Council-adjusted commercial quota; a 6.18 million lb adjusted recreational harvest limit; 868,800 lb RSA)

Box 7.2 below provides the percent change in the 2011 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2010.

Box 7.2 Comparison of the percentage change in 2011 overall scup TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2010.*

		Alternative 1	Alternative 2	Alternative 3
Scup	**Change in overall TAL**	+41.7	0	+105.2
	Council-adjusted Commercial Quota	+41.7	0	+105.1
	Council-adjusted Recreational Harvest Limit	+41.9	0	+105.3

*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages is available, and the final RSA values are set.

7.2.1 Biological Impacts

This section details the impacts of the three scup alternatives on the managed resource, as well as other non-target species. Alternative 1 is the preferred alternative and specifies a TAL of 20.00 million lb. This alternative is 41.7 percent greater than than the *status quo* TAL of 14.11 million lb (alternative 2; Box 7.2) Alternative 3 is the least restrictive alternative, of the three considered, and is 105.2 percent higher when compared to 2010.

The TAL under preferred alternative was within the range of ABC recommendations of the SSC and Scup Monitoring Committee. Even though alternative 1 represents an increase in overall TAL when compared to the *status quo*, it is consistent with the best scientific information available at the time and reflects Council concerns about rapid increases in quotas relative to MSY.

Under this alternative, the 2011 Council-adjusted commercial quota is approximately 41.7 percent higher when compared to 2010. This higher commercial quota is not expected to result in negative impacts to other fisheries relative to the *status quo*. The commercial fishery for scup is primarily prosecuted with otter trawls and floating traps and is a mixed species fishery (see section 6.1.3 for additional details). A higher quota could result in increased effort and increased catches of other species. More specifically, catch-per-unit-effort could correspondingly increase with increased stock abundance, resulting in the same number of tows landing a greater volume of fish. While it is not known with certainty how the proposed measures will affect fishing effort, it is likely the proposed measures will not result in an increase in the incidental catch rates of other species relative to 2010. The 2011 recreational limit under alternative 1 is 41.9 percent higher than the recreational harvest limit when compared to the *status quo*. The adjusted recreational limits under this alternative may allow for higher recreational landings in 2011 compared to 2010. Overall, preferred alternative 1 is expected to result in positive biological impacts, relative to 2010.

Non-preferred alternative 2 is based on a *status quo* TAL and is less than the TAL recommended by the SSC and Scup Monitoring Committee. Although the TAL proposed under alternative 2 is similar to the TAL that was implemented in 2010, the biological impacts of these TALs on the managed resource are not similar across years. Stock demographics change and the relative biological impacts of TALs also change. Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under the preferred alternative (alternative 1). Under this alternative, the 2011 Council adjusted commercial quota and recreational harvest limit are equal to 2010; therefore, fishing effort and catches of other species are not expected to change in 2011 when compared to 2010. Overall, non-preferred alternative 2 is expected to result in positive biological impacts, relative to 2010.

Non-preferred alternative 3 would increase the TAL by 105.2 percent (relative to 2010) and is inconsistent with the Council concerns about rapid increases relative to MSY given scientific uncertainty. Under this alternative, the 2011 Council-adjusted commercial quota is approximately 105.1 percent higher when compared to 2010. The same discussion above for alternative 1 on the effects of higher quotas on catches of other species also applies here. While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will not result in increases in the incidental catch rates of other species relative to 2010. The 2011 recreational limit under alternative 3 is 105.3 percent higher than the recreational harvest limit when compared to 2010. Overall, non-preferred alternative 3 is expected to result in negative biological given the Council was cautioned by the SSC and Scup Monitoring Committee about concerns with rapid increases to be MSY given scientific uncertainty, when compared to *status quo* measures for scup (alternative 2).

7.2.2 Habitat Impacts

The principal commercial gears used to harvest scup are otter trawls and floating traps, and to a lesser extent bottom and midwater trawls, and lines. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004). Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the Mid-Atlantic region where summer flounder, scup, and black sea bass are caught.

Table 12 describes the range of potential habitat impacts that could occur under each scup quota alternative with more detailed discussion below.

The preferred alternative 1 includes an increase in the scup commercial quota by 41.7 percent compared to 2010 (Box 7.2). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the adjusted commercial quota is the same as 2010. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 105.1 percent higher than the 2010 commercial quota. The increase in quota under alternatives 1 and 3 could potentially result in more, or longer fishing trips, with a corresponding increase in habitat impacts; with this effect being the lowest under alternative 2. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quota results in the same or reduced gear impacts to bottom habitats. In addition, in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Given the range of potential habitat impacts and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these alternatives are expected to have effects on habitat and EFH that range from impacts that are the same (under alternative 2) to the same to negative (under alternatives 1 and 3), when compared to existing impacts.

7.2.3 Impacts on Endangered and Other Protected Species

The principal commercial gears used to harvest scup are otter trawls and floating traps, and to a lesser extent bottom and midwater trawls, and lines. As discussed in section 6.3, the 2010 LOF indicates that the Atlantic mixed species trap/pot fishery and the Mid-Atlantic bottom trawl fishery, the primary gears, are both listed as Category II fisheries. There are no documented marine mammal species or stocks with incidental injury and mortality resulting from these fisheries where scup was the target species.

The preferred alternative 1 includes an increase in the scup commercial quota by 41.7 percent compared to 2010 (Box 7.2). Alternative 2 (*status quo*) is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is the same as 2010. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 105.1 percent higher than the 2010 commercial quota. It is difficult to predict precisely whether the commercial quota increase under these three alternatives will increase encounters with endangered or protected resources. The increase in quotas could potentially result in more, or longer fishing trips, with a corresponding potential increase in protected resource impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quota results in the same or reduced gear impacts to endangered and protected species. In addition, the availability of endangered and protected resources to scup fishing gears is also affected by the stock status (i.e. increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources and depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these alternatives are expected to have effects that range that are the same (under alternative 2) to the same to negative (under alternatives 1 and 3), when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the ALWTRP, HPTRP, MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2010.

7.2.4 Socioeconomic Impacts

The scup TAL under Council preferred alternative 1 is 20.00 million lb for 2011 (Council-adjusted commercial quota and recreational harvest limit of 15.13 and 4.27 million lb, respectively). This alternative includes an increase in the adjusted scup commercial quota of 41.7 percent in 2011 when compared to 2010. Positive economic and social impacts are expected to be realized in 2011 when compared to 2010. Non-preferred alternative 2 (*status quo*/most restrictive) proposes a TAL of 14.11 million lb and alternative 3 (least restrictive) proposes a 28.96 million lb.

The preferred scup Council-adjusted recreational harvest limit for 2011 is higher (41.9 percent) than the limit implemented in 2010. If recreational landings are the same in 2010 as in 2009 (2.94 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will not be required to prevent anglers from exceeding the recreational harvest limit in 2011. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 1 is expected to increase recreational satisfaction for the scup recreational fishery relative to 2010.

Overall, the scup measures under alternative 1 (also preferred) will likely result in positive social and economic impacts on the scup fisheries compared to 2010. The Council selected this alternative because of concerns about rapid increases in TAL relative to MSY given scientific uncertainty. The preferred alternative 1 is expected to result in positive biological impacts on the managed resource in 2011, when compared to 2010 (section 7.2.1).

Non-preferred alternative 2 (*status quo*) contains the most restrictive measures for scup. The scup TAL under this alternative is 14.11 million lb for 2011 (Council-adjusted commercial quota and recreational harvest limit of 10.68 and 3.01 million lb, respectively). This TAL is identical to the TAL implemented in 2010. The commercial quota and recreational harvest limit under this alternative are identical to the limits implemented in 2010. As a result of equal Council-adjusted commercial quota for scup, neutral economic impacts on the scup fishery are likely to occur, relative to 2010.

As indicated before, the recreational harvest limit under alternative 2 is identical to the harvest limit relative to 2010. If recreational landings are the same in 2010 as in 2009 (2.94 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will not be required to prevent anglers from exceeding the recreational harvest limit in 2011. Alternative 2 will likely maintain the same level of recreational satisfaction in 2011 when compared to 2010 thus resulting in very little change in overall fishing effort. However, it is likely that even though anglers may face similar restrictive recreational limits in 2011, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their summer flounder effort in 2011 are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed through adjustments to the management measures. It is unlikely that the proposed management measures may restrict the recreational fishery for 2011 and that these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season); furthermore, there is no indication that any of these measures will lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). Non-preferred alternative 2 (*status quo*) is likely to result in no change in recreational satisfaction when compared to 2010. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 2 will likely provide lower recreational satisfaction for the scup fishery, relative to the preferred alternative 1 and non-preferred alternative 3.

Given that the commercial quota and recreational harvest level are identical to the limits implemented in 2010, it is expected that the overall social and economic impacts will likely be neutral under this alternative when compared to 2010. However, when compared to alternatives 1 (Council preferred) and alternative 3 (least restrictive), no positive socioeconomic impacts would occur compared to 2010. However, positive social and economic impacts will be realized in the long-term, if the stock is managed sustainably. As discussed under section 7.2.1, this TAL would be expected to have the lowest risk of overfishing when compared to the other alternatives.

Non-preferred alternative 3 contains the least restrictive measures for scup. The scup TAL under this alternative is 28.96 million lb for 2011 (Council-adjusted commercial quota and recreational harvest limit of 21.91 and 6.18 million lb, respectively). This alternative includes an increase in the Council-adjusted scup commercial quota of 105.1 percent in 2011 relative to 2010.

The scup Council-adjusted recreational harvest limit for 2011 under alternative 3 is 105.3 percent higher than the limit implemented in 2010. If recreational landings are the same in 2010 as in

2009 (2.94 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will not be required to prevent anglers from exceeding the recreational harvest limit in 2011. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above also applies here. The increase in recreational satisfaction under this alternative is expected to be larger than that under the preferred alternative 1.

Overall, the scup measures under this alternative (also the least restrictive) will likely result in positive social and economic impacts on the scup fisheries in the short-term compared to 2010. However, as indicated in section 7.2.1, there is potential for negative impacts on the managed resource in 2011 when compared to 2010, given the Council was cautioned by the SSC and Scup Monitoring Committee about concerns with rapid increases to be MSY given scientific uncertainty; therefore, negative social and economic impacts may occur in the long-term if stock condition declines.

7.3 Black Sea Bass Alternatives

Section 5.3 fully described the black sea bass alternatives under consideration for 2011. In addition, section 4.4 details specific methods of analysis for this section. For reference, the black sea bass alternatives are:

- **Preferred Alternative 1 - *Status quo* (No Action) TAL of 3.60 million lb** (a 1.71 million lb Council-adjusted commercial quota; a 1.78 million lb adjusted recreational harvest limit; 108,000 lb RSA); Note: The recommendations for ABC and preferred TAC were identical and status quo; however, slightly higher projected discards for 2011 resulted in a slightly lower TAL.

- **Non-preferred Alternative 2 - Most Restrictive TAL of 2.30 million lb** (a 1.09 million lb Council-adjusted commercial quota; a 1.14 million lb adjusted recreational harvest limit; 69,000 lb RSA)

- **Non-preferred Alternative 3 – Least Restrictive TAL of 4.35 million lb** (a 2.07 million lb Council-adjusted commercial quota; a 2.15 million lb adjusted recreational harvest limit; 130,500 lb RSA)

Box 7.3 below provides the percent change in the 2011 overall TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2010.

Box 7.3 Comparison of the percentage change in 2011 overall black sea bass TAL, Council-adjusted commercial quotas and recreational harvest limits for each alternative, when compared to 2010.*				
		Alternative 1	**Alternative 2**	**Alternative 3**
Black Sea Bass	**Change in overall TAL**	-2.7	-37.8	17.6
	Council-adjusted Commercial Quota	-2.8	-38.1	17.6
	Council-adjusted Recreational Harvest Limit	-2.7	-37.7	17.5
*Note that Council-adjusted quotas are provisional and may be adjusted in the NMFS final rule, when more complete data on overages is available, and the final RSA values are set. The TAL proposed under status quo alternative 1 for 2011, is slightly lower to higher discards estimate in 2011 when compared to 2010.				

7.3.1 Biological Impacts

This section details the impacts of the three black sea bass alternatives on the managed resource, as well as other non-target species. Alternative 1 is the preferred alternative and is referred to as the *status quo* alertnative with a TAL of 3.60 million lb (Box 7.3). It should be noted, that this preferred TAL is slightly less than the TAL that was implemented in fishing year 2010 (*status quo*) due to higher projected discard estimates for 2011, which resulted in a TAL that is 0.10 million lb less. While this alternative is referred to as the "status quo (no action)" alternative, it is in fact the TAC that is "status quo (no action)" and the TAL, while very similar, is not exactly the status quo (no action). Alternative 2 is the most restrictive alternative, of the three considered, and is 37.8 percent lower relative to 2010. Alternative 3 is the least restrictive alternative and is 17.6 percent higher when compared to alternative 1.

Preferred alternative 1 (*status quo*) was recommended by the SSC and Black Sea Bass Monitoring Committee has a low likelihood of exceeding the threshold F. Although the TAL proposed under alternative 1 is nearly identical to the TAL that was implemented in 2010, the biological impacts of this TAL on the managed resource is not similar across years. Stock demographics change and the relative biological impacts of TALs also change. This TAL is consistent with the best scientific information available at the time of specifications that indicates fishing at a TAL at or below the level recommended under alternative 1 would be necessary to ensure the long-term sustainability of the stock. Under this alternative, the 2011 adjusted commercial quota and recreational harvest limit are only slightly lower than those limits in 2010, due to revised discard estimates. Therefore, preferred alternative 1 is expected to result in neutral biological impacts on non-target species, when compared to 2010.

Non-preferred alternative 2 proposes a 2010 proposed TAL based on a 37.8 percent reduction in the TAL relative to 2010. This alternative results in a TAL that is lower than the TAL that would be associated with the SSC's ABC recommendation (alternative 1). Therefore, the best scientific information available suggests this alternative may be more restrictive than necessary to ensure sustainability of the stock and the impacts under this alternative would be more positive than under preferred alternative 1. Under this alternative, the 2011 adjusted commercial quota is approximately 38.1 percent lower when compared to 2010. Several possibilities associated with decreased fishing effort exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for lesser habitat impacts. Similarly, with increased species abundance/availability, catch-per-unit-effort could increase resulting in a smaller number of tows landing a larger volume of fish and thus, reducing effort due to the smaller quota. Conversely, a smaller quota may mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. While it is not known with certainty how the proposed measures will affect fishing effort, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The 2011 recreational limit under alternative 2 is 37.7 percent lower than the recreational harvest limit when compared to 2010. The adjusted recreational limits under this alternative allow for less recreational landings in 2011 compared to 2010. Overall, non-preferred alternative 2 is expected to result in positive biological impacts, relative to the *status quo* measures for black sea bass (alternative 1).

Non-preferred alternative 3 proposes a TAL based on the most recent estimate of F for this stock (2009-F=0.29). This alternative results in a TAL that is higher than the TAL that would be associated with the SSC's ABC recommendation (alternative 1). For this reason, there is potential for negative impacts on the stock. Under this alternative, the 2011 adjusted commercial quota is approximately 17.6 percent higher when compared to 2010. A larger quota could result in more, or longer fishing trips resulting in an increase in the incidental catch rates of other species. As such, a larger black sea bass Council-adjusted commercial quota could result in negative impacts on other fisheries, relative to the *status quo* (alternative 2). Conversely, a larger quota may mean that states establish higher possession limits, which result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. While it is not known with certainty how the proposed measures will affect fishing effort and catches of other species, it is likely that the proposed measures will result in neutral to negative impacts on the incidental catch rates of other species relative to 2010 as the increase in quota associated with alternative 3 is only slightly higher. The 2011 recreational limit under alternative 3 is 17.5 percent higher than the recreational harvest limit when compared to 2010. The adjusted recreational limits under this alternative allow for higher recreational landings in 2011 compared to 2010. Overall, non-preferred alternative 3 is expected to result in negative biological impacts, when compared to those measures in 2010.

7.3.2 Habitat Impacts

The principal commercial gears used to harvest black sea bass are otter trawls and pots and traps. The nature of impacts by these gears on the ocean bottom habitat is described in Amendment 13 to the FMP (MAFMC 2002) and, more recently, in Stevenson et al. (2004). Based on the fishing effects evaluation in Amendment 13, the Council determined that bottom trawls and scallop dredges can adversely impact EFH in a manner that is more than minimal and not temporary in nature, but not in high-energy, sandy habitats in the Mid-Atlantic region where summer flounder, scup, and black sea bass are caught. Table 13 describes the range of potential habitat impacts that could occur under each black sea bass quota alternative with more detailed discussion below.

The preferred alternative 1 is the *status quo* alternative and measures are similar to 2010; the TAL is slightly lower due to revised discard estimates (Box 7.3). Alternative 2 is the most restrictive alternative of the three considered, and the Council adjusted commercial quota is 37.8 percent lower when compared to 2010. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 17.6 percent higher when compared to 2010. The proposed commercial quota under alternative 1 is only slightly lower than the commercial quota in 2010 due to a revised discard estimate; therefore, it is not expected that changes in fishing effort will occur as a consequence of this alternative. It is difficult to predict precisely whether the commercial quota decreases under alternative 2 will result in decreased fishing effort on EFH. Several possibilities associated with a decrease in the quota exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for reduced habitat impacts. A smaller quota may also mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. In these instances, the proposed quota results in the same or reduced gear impacts to bottom habitats. While it is not known with certainty how the proposed measures under alternative 2 will affect fishing effort, it is not expected that changes in fishing effort will occur as a consequence of this alternative. The increase in quota under of 17.6 percent under alternative 3 could potentially result in more, or longer fishing trips, with a corresponding increase in habitat impacts. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quota results in the same or reduced gear impacts to bottom habitats. In addition, in Federal waters the fishery is conducted primarily in high energy mobile sand and bottom habitat, where gear impacts are minimal and/or temporary in nature. Furthermore, the areas that would be subjected to increased disturbance from fishing are already fished by mobile, bottom-tending gear used in this and other fisheries.

Therefore, given the range of potential changes in bottom trawling that are likely to occur under these alternatives, the expected effects on habitat and EFH range from the same (alternative 1 *status quo)*, the same to positive *(*alternative 2), to neutral to potentially slight negative (under alternative 3), when compared to existing impacts.

7.3.3 Impacts on Endangered and Other Protected Species

The principal commercial gears used to harvest black sea bass are otter trawls and pots and traps. As discussed in section 6.3, the 2010 LOF indicates that the Mid-Atlantic bottom trawl and the Atlantic mixed species trap/pot fishery are listed as Category II fisheries. There are no documented marine mammal species or stocks with incidental injury and mortality resulting from these fisheries where black sea bass was the target species.

The preferred alternative 1 is the *status quo* alternative and measures are similar to 2010; the TAL is slightly lower due to revised discard estimates (Box 7.3). Alternative 2 is the most restrictive alternative of the three considered, and the Council-adjusted commercial quota is 37.8 percent lower when compared to 2010. Alternative 3 is the least restrictive alternative, and its associated commercial quota is 17.6 percent higher when compared to 2010. The proposed commercial quota under alternative 1 is only slightly lower than the commercial quota in 2010 due to revised discard estimates; therefore, it is not expected that changes in fishing effort will occur as a consequence of this alternative. It is difficult to predict precisely whether the commercial quota decrease under alternative 2 will result in decreased fishing effort and thus, decreased encounters or interactions with endangered and protected resources. Several possibilities associated with decreased fishing effort exist. A smaller quota could result in fewer fishing trips, or shorter fishing trips, with a corresponding potential for lesser impacts on protected resources. Similarly, with increased species abundance/availability, catch-per-unit-effort could increase, resulting in a smaller number of tows landing a larger volume of fish and thus, reducing effort due to the smaller quota. Conversely, a smaller quota may mean that states establish lower possession limits, which could result in an equal number of fishing trips landing a smaller volume of fish. In these instances, the proposed quota results in the same or reduced impacts to endangered and protected resources. While it is not known with certainty how the proposed measures under alternative 2 will affect fishing effort, it is not expected that changes in fishing effort will occur as a consequence of this alternative.

The increase in quota under alternative 3 could potentially result in more, or longer fishing trips, with a corresponding increase in impacts to protected resources. Conversely, a larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quota results in the same or reduced impacts to endangered and protected resources. In addition, the availability of endangered and protected resources to black sea bass fishing gears is also affected by the stock status (i.e., increasing or decreasing stock size) and distribution of these protected species.

Given the range of potential impacts on endangered and protected resources, depending upon whether fishing effort increases or decreases relative to changes in the commercial quota, these three alternatives are expected to have effects on endangered and protected resources that range from the same (alternative 1 *status quo),* the same to positive *(*alternative 2), to neutral to potentially slight negative (under alternative 3), when compared to existing impacts. In addition, it should be noted that all fishing gears are required to meet gear restrictions as required under the ALWTRP, HPTRP, MMPA, and the ESA. As such, each of these alternatives is not expected to affect endangered and threatened species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2010.

7.3.4 Socioeconomic Impacts

The proposed 2011 TAL of 3.60 million lb (Council-adjusted commercial quota and recreational harvest limit of 1.71 and 1.78 million lb, respectively) under preferred alternative 1 (*status quo*) is nearly identical to 2010 (3.70 million lb). The slight decrease in the 2011 TAL under this alternative when compared to 2010 is due to updated discard estimates. Alternative 1 would allow for about the same commercial and recreational fishing opportunities in 2011 when compared to 2010 (less than 3 percent decrease in commercial quaota and recreational harvest limit). Under non-preferred alternative 2 (most restrictive) and alternative 3 (least restrictive) a TAL of 2.30 and 4.35 million lb, respectively, is considered.

The Council-adjusted commercial quota and recreational harvest limit under alternative 1 are near identical to 2010. This alternative would allow for slightly lower commercial and recreational fishing opportunities in 2011 when compared to 2010. This alternative would provide larger commercial and recreational fishing opportunities when compared to alternative 2 in 2011 and smaller commercial and recreational fishing opportunities when compared to alternative 3 in 2011.

The negative economic impacts under alternative 1 are expected to be smaller than those under the most restrictive alternative (non-preferred alternative 2), when compared to 2010.

The recreational harvest limit under alternative 1 would provide larger recreational fishing opportunities when compared to alternative 2 in 2011 and smaller recreational fishing opportunities when compared to alternative 3. If recreational landings are the same in 2010 as in 2009 (2.44 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2011. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 1 will slightly decrease recreational satisfaction for the black sea bass recreational fishery, relative to 2010. However, it is likely that even though anglers may face more restrictive recreational limits in 2011, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their black sea bass effort in 2011 are likely to transfer this effort to alternative species (i.e., scup, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed through adjustments to the management measures. Currently, the market demand for this sector is relatively stable (see section 8.11.3.1.2). Alternative 1 is expected to increase recreational satisfaction when compared to the non-preferred most restrictive alternative 2.

Non-preferred alternative 2 contains the most restrictive measures for black sea bass. The black sea bass TAL under this alternative is 2.30 million lb for 2011 (Council-adjusted commercial quota and recreational harvest limit of 1.09 and 1.14 million lb, respectively). This TAL is 36.1 percent lower than the TAL under the *status quo* alternative. The commercial quota under this alternative represents a 36.3 percent decrease in quota relative to the Council-adjusted commercial quota under the *status quo* alternative. As a result of lower Council-adjusted commercial quota for black sea bass, negative economic impacts on the black sea bass fishery are likely to occur, relative to alternative 1 (*status quo*). However, it is possible that given the potential decrease in black sea bass landings, price for this species may increase if all other factors are held constant. If this occurs, an increase in the price for black sea bass may mitigate some of the revenue reductions associated with lower quantities of black sea bass quota availability under alternative 2.

The recreational harvest limit under alternative 2 represents a 36.3 percent decrease in harvest limit relative to the Council-adjusted recreational harvest limit under the *status quo* alternative for 2011 (alternative 1). If recreational landings are the same in 2010 as in 2009 (2.44 million lb), more restrictive measures (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be required to prevent anglers from exceeding the recreational harvest limit in 2011. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 2 will likely decrease recreational satisfaction for the black sea bass recreational fishery, relative to the *status quo* alternative. In addition, this alternative could also impact the demand of party/charter trips when compared to the *status quo* alternative. The discussion regarding the impacts of fishing regulations on the demand for recreational fishing trips presented above also applies here. The decrease in recreational satisfaction under this alternative is expected to be greater than that under the preferred alternative 1, when compared to 2010.

Given that the commercial quotas and recreational harvest levels are substantially lower under alternative 2 than under alternative 1 when compared to 2010, it is expected that the overall negative social and economic impacts under this alternative would be higher than those derived when comparing the preferred alternative 1 to 2010. Overall, it is expected that negative social and economic impacts may occur because of the decrease in commercial landings in 2011, relative to the *status quo* alternative. However, positive social and economic impacts will be realized in the long-term, if the stock size continues to grow. As discussed under section 7.3.1, this TAL is more restrictive than necessary to achieve positive managed resources impacts in 2011 compared to *status quo* alternative 1.

The black sea bass TAL under alternative 3 (least restrictive) is 4.35 million lb for 2010 (Council-adjusted commercial quota and recreational harvest limit of 2.07 and 2.15 million lb, respectively). This alternative includes a large increase in the Council-adjusted black sea bass commercial quota of 17.6 percent in 2011 as compared to 2010. Positive economic impacts on the black sea bass fishery are likely to occur, when compared to the *status quo* alternative.

This alternative would result in an increase in black sea bass recreational harvest limit of 17.5 percent in 2011 as compared to 2010. If recreational landings are the same in 2010 as in 2009 (2.44 million lb), the Council-adjusted recreational harvest limit is not expected to constrain recreational landings in 2011. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 3 will likely increase recreational satisfaction for the black sea bass recreational fishery, relative to 2010. This alternative is not expected to impact the demand of party/charter trips, when compared to 2010.

Overall, non-preferred alternative 3 for black sea bass measures (also least restrictive) will likely result in positive social and economic impacts on the black sea bass fisheries compared to 2010. As indicated in section 7.3.1, there is potential for negative impacts on the managed resource under alternative 3 and long-term negative social and economic impacts could occur if stock condition declines.

7.4 Research Set-Aside Measures

Section 5.4 fully described the RSA alternatives under consideration for 2011. In addition, Section 4.4 details specific methods of analysis for this section. For reference, the research set aside alternatives are:

- Non-preferred Alternative 1 – No research set-aside/No action
- Preferred Alternative 2 - Specify Research Set-Asides/Status Quo

The Council recommended a maximum summer flounder, scup, and black sea bass RSA quota of 3 percent of the implemented TAL for each species. Three research projects that have been preliminarily selected for funding could be awarded up to 884,400 lb (401,157 million kg) of summer flounder, 600,000 lb (272,155 million kg) of scup, and 108,000 lb (48,988 million kg) of black sea bass. For analysis of the impacts of the alternatives in this specifications document, the RSA amounts deducted from each initial TAL are 3 percent of the TAL.

Vessels harvesting RSA quota in support of approved research projects would be issued exempted fishing permits (EFP) authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations, unless otherwise exempted through a separate EFP. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example. However, this slight alteration in fishing behavior is expected to have negligible impacts beyond that of the commercial fishery operating within the full suite of fishery regulations.

Following is a description of the three preliminarily selected projects and associated exemptions that would likely be required for to conduct the research.

Project #1: The proposed project is a pot survey of fifteen hard-bottom sites in Southern New England that are not sampled by current state and federal finfish trawl surveys. Unvented fish pots will be fished on each site from June through October. The length frequency distribution of the catch will be compared statistically to each of the other collection sites, and to finfish trawl data collected by the National Marine Fisheries Service (NMFS) for the purpose of improving scup and black sea bass stock assessments.

Scup and black sea bass will be collected from each site utilizing standard fish pots made with coated wire mesh. Pots will be unvented and therefore have the capability to retain all size classes of scup. The sampling protocol will require that the commercial vessels take 30 pots to each sampling site once during each four-week sampling cycle. Pots will be left to fish for one to two days at each site. All scup and black sea bass will be measured utilizing the standard NMFS sea sampling protocols. At the conclusion of each sampling cycle, pots will be removed from the water. This same sampling format will be followed every four weeks from June 15 through October 15 for five complete cycles.

The survey area is separated into eastern, mid-western, and far-western sites as follows:

Eastern Sampling Sites
(1) West Chop 41 29 30 N, 70 35 W; (2) Cape Pogue 41 25 N, 70 26 W; (3) East Chop 41 23 N, 70 27 W;
(4) Horseshoe Shoals 41 30 N, 70 22 W; (5) Nortons Rock 41 26 30 N, 70 41 20 W

Mid-Western Sampling Sites
(1) Western End of Buzzards Bay (Old Cock Rock) 41 28 N, 71 01 W; (2) Browns Ledge 41 22 N, 71 04 W; (3) West or South of Nomans Island 41 26 N, 71 01 W; (4) South of Sakonnet Point, RI / Elisha Ledge 41 26 N, 71 01 W; (5) South of Newport, RI (Elbow Ledge) 41 26 N, 71 16 W

Far-Western Sampling Sites
(1) Narrow River Ledge, Mouth of Narragansett Bay 41 27 N, 71 24 W; (2) Point Judith Lighthouse 41 20 N, 71 29 W; (3) Southeast Lighthouse, Block Island 41 09 N, 71 33 W; (4) Bluff Head Ledge off Block Island 41 10 N, 71 40 W; (5) Charlestown Breachway 41 20 N, 71 40 W

Research vessels for project #1 would require an EFP for exemption from minimum scup and black sea bass pot vent size requirements to ensure that scup length frequency data is representative and not biased. Exemption from scup and black sea bass minimum fish sizes and possession limits would also be needed for data collection purposes only. All undersized fish would be discarded as soon as practicable to minimize mortality, and fish in excess of possession limits would either be discarded as soon as practicable or landed as RSA quota.

Project #2: Because the research activities of Project #2, for which the NEPA and Endangered Species Act analysis occurred through a separate EA completed April 20, 2010, and a Section 7 Consultation completed April 13, 2010, additional environmental review under this EA is not necessary.

For informational purposes, project #2 would conduct a spring and fall monitoring (trawl) survey in shallow waters between Martha's Vineyard, MA and Cape Hatteras, NC. The project investigators plan to provide stock assessment data for Mid-Atlantic RSA species, including summer flounder, scup, black sea bass, *Loligo* squid, butterfish, and Atlantic bluefish, and assessment-quality data for weakfish, Atlantic croaker, spot, several skate and ray species, smooth dogfish, horseshoe crab, and several unmanaged but important forage species.

Project #3: The proposed project is a mark-recapture study of black sea bass at three sites off New Jersey during the spawning season (May through August) using commercial pot and recreational hook-and-line fishing. The study proposes to achieve the following objectives: Clarify the size, age, and sex selectivity of commercial pot and recreational hook-and-line gears; monitor changes in size distribution and sex ratio over the course of a spawning season; estimate the sex ratio and rate of sex reversal by size and age; compare 3 existing methods of *in vivo* sex determination and test a new method (ultrasound); and understand fine-scale movement patterns of males and females during the spawning season.

The study will be conducted on the following three artificial reef sites off southern New Jersey: Ocean City, Wildwood, and Cape May reefs. The three reefs are fished by commercial pot fishermen and recreational anglers including party boats, charters, and private vessels. The sites are at moderate depth (17 - 27 m). Sampling of black sea bass for tagging and recapture will be conducted during 4 periods between May and September. All sampling efforts will use both standard pot and hook-and-line fishing gear to account for differences in selectivity between gears. An initial intensive 13-day tagging effort will be conducted beginning in May. Two pot retrievals and 2 days of hook-and-line fishing will be conducted at each site during the initial tagging effort. Two 7-day tagging and recapture efforts will be conducted during weeks 7 and 12 using pots (4-day initial soak time with 1 retrieval at each site) and hook-and-line gear (1 day at each of the 3 sites). A final 7-day recapture effort will be conducted during week 17. This effort will be similar to the other 7-day sampling periods, but will involve recaptures only.

During all field sampling efforts, all black sea bass captured will be measured, weighed, sexed, and examined for tags and fin clips. In addition, 4 scales will be removed from the area behind the pectoral fin for aging, approximately 1 ml of blood will be collected for subsequent analysis, and gonadal biopsy will be attempted to identify females. During the initial 13-day tagging effort and the two seven-day tagging and recapture efforts, all untagged fish will be tagged. An individually-numbered t-bar type anchor tag will be inserted below the dorsal fin using a tagging gun. During all three seven-day sampling efforts, recaptured black sea bass with tags from earlier tagging events will be measured, weighed, and sexed, and then retained for histological sex determination and assessment of reproductive condition and aging using otoliths. An array of five hydrophones (WHS_3050, Lotek Wireless Inc.) will be placed on the Ocean City reef on the first sampling date. The clustered hydrophones will monitor an area of about 0.5-0.7 km2 for the duration of the logger battery life (~ 2.5 months). Thirty individual black sea bass (15 males and 15 females) captured at this site will be surgically implanted with acoustic tags using standard procedures to reduce mortality of tagged fish and prevent tag shedding. Transmitters will be MM-11 series acoustic transmitters (67 kHz, 154 dB re 1 μPa @ 1 m, Lotek Wireless, Inc.) broadcasting at 7 sec intervals, with a battery life expectancy of 80 days. Two measures will be taken to reduce mortality associated with decompression injuries. All fish showing swelling of the abdomen and/or eversion of the stomach will have their swim bladders vented with a large diameter hypodermic needle. In addition, traps will be held for 15 minutes at 10 m depth during retrieval. A random sample of 60 tagged individuals (5 smaller and 5 larger than 30 cm from each sex and each site) will be held in seawater tanks at the Multi-species Aquaculture Demonstration Facility in Cape May, NJ for the duration of the field study to assess tagging-associated mortality.

Assuming a conservative hook-and-line catch rate of 2 fish per angler day and 20 volunteer anglers, investigators anticipate tagging approximately 40 fish per day resulting in 80 fish per site over the initial two day per site party boat sampling effort. The number of fish tagged during pot sampling will likely be limited by tagging time rather than fish availability, since catches of more than 100 individuals are routine. Investigators anticipate a per-fish handling time of 5 min or 12 fish per-hour. Assuming 7 hours per day spent on fish processing, this equates to 84 tagged fish per day of pot sampling. With 2 retrievals per site, investigators anticipate tagging approximately 168 fish per site over the initial 13-day pot sampling effort. The total estimated tags during the initial sampling effort is therefore 744. By similar logic, investigators expect to tag approximately 372 fish during each of the two 9-day tagging and recapture efforts. The grand total then is 1,488 fish tagged, with 60 of these retained for assessment of tagging mortality.

In vivo sex determination will be accomplished using three established methods, and one new experimental approach: 1) Secondary sex characteristics, including presence of a bucal hump and bright spawning coloration, and spermiation during abdominal massage will be used to identify mature males. 2) Ovarian biopsy using a polypropelene canula will be used to identify mature females. 3) Blood concentrations of 11-ketotestosterone and 17-oestradiol will be used to identify transitional females undergoing sex reversal. 4) An experimental approach using ultrasound will be tested. This approach has been used successfully in at least 17 species of fish to date. Ultrasound has the benefit of being fast and completely non-invasive. If the technique is validated, it would be useful not only for *in vivo* sex determination, but also for market sampling where dissection is undesirable. Gonads will be processed for routine histology, and age will be determined using scales impressed in laminated plastic. Reliability of aging will be confirmed using thin transverse sections through the nucleus of otoliths.

7.4.1 Biological Impacts

Under alternative 1, there would not be a summer flounder, scup, or black sea bass set-aside for 2011, and the RSA quota amounts would not be deducted from their respective commercial quotas and recreational harvest limits. Because all summer flounder, scup, and black sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, the biological impacts would not change if this alternative were adopted. Under this alternative, there would also be no indirect positive effects from broadening the scientific base upon which management decisions are made.

Under alternative 2, RSA quota would be awarded to selected projects and deducted from their respective commercial quotas and recreational harvest limits. Because the RSA quota is a part of the TAL no additional mortality would occur if this alternative were adopted. In addition, this alternative is expected to indirectly benefit the resource as selected projects will likely provide information that will improve resource science and management.

Vessels harvesting research quota in support of approved research projects would be issued exempted fishing permits (EFP) authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations, unless otherwise exempted through a separate EFP. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example. However, this slight alteration in fishing behavior is expected to have negligible impacts beyond that of the vessels operating within the full suite of fishery regulations.

Research activities for project #1, as described in section 7.4, would only occur in concert with commercial fishing trips and/or compensation fishing trips. Research activities would not result in additional fishing effort. To conduct this research, research vessels would require an EFP for exemption from minimum scup and black sea bass pot vent size requirements to ensure that scup length frequency data is representative and not biased. Exemption from scup and black sea bass minimum fish sizes and possession limits would also be needed for data collection purposes only. These changes to standard commercial fishing practice are not expected to result in a substantive increase in mortality of fish under the minimum size.

Research activities for project #3, as described in section 7.4, would only occur in concert with commercial fishing trips and/or recreational fishing trips. Research activities would not result in additional fishing effort. To conduct this research, research vessels would require exemption from commercial and recreational black sea bass quota closures to ensure the ability to sample during such closures, and exemption from black sea bass minimum fish size and possession limits for the purpose of collecting scientific data. The additional mortality that would result from tagging activities and laboratory work would be minimal (approximately 200 black sea bass). In addition, any fish that are retained for research purposes would count against the RSA quota, further minimizing the mortality of fish that would result from this research.

7.4.2 Habitat Impacts

Because all summer flounder, scup, and black sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort for these species. In addition, it is not expected that effort will be redistributed by gear type or change the manner in which these fisheries are prosecuted under either alternative.

Although under Alternative 2 exemptions would be issued for compensation fishing that would exempt vessels from possession limits and quota closures, there would be no additional impacts on habitat because RSA quota is part of, and not in addition to, the overall summer flounder, scup, and black sea bass quotas. Because research activities for projects #1 and #3, as described in Section 7.4, would only occur in concert with commercial and recreational fishing trips and/or compensation fishing trips, it is unlikely that additional habitat impacts would result from funding these 2 projects. Project #3 does propose to anchor 5 hydrophones on the Ocean City reef for approximately 2.5 months from the start of the study. However, it is not expected that the anchored hydrophones would cause a substantive impact on this artificial reef. The exemptions for research purposes, as described below, would not alter the impact on EFH that occurs during standard commercial and recreational fishing activities. Therefore, each of these alternatives will likely minimize the adverse effects of fishing on EFH to the extent practicable, pursuant to Section 305 (a)(7) of the MSA.

Research vessels for project #1, as described in section 7.4, would require an EFP for exemption from minimum scup and black sea bass pot vent size requirements to ensure that scup length frequency data is representative and not biased. Exemption from scup and black sea bass minimum fish sizes and possession limits would also be needed for data collection purposes only. Such exemptions would not have any additional impact on EFH.

Research vessels for project #3, as described in section 7.4, would require exemption from commercial and recreational black sea bass quota closures to ensure the ability to sample during such closures, and exemption from black sea bass minimum fish size and possession limits for the purpose of collecting scientific data. Such exemptions would not have any additional impact on EFH.

7.4.3 Impacts on Endangered and Other Protected Species

Because all summer flounder, scup, and black sea bass landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort for these species.

Vessels harvesting research quota in support of approved research projects would be issued EFPs authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations, unless otherwise exempted through a separate EFP. Because quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing vessels altering their normal fishing behavior; extending tow duration or fishing longer than they otherwise would for example.

Because research activities for projects #1 and #3, as described in section 7.4, would only occur in concert with commercial and recreational fishing trips and/or compensation fishing trips, it is unlikely that research activities would have any impact on protected species. Project #3 does propose to anchor 5 hydrophones on the Ocean City reef for approximately 2.5 months from the start of the study. However, it is not expected that the anchored hydrophones would have an effect on protected species. The exemptions for research purposes, as described below, would not alter the potential effects beyond that of standard commercial and recreational fishing activities.

Research vessels for project #1, as described in section 7.4, would require an EFP for exemption from minimum scup and black sea bass pot vent size requirements to ensure that scup length frequency data is representative and not biased. Exemption from scup and black sea bass minimum fish sizes and possession limits would also be needed for data collection purposes only. Such exemptions would not have any effect on protected species.

Research vessels for project #3, as described in section 7.4, would require exemption from commercial and recreational black sea bass quota closures to ensure the ability to sample during such closures, and exemption from black sea bass minimum fish size and possession limits for the purpose of collecting scientific data. Such exemptions would not have any effect on protected species.

7.4.4 Socioeconomic Impacts

Under non-preferred alternative 1, there will be no RSA deducted from the overall TAL for summer flounder, scup, and black sea bass. Therefore, the initial commercial quotas and recreational harvest limits for these species do not need to be adjusted downward as would be done under a situation when an RSA is established. In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-RSA participants in the fishery. That is, each participant in a fishery that utilizes a resource that is limited by the annual quota relinquishes a share of the amount of quota retained in the RSA quota. Since no RSA is implemented under this alternative, there are no direct economic or social costs as described above. Under non-preferred alternative 1, the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will cease. In addition, the Nation will not receive the benefit derived from data or other information about these fisheries for management or stock assessment purposes.

Under preferred alternative 2, RSAs for each species would be specified. Under the RSA program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. However, as described above, the economic and social costs of the program are shared among the non-RSA participants in the fishery. The evaluation of the socioeconomic impacts of the commercial quotas in sections 7.1, 7.2, and 7.3 was based on adjusted commercial quotas that account for the RSA proposed under preferred alternative 2.

The MAFMC recommended research set-aside quotas of up to 3 percent of the overall TAL for summer flounder, scup, and black sea bass for 2010. More specifically, for summer flounder alternative 1, a RSA of 884,400 lb (530,400 lb for commercial and 353,760 lb for recreational) was assumed, a RSA of 663,900 lb (398,340 lb for commercial and 265,560 lb for recreational) was assumed for alternative 2, and a RSA of 1,051,500 lb (630,900 lb for commercial and 420,600 lb for recreational) was assumed for alternative 3. For scup alternatives 1, 2, and 3, a

RSA of 600,000 lb (468,000 lb for commercial and 132,000 lb for recreational), 423,300 lb (330,174 lb for commercial and 93,126 lb for recreational), 868,800 lb (677,664 lb for commercial and 191,136 lb for recreational) was assumed, respectively. Finally, for black sea bass alternatives 1, 2, and 3, a RSA of 108,000 lb (52,920 lb for commercial and 55,080 lb for recreational), 69,000 lb (33,180 lb for commercial and 35,190 lb for recreational), 130,500 lb (63,945 lb for commercial and 66,555 lb for recreational) was assumed, respectively.

NMFS dealer data from Maine to Virginia and NMFS general canvass data for North Carolina were used to derive the ex-vessel prices for summer flounder from Maine through North Carolina and for scup and black sea bass from Maine through Cape Hatteras, North Carolina. Assuming these 2009 ex-vessel prices (summer flounder -- $1.88/lb; scup -- $0.76/lb; and black sea bass -- $2.70/lb), the 2011 RSA for the commercial component of the fishery could be worth as much as $997,152, $748,879, and $1,186,092 under the evaluated summer flounder alternatives 1, 2, and 3, respectively. For scup, the commercial component of the RSA could be worth as much as $355,680, $250,932, and $515,025 under alternatives 1, 2, and 3, respectively. Lastly, for black sea bass, the commercial component of the RSA could be worth as much as $142,884, $91,287, and $172,652 under alternatives 1, 2, and 3, respectively.

As such, on a per vessel basis, the commercial RSAs could result in a potential decrease in summer flounder revenues of $1,482, $1,113, and $1,762 under evaluated alternatives 1, 2, and 3, respectively. The potential decrease in revenue for scup is $894, $630, and $1,294 per vessel under alternatives 1, 2, and 3, respectively. Lastly, the potential decrease in revenue for black sea bass is $311, $198, and $375 per vessel under alternatives 1, 2, and 3, respectively. The overall reduction in ex-vessel gross revenue associated with the three species combined under alternative 1 in 2010 as the result of the RSA is approximately $1.5 million when compared to commercial quotas without RSA in place. If the potential reduction in revenue associated with the RSA for the three species combined under alternative 1 is distributed among the 810 vessels that landed summer flounder, scup, and black sea bass in 2009, the average decrease in revenue is approximately $1,850/vessel. The overall reduction associated with the three species combined under alternative 2 in 2011 as the result of the research set asides is $1.1 million ($1,347/vessel) compared to the commercial quotas without RSA in place. Lastly, the overall reduction associated with the three species combined under alternative 3 in 2011 as the result of the research set asides is $1.9 million ($2,318/vessel) compared to the commercial quotas without RSA in place. The values estimated above assume an equal decrease in revenue among all active vessels in 2009, i.e., 673, 398, and 460 commercial vessels that landed summer flounder, scup, and black sea bass, respectively. The adjusted commercial quotas analyzed in sections 7.1, 7.2, and 7.3 account for the RSAs (as described in sections 4.4 and 5.0). If RSAs are not used, the landings would be included in the overall TAL for each fishery. As such, the estimated economic impacts would be smaller than those estimated under each alternative discussed in sections 7.1 through 7.3.

Changes in the recreational harvest limit will be small; the limit changes from 11.79 to 11.44 million lb under summer flounder alternative 1, from 8.85 to 8.59 million lb under summer flounder alternative 2, and from 14.02 to 13.60 million lb under summer flounder alternative 3. For the analyzed scup alternatives, the changes in the recreational harvest limits are from 4.40 to

4.27 million lb under alternative 1, from 3.10 to 3.01 million lb under alternative 2, and from 6.37 to 6.18 million lb under alternative 3. Lastly, for the analyzed black sea bass alternatives, the changes in the recreational harvest limits are from 1.84 to 1.78 million lb under alternative 1, from 1.17 to 1.14 million lb under alternative 2, and from 2.22 to 2.15 million lb under alternative 3. Each of these changes in recreational harvest limits approximately represents a 3 percent decrease. It is unlikely that the possession, size or seasonal limits will change as the result of this RSA, and there will be no negative impacts.

Given the substantial decrease in the quota in 2011 relative to 2010 for scup under alternative 2 (most restrictive), the cost of any premature closure of the fishery (pounds scup allocated for set-aside) would be shared among the non-RSA participants in the fishery. In addition, it is possible that the vessels that will be used by researchers will not be vessels that have traditionally fished for scup. As such, permit holders that land this species during a period where the quota has been reached and the fishery closed could be disadvantaged. However, the extent of RSA activity under these three projects (e.g., fishing trips, no. of tows, landings) are negligible when compared to the overall activity of the directed fisheries for the managed resources; therefore, overall impacts of research trips and compensation trips are expected to be negligible. The impacts of the RSAs for other species are addressed in their respective species specifications packages, e.g., bluefish in the 2011 bluefish specifications package.

7.5 Impacts of the Combined Preferred Alternatives

In order to conduct a more thorough socioeconomic analysis, overall impacts on the managed resources were examined in combination. The analyses conducted examined the measures recommended by the Council for each of the three species combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in some or all three of these fisheries. The 2011 preferred alternatives, analyzed in combination, are presented below. For example, for 2011, quota alternative 1 (preferred alternative) would include the three preferred alternatives for summer flounder, scup, and black sea bass combined; quota alternative 2 (most restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined; and quota alternative 3 (least restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined. Detailed analysis of the combined impact of the preferred as well as the non-preferred management measures for the three species combined is presented under section 8.11.3 of this document.

The analysis of the harvest levels under the combined preferred alternative indicate that the economic impacts ranged from expected revenue increases for 721 vessels to revenue losses for of less than 5 percent for 89 vessels relative to 2010. Furthermore, there were no vessels projected to incur revenue losses of 5 percent or higher. The number of vessels projected to be impacted with revenue reductions of 5 percent or more under combined alternative 2 was 181 and 253 vessels were projected to have revenue losses of less than 5 percent. Furthermore, 123 vessels were projected to incur in revenue gains under alternative 2 compared to 2010. Under combined alternative 3, there were no vessels projected to incur revenue reductions of 5 percent or more (see section 8.11.3).

Assuming 2009 ex-vessel prices and the effect of potential changes in fishing opportunities in 2011 versus 2010, the 2011 quotas in combined alternative 1 (after RSA have been applied) would increase summer flounder and scup revenues by approximately $8.10 and $3.38 million, respectively. For black sea bass, a decrease in revenue of $0.14 million is expected in 2011 relative to the quota implemented 2010. On a per vessel level, the average increase in revenue associated with the increase in summer flounder and scup quotas under alternative 1 is $12,036 and $8,492, respectively. In addition, for black sea bass, the average decrease in revenue associated with this alternative is $304/vessels. The overall change in ex-vessel gross revenue associated with these species combined in 2011 relative to quotas implemented in 2010 is approximately $11.34 million or $14,000/vessel; this is lower than under the overall combined increase under Council non-preferred alternative 3 ($29,086/vessel). The combined overall reduction in revenues under the Council non-preferred alternative 2 is $2,160/vessel (see section 8.11.3). The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2011 versus 2010 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

The summer flounder and scup recreational harvest limits under combined preferred alternative 1 are approximately 33 and 42 percent higher, respectively, than the limits implemented in 2010, and the black sea bass limit is 3 percent lower than the limit implemented in 2010. However, given recent recreational landings for black sea bass, it is likely that the proposed 2011 recreational harvest limits for black sea bass may not constrain landings that year (section 8.11.3). It is likely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) will be required to prevent anglers from exceeding the recreational harvest limit in 2011. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is likely that proposed management measures may restrict the recreational fishery for 2011, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable (see recreational fishing trends under section 8.11.3). It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. However, it is likely that even though anglers may face more restrictive recreational limits in 2011, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their effort in 2011 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

7.6 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder, scup, and black sea bass fisheries.

7.6.1 Consideration of the VECs

In section 6.0 (Description of the Affected Environment), the VECs that exist within the summer flounder, scup, and black sea bass fishery environment are identified. Therefore, the significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resources (summer flounder, scup, and black sea bass)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. Endangered and protected species
5. Human communities

7.6.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of summer flounder, scup, and black sea bass. The core geographic scope for each of the VECs is focused on the Western Atlantic Ocean (section 6.0). The core geographic scope for the managed resources is from Maine through North Carolina, as this represents the typical biological range for these stocks. For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by summer flounder, scup, black sea bass and other non-target species in the Western Atlantic Ocean. The core geographic scope for endangered and protected resources can be considered the overall range of these VECs in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of the managed resources, which were found to occur in coastal states from Maine through North Carolina (section 6.5).

7.6.3 Temporal Boundaries

The temporal scope of past and present actions for the managed resources, non-target species, habitat, and human communities is primarily focused on actions that have occurred after FMP implementation (1988 for summer flounder; 1996 for scup and black sea bass). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.4) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about two years (2013) into the future. This period was chosen because summer flounder is to be rebuilt by January 1, 2013 (two additional iterations of yearly specifications). In addition, the temporal scope does not extend beyond this time period because the dynamic nature of resource management for these three species and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

7.6.4 Actions Other Than Those Proposed in this Amendment

The impacts of each of the alternatives considered in this specifications document are given in section 7.1 through 7.5. Box 7.6.4 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this specifications document. These impacts are described in chronological order and qualitatively, as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions.

Past and Present Actions

The historical management practices of the Council (described in section 4.2) have resulted in positive impacts on the health of the summer flounder, scup, and black sea bass stocks. Numerous actions have been taken to manage the commercial and recreational fisheries for these three species through amendment and framework adjustment actions. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery 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 statutory basis for federal fisheries management is the MSA. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can often have negative short-term socioeconomic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the summer flounder, scup, and black sea bass stocks.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to all of the identified VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and their habitats on a population level is unknown, but likely neutral to low negative, since a large portion of these species have a limited or minor exposure to these local non-fishing perturbations.

In addition to guidelines mandated by the MSA, NMFS reviews these types of effects through the review processes required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

In terms of RFF Actions, guidance related to National Standard 1 of the MSA will require Council development of an Omnibus Amendment to address annual catch limits (ACLs) and accountability measures (AMs) for summer flounder, scup, and black sea bass (as well as other Council managed species) to ensure that ACLs are not exceeded and ensure the FMP is compliant with the MSA.

For many of the proposed non-fishing activities to be permitted under other federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential impacts on the VECs. The MSA (50 CFR 600.930) imposes an obligation on other federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state wherein the” activity is taking place. This act provides another avenue for review of actions by other federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS' jurisdiction.

7.6.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section discusses the effects of these actions on each of the VECs.

Box 7.6.4. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).						
Action	**Description**	**Impacts on Managed Resource**	**Impacts on Non-target Species**	**Impacts on Habitat and EFH**	**Impacts on Protected Species**	**Impacts on Human Communities**
P, Pr Original FMP and subsequent Amendments and Frameworks to the FMP	Established commercial and recreational management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr Summer Flounder, Scup, and Black Sea Bass Specifications	Establish annual quotas, RHLs, other fishery regulations (commercial and recreational)	**Indirect Positive** Regulatory tool to specify annual quotas, RHLs, and other regulations; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr Developed and Applied Standardized Bycatch Reporting Methodology (2007)	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**Neutral** May improve data quality for monitoring total removals of managed resource	**Neutral** May improve data quality for monitoring removals of non-target species	**Neutral** Will not affect distribution of effort	**Neutral** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
Pr, RFF Omnibus Amendment to address ACLs/AMs (~2010)	Establish ACLs and AMs for all three plan species	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis
P, Pr, RFF Agricultural runoff	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF Port maintenance	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects

Box 7.6.4. Continued. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).						
Action	**Description**	**Impacts on Managed Resource**	**Impacts on Non-target Species**	**Impacts on Habitat and EFH**	**Impacts on Protected Species**	**Impacts on Human Communities**
[P, Pr, RFF] Offshore disposal of dredged materials	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
[P, Pr, RFF] Beach nourishment	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism
[P, Pr, RFF] Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
[P, Pr, RFF] Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
[P, Pr] National Offshore Aquaculture Act of 2007	Bill that would grant DOC authority to issue permits for offshore aquaculture in federal waters	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Direct Negative** Localized decreases in habitat quality possible	**Potentially Indirect Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Mixed** Costs/benefits remain unanalyzed

Box 7.6.4. Continued. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).						
Action	**Description**	**Impacts on Managed Resource**	**Impacts on Non-target Species**	**Impacts on Habitat and EFH**	**Impacts on Protected Species**	**Impacts on Human Communities**
[RFF] Offshore Wind Energy Facilities (within 2 years)	Construction of wind turbines to harness electrical power (Several proposed from ME through NC, including NY/NJ, DE, and VA)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
[Pr, RFF] Liquefied Natural Gas (LNG) terminals (1 built and others within 2 years)	Transport natural gas via tanker to terminals offshore and onshore (1 terminal built in MA; 1 under construction; proposed in RI, NY, NJ and DE)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
[RFF] Convening Gear Take Reduction Teams (within next 2 years)	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
[RFF] Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (w/in next 2 years)	May recommend strategies to prevent the bycatch of sea turtles in commercial fisheries operations	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

7.6.5.1 Managed Resources

Those past, present, and reasonably foreseeable future actions, whose effects may impact the managed resources and the direction of those potential impacts, are summarized in Box 7.6.5.1. The indirectly negative actions described in Box 7.6.5.1 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resources is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions, described in Box 7.6.5.1, will result in additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which summer flounder, scup, and black sea bass productivity depends. In addition, a future Amendment will implement mechanisms for specification of ACLs)/AMs and has the potential to changes the current management program and lead to improvements in resource sustainability over the long-term. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to summer flounder, scup, and black sea bass have had a positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification of management measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives (i.e., annual F targets are achieved and overfishing is prevented) and the extent to which mitigating measures were effective. Section 6.1.1 describes the history of overages for these fisheries and how overages are currently mitigated. The proposed action in this document would positively reinforce the past and anticipated positive cumulative effects on the summer flounder, scup, and black sea bass stock, by achieving the objectives specified in the FMP. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

<table>
<tr><th colspan="4">Box 7.6.5.1. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.</th></tr>
<tr><th>Action (see Box 7.6.4 for more detailed description)</th><th colspan="2">Past to the Present</th><th>Reasonably Foreseeable Future</th></tr>
<tr><td>Original FMP and subsequent Amendments and Frameworks to the FMP</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Summer Flounder, Scup and Black Sea Bass Specifications</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Developed and Implement Standardized Bycatch Reporting Methodology</td><td colspan="2">Neutral</td><td></td></tr>
<tr><td>Amendment to address ACLs/AMs for the managed resources</td><td></td><td colspan="2">Potentially Indirect Positive</td></tr>
<tr><td>Agricultural runoff</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Port maintenance</td><td colspan="3">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Offshore disposal of dredged materials</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Offshore mining</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Sand placement</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Marine transportation</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Installation of pipelines, utility lines and cables</td><td colspan="3">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>National Offshore Aquaculture Act of 2007</td><td colspan="2">Potentially Indirect Negative</td><td></td></tr>
<tr><td>Offshore Wind Energy Facilities (within 2 years)</td><td></td><td></td><td>Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Liquefied Natural Gas (LNG) terminals (within 2 years)</td><td></td><td colspan="2">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Convening Gear Take Reduction Teams (within 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Summary of past, present, and future actions excluding those proposed in this specifications document</td><td colspan="3">Overall, actions have had, or will have, positive impacts on the managed resources
* See section 7.6.5.1 for explanation.</td></tr>
</table>

7.6.5.2 Non-Target Species or Bycatch

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species and the direction of those potential impacts, are summarized in Box 7.6.5.2. The effects of indirectly negative actions described in Box 7.6.5.2 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on non-target species is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of non-target resources and the oceanic ecosystem is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally-managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on non-target species. Implementation and application of a standardized bycatch reporting methodology would have a particular impact on non-target species by improving the methods which can be used to assess the magnitude and extent of a potential bycatch problem. Better assessment of potential bycatch issues allows more effective and specific management measures to be developed to address a bycatch problem. It is anticipated that future management actions, described in Box 7.6.5.2, will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend. The impacts of these future actions could be broad in scope, and it should be noted the managed resource and non-target species are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful have had a positive cumulative effect on non-target species.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document have impacts that range from neutral to slight positive or negative impacts, and would not change the past and anticipated positive cumulative effects on non-target species and thus, would not have any significant effect on these species individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

<table>
<tr><th colspan="4">Box 7.6.5.2. Summary of the effects of past, present, and reasonably foreseeable future actions on the non-target species.</th></tr>
<tr><th>Action (see Box 7.6.4 for more detailed description)</th><th colspan="2">Past to the Present</th><th>Reasonably Foreseeable Future</th></tr>
<tr><td>Original FMP and subsequent Amendments and Frameworks to the FMP</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Summer Flounder, Scup and Black Sea Bass Specifications</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Developed and Implement Standardized Bycatch Reporting Methodology</td><td colspan="2">Neutral</td><td></td></tr>
<tr><td>Amendment to address ACLs/AMs for the managed resources</td><td></td><td colspan="2">Potentially Indirect Positive</td></tr>
<tr><td>Agricultural runoff</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Port maintenance</td><td colspan="3">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Offshore disposal of dredged materials</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Offshore mining</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Sand placement</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Marine transportation</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Installation of pipelines, utility lines and cables</td><td colspan="3">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>National Offshore Aquaculture Act of 2007</td><td colspan="2">Potentially Indirect Negative</td><td></td></tr>
<tr><td>Offshore Wind Energy Facilities (within 2 years)</td><td></td><td></td><td>Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Liquefied Natural Gas (LNG) terminals (within 2 years)</td><td></td><td colspan="2">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Convening Gear Take Reduction Teams (within 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Summary of past, present, and future actions excluding those proposed in this specifications document</td><td colspan="3">Overall, actions have had, or will have, positive impacts on the non-target species
* See section 7.6.5.2 for explanation.</td></tr>
</table>

7.6.5.3 Habitat (Including EFH)

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are summarized in Box 7.6.5.3. The direct and indirect negative actions described in Box 7.6.5.3 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to a lack of exposure to habitat at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on habitat and EFH. The actions have constrained fishing effort at a large scale and locally, and have implemented gear requirements, which may reduce habitat impacts. As required under these FMP actions, EFH and HAPCs were designated for the managed resources. It is anticipated that the future management actions, described in Box 7.6.5.3, will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally-managed species and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All of the VECs are interrelated; therefore, the linkages among habitat quality and EFH, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. There are some actions, which are beyond the scope of NMFS and Council management such as coastal population growth and climate changes, which may indirectly impact habitat and ecosystem productivity. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on habitat and thus, would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

<table>
<tr><th colspan="4">Box 7.6.5.3. Summary of the effects of past, present, and reasonably foreseeable future actions on the habitat.</th></tr>
<tr><th>Action (see Box 7.6.4 for more detailed description)</th><th colspan="2">Past to the Present</th><th>Reasonably Foreseeable Future</th></tr>
<tr><td>Original FMP and subsequent Amendments and Frameworks to the FMP</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Summer Flounder, Scup and Black Sea Bass Specifications</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Developed and Implement Standardized Bycatch Reporting Methodology</td><td colspan="2">Neutral</td><td></td></tr>
<tr><td>Amendment to address ACLs/AMs for the managed resources</td><td></td><td colspan="2">Potentially Indirect Positive</td></tr>
<tr><td>Agricultural runoff</td><td colspan="3">Direct Negative</td></tr>
<tr><td>Port maintenance</td><td colspan="3">Uncertain – Likely Direct Negative</td></tr>
<tr><td>Offshore disposal of dredged materials</td><td colspan="3">Direct Negative</td></tr>
<tr><td>Beach nourishment – Offshore mining</td><td colspan="3">Direct Negative</td></tr>
<tr><td>Beach nourishment – Sand placement</td><td colspan="3">Direct Negative</td></tr>
<tr><td>Marine transportation</td><td colspan="3">Direct Negative</td></tr>
<tr><td>Installation of pipelines, utility lines and cables</td><td colspan="3">Uncertain – Likely Direct Negative</td></tr>
<tr><td>National Offshore Aquaculture Act of 2007</td><td colspan="2">Direct Negative</td><td></td></tr>
<tr><td>Offshore Wind Energy Facilities (within 2 years)</td><td></td><td></td><td>Potentially Direct Negative</td></tr>
<tr><td>Liquefied Natural Gas (LNG) terminals (within 2 years)</td><td></td><td colspan="2">Potentially Direct Negative</td></tr>
<tr><td>Convening Gear Take Reduction Teams (within 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Summary of past, present, and future actions excluding those proposed in this specifications document</td><td colspan="3">Overall, actions have had, or will have, neutral to positive impacts on habitat, including EFH
* See section 7.6.5.3 for explanation.</td></tr>
</table>

7.6.5.4 Protected and Endangered Species

Those past, present, and reasonably foreseeable future actions, whose effects may impact the protected resources and the direction of those potential impacts, are summarized in Box 7.6.5.4. The indirectly negative actions described in Box 7.6.5.4 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on protected resources, relative to the range of many of the protected resources, is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on protected resources either directly or indirectly is unquantifiable. As described above (section 7.6.4), NMFS has several means, including ESA, under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' protected resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on protected resources through the reduction of fishing effort (potential interactions) and implementation of gear requirements. It is anticipated that the future management actions, specifically those recommended by the ATGTRT and the development of strategies for sea turtle conservation described in Box 7.6.5.4, will result in additional indirect positive effects on the protected resources. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected resources have had a positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met, summer flounder, scup, and black sea bass stocks, are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on protective resources and thus, would not have any significant effect on protected resources individually or in conjunction with other anthropogenic activities (see Box 7.6.6).

<table>
<tr><th colspan="4">Box 7.6.5.4. Summary of the effects of past, present, and reasonably foreseeable future actions on the protected resources.</th></tr>
<tr><th>Action (see Box 7.6.4 for more detailed description)</th><th colspan="2">Past to the Present</th><th>Reasonably Foreseeable Future</th></tr>
<tr><td>Original FMP and subsequent Amendments and Frameworks to the FMP</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Summer Flounder, Scup and Black Sea Bass Specifications</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Developed and Implement Standardized Bycatch Reporting Methodology</td><td colspan="2">Neutral</td><td></td></tr>
<tr><td>Amendment to address ACLs/AMs for the managed resources</td><td></td><td colspan="2">Potentially Indirect Positive</td></tr>
<tr><td>Agricultural runoff</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Port maintenance</td><td colspan="3">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Offshore disposal of dredged materials</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Offshore mining</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Sand placement</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Marine transportation</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Installation of pipelines, utility lines and cables</td><td colspan="3">Potentially Direct Negative</td></tr>
<tr><td>National Offshore Aquaculture Act of 2007</td><td colspan="2">Potentially Indirect Negative</td><td></td></tr>
<tr><td>Offshore Wind Energy Facilities (within 2 years)</td><td></td><td></td><td>Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Liquefied Natural Gas (LNG) terminals (within 2 years)</td><td></td><td colspan="2">Uncertain – Likely Indirect Negative</td></tr>
<tr><td>Convening Gear Take Reduction Teams (within 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 2 years)</td><td></td><td></td><td>Indirect Positive</td></tr>
<tr><td>Summary of past, present, and future actions excluding those proposed in this specifications document</td><td colspan="3">Overall, actions have had, or will have, positive impacts on protected resources
* See section 7.6.5.4 for explanation.</td></tr>
</table>

7.6.5.5 Human Communities

Those past, present, and reasonably foreseeable future actions, whose effects may impact human communities and the direction of those potential impacts, are summarized in Box 7.6.5.5. The indirectly negative actions described in Box 7.6.5.5 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. It may, however, displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is unquantifiable. As described above (section 7.6.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the FMP and annual specification process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices, while at the same time potentially reducing the availability of the resource to all participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions, described in Box 7.6.5.5, will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur through management actions that may implement gear requirements or area closures and thus, reduce revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had an overall positive cumulative effect.

Annual TALs for each of the managed resources have been specified to ensure the rebuilding schedule for summer flounder is met; summer flounder, scup, and black sea bass stocks are managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives (i.e., annual F targets) and the extent to which mitigating measures were effective. Section 6.1.1 described the history of overages for these fisheries and how overages are currently mitigated for these managed resources. Overages may alter the timing of fishery revenues (revenues realized a year earlier), and there may be impacts on some fishermen caused by unexpected reductions in their opportunities to earn revenues in the commercial fisheries in the year during which the overages are deducted. Recreational fisheries may have decreased harvest opportunities due to more restrictive recreational management measures that must be implemented (i.e., minimum fish size, possession limits, fishing seasons).

Despite the potential for slight negative short-term effects on human communities, the expectation is that there would be a positive long-term effect on human communities due to the long-term sustainability of summer flounder, scup, and black sea bass. Overall, the proposed actions in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (see Box 7.6.6).

<table>
<tr><th colspan="4">Box 7.6.5.5. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.</th></tr>
<tr><th>Action (see Box 7.6.4 for more detailed description)</th><th colspan="2">Past to the Present</th><th>Reasonably Foreseeable Future</th></tr>
<tr><td>Original FMP and subsequent Amendments and Frameworks to the FMP</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Summer Flounder, Scup and Black Sea Bass Specifications</td><td colspan="2">Indirect Positive</td><td></td></tr>
<tr><td>Developed and Implement Standardized Bycatch Reporting Methodology</td><td colspan="2">Potentially Indirect Negative</td><td></td></tr>
<tr><td>Amendment to address ACL/AMs for the managed resources</td><td></td><td colspan="2">Potentially Indirect Positive</td></tr>
<tr><td>Agricultural runoff</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Port maintenance</td><td colspan="3">Uncertain – Likely Mixed</td></tr>
<tr><td>Offshore disposal of dredged materials</td><td colspan="3">Indirect Negative</td></tr>
<tr><td>Beach nourishment – Offshore mining</td><td colspan="3">Mixed</td></tr>
<tr><td>Beach nourishment – Sand placement</td><td colspan="3">Positive</td></tr>
<tr><td>Marine transportation</td><td colspan="3">Mixed</td></tr>
<tr><td>Installation of pipelines, utility lines and cables</td><td colspan="3">Uncertain – Likely Mixed</td></tr>
<tr><td>National Offshore Aquaculture Act of 2007</td><td colspan="2">Uncertain – Likely Mixed</td><td></td></tr>
<tr><td>Offshore Wind Energy Facilities (within 3 years)</td><td></td><td></td><td>Uncertain – Likely Mixed</td></tr>
<tr><td>Liquefied Natural Gas (LNG) terminals (within 3 years)</td><td></td><td colspan="2">Uncertain – Likely Mixed</td></tr>
<tr><td>Convening Gear Take Reduction Teams (within 3 years)</td><td></td><td></td><td>Indirect Negative</td></tr>
<tr><td>Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)</td><td></td><td></td><td>Indirect Negative</td></tr>
<tr><td>Summary of past, present, and future actions excluding those proposed in this specifications document</td><td colspan="3">Overall, actions have had, or will have, positive impacts on human communities
* See section 7.6.5.5 for explanation.</td></tr>
</table>

7.6.6 Preferred Action on all the VECS

The Council has identified its preferred action alternatives in section 5.0. The cumulative effects of the range of actions considered in this document can be considered to make a determination if significant cumulative effects are anticipated from the preferred action.

Box 7.6.6. Magnitude and significance of the cumulative effects; the additive and synergistic effects of the proposed action, as well as past, present, and future actions

VEC	Status in 2009	Net Impact of P, Pr, and RFF Actions	Impact of the Preferred Action	Significant Cumulative Effects
Managed Resource	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.1)	Negative to positive (Sections 7.1-7.5)	**None**
Non-target Species	Complex and variable (Section 6.1)	Positive (Sections 7.6.4 and 7.6.5.2)	Negative to positive (Sections 7.1-7.5)	**None**
Habitat	Complex and variable (Section 6.2)	Neutral to positive (Sections 7.6.4 and 7.6.5.3)	Neutral to negative (Sections 7.1-7.5)	**None**
Protected Resources	Complex and variable (Section 6.3)	Positive (Sections 7.6.4 and 7.6.5.4)	Neutral to negative (Sections 7.1-7.5)	**None**
Human Communities	Complex and variable (Section 6.4)	Positive (Sections 7.6.4 and 7.6.5.5)	Short-term-Slight-negative to positive; Long-term-Positive (Sections 7.1-7.5)	**None**

The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 through 7.5. The magnitude and significance of the cumulative effects, which include the additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account throughout this section 7.6. The action proposed in this annual specifications document builds off action taken in the original FMP and subsequent amendments and framework documents. When this action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in these past FMP documents and this document, there are no significant cumulative effects associated with the action proposed in this document.

8.0 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The most recent FMP amendments address how the management actions implemented comply with the National Standards. First and foremost, the Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield for summer flounder, scup, and black sea bass and the U.S. fishing industry. To achieve OY, both scientific and management uncertainty need to be addressed when establishing catch limits that are less than the OFL; therefore, the Council has developed recommendations that do not exceed the ABC recommendations of the SSC which have been developed to explicity address scientific uncertainty. In addition, the Council has considered releveant sources of management uncertainty and other social, economic, and ecological factors, which resulted in a TAC receommendation for scup which was less than the ABC to address management uncertainty. The Council uses the best scientific information available (National Standard 2) and manages all three species throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4), they do not have economic allocation as their sole purpose (National Standard 5), the measures account for variations in these fisheries (National Standard 6), they avoid unnecessary duplication (National Standard 7), they take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). Finally, actions taken are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly acted to reduce fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will insure that cumulative impacts of these actions will remain positive overall for the ports and communities that depend on these fisheries, the Nation as a whole, and certainly for the resources.

8.2 NEPA (FONSI)

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 CFR §1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

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

None of the proposed specifications or RSA program presented in this document is expected to jeopardize the sustainability of any target species affected by the action. The preferred quota specifications for each species are consistent with the FMP objectives and the recommendations of the Council's scientific advisors, the SSC. The proposed summer flounder TAL is expected to enable rebuilding and the proposed scup and black sea bass TALs not expected to result in overfishing. The proposed actions will ensure the long-term sustainability of harvests from the summer flounder, scup, and black sea bass stocks.

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

None of the proposed specifications or RSA program presented in this document is expected to jeopardize the sustainability of any non-target species. The proposed measures are not expected to alter fishing methods or activities.

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

The proposed action as described in section 7.0 of the EA is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. In general, bottom-tending mobile gear, primarily otter trawls, has the potential to adversely affect EFH for the species detailed in section 6.2 of the EA. The quota-setting measures proposed in this action could, under certain conditions, increase to a small degree the amount of time that bottom trawling vessels spend fishing for summer flounder or scup, but the adverse impacts of this increased level of fishing on benthic habitats would not be significant. The proposed quota for black sea bass is only slightly lower than in 2010, so fishing effort for black sea bass is not expected to increase. Neither these, nor any of the other measures included in the proposed action will have any adverse habitat impact.

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

None of the measures alters the manner in which the industry conducts fishing activities for the target species. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on these fisheries, including the communities in which they operate, will not impact adversely public health or safety. NMFS will consider comments received concerning safety and public health issues.

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

None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort (see section 7.0). Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

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

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action merely revises the proposed annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort.

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

The proposed action is not expected to have a substantial impact on the natural or physical environment. Commercial capture of summer flounder occurs predominately in the Mid-Atlantic mixed trawl fishery; in the Mid-Atlantic mixed trawl, pot/trap, and hook and line fisheries for scup; and in the pot/trap, Mid-Atlantic mixed trawl, and hook and line fisheries for black sea bass. Bottom otter trawls have a potential to impact bottom habitat. In addition, a number of non-target species are taken incidentally in the prosecution of these fisheries. However, none of the proposed specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental effects.

8) Are the effects on the quality of the human environment likely to be highly controversial?

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. The proposed action is based on measures contained in the FMP, which have been in place for many years. In addition, the scientific information upon which the annual quotas are based has been peer reviewed and is the most recent information available. Thus, the measures contained in this action are not expected to be highly controversial.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

This action merely revises the annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

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

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the annual commercial quota and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

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

As discussed in section 7.6, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate positive impacts overall. The proposed actions, together with past, present, and future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

The impacts of the proposed measures on the human environment are described in section 7.0 of the EA. The proposed action merely revises the annual commercial quota and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. These summer flounder, scup, and black sea bass fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in, or eligible for listing in, the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

This action proposes commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. There is no evidence or indication that these fisheries have ever resulted in the introduction or spread of nonindigenous species. None of the proposed specifications or RSA program is expected to alter fishing methods or activities. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

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

This action merely revises the proposed annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessment or other biological information about these species becomes available in the future, then the annual specifications will be adjusted according to the overfishing definitions contained in the FMP. None of these specifications or RSA program results in significant effects, nor do they represent a decision in principle about a future consideration.

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

This action proposes annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. None of the proposed specifications or RSA program is expected to alter fishing methods or activities such that they threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment. In fact, the proposed measures have been found to be consistent with other applicable laws (see sections 8.3-8.11 below).

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

The impacts of the proposed alternatives on the biological, physical, and human environment are described in section 7.0. The cumulative effects of the proposed action on target and non-target species are detailed in section 7.6 of the EA. None of the proposed specifications or RSA program is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The synergistic interaction of improvements in the efficiency of the fishery through implementation of annual quotas based on the overfishing definitions contained in the FMP and consistent with scientific advice is expected to generate positive impacts overall.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA prepared for the 2011 summer flounder, scup, and black sea bass fisheries specifications, it is hereby determined that the proposed actions in this specification package will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

______________________________________ 12/15/10

Regional Administrator for NERO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on endangered species and protected resources. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on marine mammals. None of the specifications proposed in this document are expected to alter fishing methods or activities. Therefore, this action is not expected to affect marine mammals or critical habitat in any manner not considered in previous consultations on the fisheries.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this specifications document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through North Carolina).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed specifications document was developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the SSC meeting held on July 28-29, 2010, the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 30, 2010, held in Baltimore, MD, and during the MAFMC meeting held on August 17-19, 2010 in Philadelphia, Pennsylvania. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the Federal Register (FR).

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes annual commercial quotas and recreational harvest limits in 2011 for the summer flounder, scup, and black sea bass fisheries. This document includes: A description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP. As such, this document enables the implementing agency (NMFS) to make a decision on implementation of annual specifications (i.e., management measures) and this document serves as a supporting document for the proposed rule.

The action contained within this specifications document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the SSC meeting held on July 28-29, 2010, the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Meetings held on July 30, 2010, held in Baltimore, MD, and during the MAFMC meeting held on August 17-19, 2010 in Philadelphia, Pennsylvania. In addition, the public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the FR.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is “Natural Resource Plans.” This section (section 8.0) describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available and the most up to date information is used to develop the EA which evaluates the impacts of those alternatives (see sections 4.4 and 7.0 of this document for additional details). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the summer flounder, scup, and black sea bass fisheries.

The review process for this specifications document involves MAFMC, NEFSC, NERO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and social anthropology. The MAFMC review process involves public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by NERO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

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 businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Environmental Justice/EO 12898

This EO provides that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” EO 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to “identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices.”

The proposed actions are not expected to affect participation in the summer flounder, scup, and black sea bass fisheries. Since the proposed action represents no changes relative to the current levels of participation in these fisheries, no negative economic or social effects in the context of EO 12898 are anticipated as a result. Therefore, the proposed action is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

8.11 Regulatory Flexibility Analysis

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 "will not, if promulgated, have a significant economic impact on a substantial number of small entities." A determination of substantial depends on the context of the proposed action, the problem to be addressed, and the structure of the regulated industry. Standards for determining significance are discussed below. Positive economic impacts are anticipated as a result of this action due to quota increase in summer flounder (33.5 percent) and scup (41.7 percent) when compared to 2010. Furthermore, the black sea bass Council-adjusted quota for 2011 is near identical (2.8 percent smaller) to the quota implemented in 2010. An IRFA was prepared to further evaluate the economic impacts of the three alternatives on small business entities. This analysis is undertaken in support of a more thorough analysis for the 2011 commercial specifications for fishing for summer flounder, scup, and black sea bass.

8.11.1 Initial Regulatory Flexibility Analysis

An Initial Regulatory Flexibility Analysis (IRFA) which evaluates the economic impacts of the alternatives on small business entities is provided in this section. This analysis supports a more thorough analysis (RFA) which will be completed for the commercial specifications for the FMP species in 2011. The economic analyses presented for the various alternatives are principally for the commercial fishery. General statements on potential changes in the recreational fishery due to changes in recreational harvest limits for summer flounder, scup, and black sea bass are made in this document; however, the effects of specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) will be analyzed and submitted along with the Council and Boards recommendations in a recreational specifications document after the December Council meeting.

8.11.1.1 Description of the Reasons Why Action by the Agency is Being Considered

A complete description of the purpose and need and objectives of this proposed rule is found under section 4.0. A statement of the problem for resolution is presented under section 4.0.

8.11.1.2 The Objectives and Legal Basis of the Proposed Rule

A complete description of the objectives of this proposed rule is found under section 4.0. This action is taken under the authority of the MSA and regulations at 50 CFR part 648.

8.11.1.3 Estimate of the Number of Small Entities

The potential number of small entities (i.e., those which fit the definition of a small business) that may be affected by the proposed rule is presented below.

8.11.1.4 Reporting Requirements

There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.11.1.5 Conflict with Other Federal Rules

This action does not duplicate, overlap, or conflict with other Federal rules.

8.11.1.6 Analysis of Economic Impacts

A description of the summer flounder, scup, and black sea bass fisheries is presented in section 6.0 of this document and section 3.0 of Amendment 13 to the FMP (MAFMC 2002). A description of ports and communities that are dependent on summer flounder, scup, and black sea bass is found in section 3.4.2 of Amendment 13 to the FMP (MAFMC 2002). Recent landing patterns among ports are presented in section 6.4.3 and an analysis of permit data is found in section 6.4.4. A full description of the alternatives analyzed in this section and the TAC/TAL derivation process is presented in sections 4.4 and 5.0. A brief description of each alternative is presented below for reference purposes.

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 $4.0 and $6.5 million, respectively. The proposed measures regarding the 2011 summer flounder, scup, and black sea bass quotas could affect any vessel holding an active Federal permit for summer flounder, scup, or black sea bass as well as vessels that fish for any one of these species in state waters. Data from the Northeast permit application database shows that in 2009 there were 2,206 vessels that were permitted to take part in the summer flounder, scup, and/or black sea bass fisheries (both commercial and party/charter sectors). These permitted vessels may be further categorized depending upon which permits or combinations of permits that were held (see section 6.4.4). Table 5 reports the number of vessels by possible combination of permits. For example, the proposed quota 2011 could potentially affect all permit holders. However, active participants are more likely to be affected in the near term. All permitted vessels readily fall within the definition of small business.

Since all permit holders may not be actively fishing and land any of the three species, the more immediate impact of the rule may be felt by the 810 commercial vessels that are active participants (Table 16). The impacts of specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) on “active” party/charter vessels will be analyzed and submitted along with the Council and Boards recommendations in a recreational specifications document after the December Council meeting. An active participant was defined as being any vessel that reported having landed one or more pounds of any one of the three species in the Northeast dealer data during calendar year 2009. The dealer data covers activity by unique vessels that hold a Federal permit (of any kind) and provides summary data for vessels that fish exclusively in state waters. This means an active vessel may be a vessel that holds a valid Federal summer flounder, scup, or black sea bass permit; a vessel that holds a valid Federal permit but no summer flounder, scup or black bass permit; a vessel that holds a Federal permit other than summer flounder, scup, or black sea bass and fishes for those species exclusively in state waters; or may be vessel that holds no Federal permit of any kind. Of the four possibilities the number of vessels in the latter two categories cannot be estimated because the dealer data provides only summary information for state waters vessels, and because the vessels in the last category do not have to report landings. Of the active vessels reported in Table 16, 260 commercial vessels did not hold a valid Federal permit for summer flounder, scup, or black sea bass during calendar year 2009.

In this IRFA, the primary unit of observation when performing a threshold analysis is vessels that participated in any one or more of the three fisheries (summer flounder, scup, and black sea bass) during calendar year 2009, irrespective of their current permit status. Not all landings and revenues reported through the Federal dealer data can be attributed to a specific vessel. Vessels without Federal permits are not subject to any Federal reporting requirements with which to corroborate the dealer reports. Similarly, dealers that buy exclusively from state waters only vessels and have no Federal permits, are also not subject to Federal reporting requirements. Thus, it is possible that some vessel activity cannot be tracked with the landings and revenue data that are available. Therefore, these vessels cannot be included in the threshold analysis, unless each state was to report individual vessel activity through some additional reporting system - which currently does not exist. This problem has two consequences for performing threshold analyses. First, the stated number of entities subject to the regulation is a lower bound estimate, since vessels that operate strictly within state waters and sell exclusively to non-federally permitted dealers cannot be counted. Second, the portion of activity by these uncounted vessels may cause the estimated economic impacts to be over- or underestimated.

The effects of actions were analyzed by employing quantitative approaches to the extent possible. Where quantitative data were not available, qualitative analyses were conducted. In the current analysis, effects on profitability associated with the proposed management measures should be evaluated by looking at the impact the proposed measures on individual vessel costs and revenues. However, in the absence of cost data for individual vessels engaged in these fisheries, changes in gross revenues are used a proxy for profitability.

In order to conduct a more thorough socioeconomic analysis, overall impacts of the three species combined were examined in combination. For example, for 2011, quota alternative 1 (preferred alternative) would include the three preferred alternatives for summer flounder, scup, and black sea bass combined; quota alternative 2 (most restrictive alternative) would include the three most restrictive alternatives for summer flounder, scup, and black sea bass combined; and quota alternative 3 (least restrictive alternative) would include the three least restrictive alternatives for summer flounder, scup, and black sea bass combined. Overall impacts (i.e., combined impacts of summer flounder, scup, and black sea bass) were examined because many of the vessels active in these fisheries participate in more than one or even all three of these fisheries.

Procedurally, the economic effects of the quota alternatives were estimated using four steps. First, the Northeast dealer data were queried to identify all vessels that landed at least one or more pounds of summer flounder, scup, or black sea bass in calendar year 2009. The fact that individual owners' business organization may differ from one another is reflected in the different combinations of species landed by these vessels. Thus, for purposes of the threshold analysis, active vessels were grouped into seven classes or tiers (Table 16) based on combinations of summer flounder, scup and black sea bass landings. In this manner, the original universe of vessels is treated as seven distinct "sub-universes" with a separate threshold analysis conducted for each. Note that the states of Connecticut and Delaware report canvas (summary) data to NMFS, so landings and revenues by individual vessels cannot be included. Thus, vessels that land exclusively in those states cannot be analyzed. Vessels that land in these, plus other states, are analyzed - but landings and revenues represent only that portion of business conducted in states other than Connecticut and Delaware. It is presumed that the impacts on vessels that cannot be identified will be similar to the participating vessels that are analyzed herein.

The second step was to estimate total revenues from all species landed by each vessel during calendar year 2009. This estimate provides the base from which subsequent quota changes and their associated effects on vessel revenues were compared. Since 2009 is the last full year of data available (partial year data from 2010 could miss seasonal fisheries), it was chosen as the base year for the analysis. As such, 2009 data were used as a proxy for 2010.

The third step was to deduct or add, as appropriate, the expected change in vessel revenues depending upon which of the three quota alternatives were evaluated. This was accomplished by estimating proportional reductions or increases in the three quota alternatives for 2011 for all three species versus the base quota year 2010. RSA estimates were employed to adjust the 2011 quotas (section 4.4). For the purpose of estimating the 2011 quotas and revenue changes, the following assumptions were made: a) the industry will fully harvest, and not exceed the 2010 quotas; and b) the entire summer flounder, scup, and black sea bass quota allocations will be taken in 2011. Detailed description of the 2011 quota derivation process is presented in sections 4.4 and 5.0.

The fourth step was to compare the estimated 2011 revenues from all species to the 2010 base revenues for every vessel in each of the seven classes to assess potential changes. For each quota alternative a summary table was constructed that report the results of the threshold analysis by class when necessary. These results were further summarized by home state as defined by permit application data, when appropriate.

The threshold analysis just described is intended to identify impacted vessels and to characterize the potential economic impact on directly affected entities. In addition to evaluating if the proposed regulations reduce profit for a significant number of small entities, the RFA also requires that disproportionality be evaluated. Disproportionality is judged to occur when a proportionate effect on profits, costs, or net revenue is expected to occur for a substantial number of small entities when compared to large entities; that is, if a regulation places a substantial number of small entities at a significant competitive disadvantage. According to the SBA definition of small business presented above, all permitted vessels in these fisheries readily fall within the definition of small business. Therefore, there are no disproportionality issues.

To further characterize the potential impacts on indirectly impacted entities and the larger communities where owners of impacted vessels reside, selected county profiles are typically constructed. Each profile is based on impacts under the most restrictive possible because it would identify the maximum number possible and thus include the broadest possible range of counties in the analysis. The following criteria was employed to derive the range of counties profiled: a) the number of vessels with revenue losses exceeding 5 percent per county was either greater than 4, or b) all vessels with losses exceeding 5 percent in a given state were from the same home county. It is expected that this system will allow for a county profile that may include a wide range of potentially affected areas.

Based on these criteria, a total of 10 counties were identified to be impacted in 2010: Sussex, DE; Worcester, MD; Cape May and Ocean, NJ; Nassau and New York, NY; Washington, RI; Dare, NC; City of Norfolk and Virginia Beach City, VA. Counties not included in this analysis (e.g., Bristol, Barnstable, Dukes, Plymouth, Essex, and Suffolk, MA; Atlantic, NJ; New London and Fairfield, CT; Accomack and Poquison City Area, VA; Philadelphia, PA; Beaufort, Hyde, NC; Monmouth, NJ; and Newport, RI) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 5 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. The target counties were identified based on the county associated with the vessels homeport as listed in the owner's 2009 permit application.

Counties are typically selected as the unit of observation because a variety of secondary economic and demographic statistical data were available from several different sources. Limited data are available for place names (i.e., by town or city name) but in most instances reporting is too aggregated or is not reported due to confidentiality requirements. Reported statistics include demographic statistics, employment, and wages.

8.11.2 Description of Quota Alternatives

8.11.2.1 Quota and Non-Quota Alternatives

Alternative 1 includes the harvest levels recommended for summer flounder, scup, and black sea bass on vessels that are permitted to catch any of these three species. Harvest levels were recommended to prevent overfishing, not exceed ABC, and ensure rebuilding (for summer flounder). This alternative contains scup and black sea bass recommended TALs consistent with the advice of the Council's scientific and technical advisors, the SSC and Monitoring Committees. The summer flounder TAL under this alternative is consistent with the advice of the Council's scientific advisors, the SSC. The black sea bass quota under this alternative is the *status quo* quota. A detailed description of all of these measures for the three species was presented under section 5.0. A brief discussion and impact of these measures is presented below.

Alternative 2 includes the most restrictive harvest levels, i.e., those that would result in the greatest reductions in landings (relative to 2010) for summer flounder, scup, and black sea bass. This alternative includes non-preferred alternatives for all three species. The summer flounder and scup quotas under this alternative are the *status quo* quotas.

Alternative 3 includes the least restrictive harvest levels, i.e., those that would result in the least reductions (or greatest increases) in landings (relative to 2010 for all species. This alternative includes non-preferred alternatives for all three species. These limits resulted in the highest possible landings for 2011, although these limits would be inconsistent with the recommendations of the Council scientific and technical advisors.

8.11.3 Analyses of Impacts of Alternatives

In the analysis of the following alternatives, several assumptions were made. First, average revenue changes noted in this analysis were evaluated using 2009 dealer data and participation. In addition to this, 2009 permit files were used to describe permit holders in these fisheries. It is important to mention that revenue changes for 2011 are dependent upon previous landings and overages. As indicated in section 4.4, the Council recommended RSA adjusted TALs were not adjusted for 2010 partial-year overages and/or transfers of quota among states. NMFS will adjust quotas based on updated information on overages and/or transfers as part of the final rule that implements the 2011 specifications late in 2010 when the data are more complete.

For the analyses themselves, reductions are estimated by examining the total revenue earned by an individual vessel in 2009 (as a proxy for 2010), and comparing it to its potential revenue in 2011, given the changes in fishing opportunity (harvest levels) from 2010 to 2011. Generally, the percent of a vessel's revenue reduction varies considerably based on the permits it holds (i.e., based on the fisheries in which it was able to participate) and species it landed. Diversity in the fleet helps to balance loss in one fishery with revenue generated from other fisheries. Lastly, it is important to keep in mind that while the analyses are based on landings for federally permitted vessels only, those vessels may be permitted to, and frequently do, fish in state waters for a species of fish for which it does not hold a federal permit.

8.11.3.1 Quota Alternative 1 (Preferred)

This alternative examines the impacts on industry that would result from the preferred harvest levels for summer flounder, scup, and black sea bass. To analyze the economic effects of this alternative, the total harvest levels specified under section 5.0 were employed. Alternative 1 contains Council-adjusted commercial quotas of 17.16, 15.13, 1.71 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 11.44, 4.27, and 1.78 million lb for flounder, scup, and black sea bass, respectively. The black sea bass specifications under this alternative are associated with the *status quo* TAC; however, the TAL proposed for 2011 is slightly lower than the TAL in 2010 due to higher discard estimates.

Under this alternative, the summer flounder specifications would result in an aggregate of approximately 34 and 33 percent increase, respectively, in allowable commercial landings and recreational harvest limit relative to the 2010 allocations (Tables 17 and 18). The scup specifications would result in a 42 percent increase in both allowable commercial landings and recreational harvest limit relative to the 2010 allocations (Tables 17 and 19). The black sea bass specifications would result in a slight decrease (3 percent) in allowable commercial landings and recreational harvest limit relative to the 2010 allocations (Tables 17 and 20). The proposed black sea bass TAL for 2011 of 3.6 million lb under this alternative is nearly identical to the TAL implemented in 2010 (3.70 million lbs); however, the slight decrease in the Council-adjusted black sea bass quota and recreational harvest limit are slightly different (lower) than the adjusted quota and recreational harvest limit implemented in 2010 due to higher discards projected for 2011.

8.11.3.1.1 Commercial Impacts

The results of the threshold analysis are presented in Table 21. The analysis of the harvest levels under this alternative indicate that across all vessel classes, a total of 89 vessels were projected to incur in revenue losses of less than 5 percent and 721 vessels were projected to incur in revenue increase relative to 2010. The bulk of the vessel projected to have revenue losses of less than 5 percent in 2011 compared to 2010 landed black sea bass only. Council staff further examined the level of ex-vessel revenues for the impacted vessel to assess further impacts. For example, according to dealer data, it was estimated that 36 percent of the vessels (36 out of 89 vessels) projected to incur revenue reductions of less than 5 percent had total gross sales (all possible species combined not just summer flounder, scup, and black sea bass in 2009) of $1,000 or less and 74 percent (66 vessels) had total gross sales of $10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 22). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue decrease of less than 5 percent ranged from 3 vessels in both Delaware and Massachusetts to 19 vessels in New Jersey. The number of vessels with revenue increase by home state ranged from 1 in Delaware to 101 in Massachusetts.

By virtue of holding a valid federal permit for summer flounder, scup, or black sea bass a vessel is subject to any regulations that are promulgated under the FMP. From this perspective, these vessels are subject to any quota specification whether or not they actually choose to engage in any one of the three (summer flounder, scup, or black sea bass) fisheries. The decision to engage in any given fishery during a given time period is subject to numerous considerations from temporary suspension of fishing due to illness or vessel construction or repair to merely a reasoned decision to pursue other fisheries. Given the limited access nature of the fisheries, a vessel may wish to continue to hold a permit to preserve the opportunity to engage in the fishery when circumstance allows.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles were constructed. The profile is based on impacts under the most restrictive possible alternative. The most restrictive alternative is chosen to identify impacted counties because it would identify the maximum number possible and thus include the broadest possible range of counties in the analysis. Reported statistics including demographic statistics, employment, and wages for these counties is presented in section 8.11.4 below. In addition, a description of important ports and communities to the summer flounder, scup, and black sea bass fisheries is presented in Amendment 13 to the FMP (MAFMC 2002). Recent landings patterns among ports are examined in section 6.4.3.

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. NMFS dealer data from Maine to Virginia and NMFS general canvass data for North Carolina were used to derive the ex-vessel price for summer flounder from Maine through North Carolina, and for scup and black sea bass from Maine through Cape Hatteras, North Carolina. Assuming 2009 ex-vessel prices (summer flounder -- $1.88/lb; scup -- $0.76/lb; and black sea bass -- $2.70/lb), the 2011 quotas associated with the preferred alternative would increase summer flounder and scup revenues by approximately $8.10 and $3.38 million, respectively, relative to the quota implemented in 2010. For black sea bass, a decrease in revenue of $0.14 million is expected in 2011 relative to the quota implemented 2010.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with the preferred alternative is distributed equally among the 673 vessels that landed summer flounder in 2009, the average increase in revenue associated with the increase in summer flounder quota is approximately $12,036/vessel. Assuming the increase in scup total ex-vessel gross revenues associated with this alternative is distributed equally among the 398 vessels that landed scup in 2009, the average increase in revenue associated with the increase in scup quota is approximately $8,492/vessel. Assuming the decrease in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 460 vessels that landed black sea bass in 2010, the average decrease in revenue associated with the decrease in black sea bass quota is approximately $304/vessel.

The overall change in ex-vessel gross revenue associated with summer flounder, scup, and black sea bass combined in 2011 relative to quotas implemented in 2010 is an approximately $11.34 million increase (assuming 2009 ex-vessel prices) under the preferred alternative. If this is distributed among the 810 vessels that landed summer flounder, scup, and black sea bass in 2009, the average increase in revenue is approximately $14,000/vessel. The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2011 versus 2010 assumed static prices for summer flounder, scup, and black sea bass. Overall, the projected increase in summer flounder and scup landings in 2011 under this alternative will likely result in revenue increase for vessels participating in those fisheries. Conversely, the projected decrease in black sea bass landings in 2011 under this alternative will likely result in revenue decrease for participating vessels in that fishery. However, it is possible that given the potential increase in summer flounder and scup landings and decrease in black sea bass landings, price for these species may decrease for summer flounder and scup and increase for black sea bass holding all other factors constant. If this occurs, a decrease and/or increase in the price for these species may mitigate some of the revenue increases associated with higher quantity of quota availability for summer flounder and scup and revenue decreases associated with lower quantity of quota availability for black sea bass under this alternative.

It is important to stress that these changes as well as those described under the other alternatives represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and other potential reductions in 2010 not accounted for here (section 4.4).

8.11.3.1.2 Recreational Impacts

As indicated in the executive summary, the management measures addressed in this specifications document include commercial quotas, recreational harvest limits, and other measures to ensure that the annual fishing targets specified in the FMP for these species are attained. The economic analyses presented for the various alternatives are principally for the commercial fisheries. While general statements regarding potential changes in the recreational fisheries due to changes in recreational harvest limits for summer flounder, scup, and black sea bass are made in this document, the effects of specific recreational management measures (i.e., bag limits, size limits, and seasonal closures) will be analyzed when the Council and Board submit recommendations for 2011 recreational measures. The Council and the Board will meet in December 2010 to adopt 2011 recreational management measures, when more complete data regarding 2010 recreational landings are available. A comprehensive document for the recreational specifications for summer flounder, scup, and black sea bass will be prepared after the December Council meeting.

Landing statistics from the last several years show that recreational summer flounder landings have generally exceeded the recreational harvest limits, ranging from 5 percent in 1993 to 122 percent in 2000. In 1994-1995, summer flounder landings were below the recreational harvest limit by approximately 20 percent for both years combined. In 2002, 2004, and 2005, recreational landings were 1.71 (18 percent), 0.34 (3 percent) and 1.40 million lb (12 percent) below the limits for those years, respectively. For 2007, 2008, and 2009, recreational landings were 3.18 million lb (48 percent) above, 1.69 million (27 percent) above, and 0.86 million lb (12 percent) below the limits implemented those years, respectively (Table 18).

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 indicate that summer flounder has shown an upward trend in importance in the U.S. from Maine through North Carolina combined. The number of trips for which recreational anglers targeted summer flounder has shown an upward trend from the early 1990s to the early/mid 2000s. Summer flounder recreational trips averaged 5.1 million for the 1991-2009 period, ranging from 3.8 million in 1992 to 6.1 million in 2001. For the 2005-2009 period, summer flounder recreational fishing trips were estimated at 5.6, 5.4, 5.8, 5.4, and 4.8 million, respectively (Table 18).

Under this alternative, the summer flounder 2011 Council-adjusted recreational harvest limit (adjusted for RSA) is 11.44 million lb. Thus, the harvest limit in 2011 would represent an increase of approximately 33 percent (2.85 million lb) from the 2010 limit. If recreational landings are the same in 2010 as in 2009 (6.30 million lb), the adjusted recreational harvest limit is expected to constraint recreational landings in 2011. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) be required in 2011 when compared to 2010. Specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 1 will likely increase recreational satisfaction for the summer flounder recreational fishery, relative to 2010.

Scup recreational landings have declined over 89 percent for the period 1991 to 1998, then increased by 518 percent from 1998 to 2000 (Table 19). The number of fishing trips has also declined over 73 percent from 1991 to 1998, and then increased by 127 percent from 1998 to 2000. The decrease in the recreational fishery in the 1990s occurred both with and without any recreational harvest limits, and it is perhaps a result of the stock being over-exploited and at a low biomass level during that period. In addition, it is possible that party/charter boats may have targeted other species that were relatively more abundant than scup (e.g., striped bass), thus accounting for the decrease in the number of fishing trips in this fishery in the 1990s. Recreational landings decreased from 5.44 million lb in 2000 to 3.62 million lb in 2002 (33 percent decrease). In 2003, recreational landings increased to 8.48 million lb (134 percent), these landings were the highest for the 1991 to 2008 period. Recreational landings decreased in 2005 and 2006 to 2.5 and 3.0 million lb respectively. In 2007, 2008, and 2009 scup recreational landings increased to 3.7, 4.0, and 2.9 million lb, respectively. The number of trips for which recreational anglers targeted scup have shown a slight upward trend from the early 1990s to the early/mid 2000s. Scup recreational trips averaged 489 thousand for the 1991 to 2009 period, ranging from 199 thousand in 1997 to 972 thousand in 2003. For 2005-2009, scup recreational fishing trips were estimated at 479, 467, 740, 729, and 536 thousand, respectively (Table 19).

Under this alternative, the scup 2011 Council-adjusted recreational harvest limit (adjusted for RSA) is 4.29 million lb. The scup harvest limit in 2011 would represent an increase of approximately 42 percent from the 2010 recreational limit. If recreational landings are the same in 2010 as in 2009 (2.94 million lb), the adjusted recreational harvest limit is not expected to constrain recreational landings in 2011. As such, it is unlikely that more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) be required to prevent anglers from exceeding the recreational harvest limit in 2011. As indicated before, specific recreational management measures will be determined in December when more complete data regarding 2010 recreational landings are available. Alternative 1 is expected to increase recreational satisfaction for the scup recreational fishery relative to 2010.

Black sea bass recreational landings have shown a slight upward trend from 1991-1997. Black sea bass landings decreased considerably from 1995-1996 to 1998-1999, but then substantially increased in 2002 to 4.44 million lb. For the 2003-2009, recreational landings ranged from 1.95 to 3.45 million lb. For the 2004-2008 period, recreational landings were below the harvest limits implemented those years; combined recreational landings during this time period were 7.27 million lb (44 percent) below the combined implemented limit. In 2009, recreational landings were 2.44 million lb or 1.3 million lb (114 percent) above the recreational limit implemented that year. The number of trips for which recreational anglers targeted black sea bass averaged 363 thousand for the 1991-2009 period, ranging from 136 thousand in 1999 to 431 thousand in 2007. For 2008-2009, black sea bass recreational fishing trips were estimated at 273 and 351 thousand, respectively (Table 20).

Under this alternative, the black sea bass 2011 recreational harvest limit (adjusted for RSA) is 1.78 million lb. The black sea bass specifications under this alternative are associated with the *status quo* TAC; however, the TAL proposed for 2011 is slightly lower than the TAL in 2010 due to higher discard estimates. If recreational landings are the same in 2010 as in 2009 (2.44 million lb), the adjusted recreational harvest limit is not expected to constrain recreational landings in 2011. As such, more restrictive limits (i.e., lower possession limits, greater minimum size limits, and/or shorter seasons) may be necessary to prevent anglers from exceeding this recreational harvest limit in 2011. However, it is likely that even though anglers may face more restrictive recreational limits in 2011, they will likely be able to keep some of the fish they catch and could also engage in catch and release fishing. Anglers that choose to reduce their black sea bass effort in 2011 are likely to transfer this effort to alternative species (i.e., scup, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.), resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing. At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed through adjustments to the management measures. Currently, the market demand for this sector is relatively stable (see recreational fishing trends below). A slight decrease in recreational satisfaction is expected under alternative 1 when compared to 2010.

General Effort Trends

Recreational landings for all three fisheries have fluctuated over the past several years. The number of trips targeting a given species in any given year is quite variable (Tables 18-20). In the aggregate, total number of recreational trips (all modes combined) in the North Atlantic and Mid-Atlantic subregions combined has remained relatively stable with an upward trend for the 1990 to 2009 time period. On average, for the 1990-2009 period, approximately 25 million marine recreational fishing trips (all modes combined) were taken in the North Atlantic and Mid-Atlantic subregions combined. For that period, marine recreational trips ranged from 18 million trips in 1992 to 32 million trips in 2007 in the two regions combined.

The number of party/charter boat trips taken in the North Atlantic and Mid-Atlantic subregions combined has fluctuated throughout the 1990-2009 period showing a downward trend. On average, for the 1990-2009 period, 1.7 million party/charter marine fishing trips were taken in the North Atlantic and Mid-Atlantic sub-regions combined, ranging from 1.1 million trips in 1999 to 2.6 million trips in 1993. For the last 10 years (2000-2009), a slight upward trend in the number of party/charter marine fishing trips is evident. Party/charter trips in both regions have ranged from 1.3 in 2002 to 1.9 million in 2007. The average number of party/charter marine fishing trips is 1.6 million for the 2000-2009 period. In 2006-2009, 1.8, 1.9, 1.4, and 1.5 million party/charter boat trips, respectively, were taken in the North Atlantic and Mid-Atlantic subregions combined.

The number of anglers participating in marine recreational trips in the North Atlantic and Mid-Atlantic subregions combined has shown an upward trend for the 1990 to 2009 period. On average, for the 1990 to 2009 period, 3.5 million anglers fished in the North Atlantic and Mid-Atlantic sub-regions combined, ranging from 2.6 million anglers in 1999 to 5.1 million anglers in 2007 (the highest value in time series). In 2009, 3.5 million anglers fished in both sub-regions combined.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. While it is possible that proposed summer flounder, scup, and black sea bass management measures may restrict the recreational fishery for 2011, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season), there is no indication that any of these measures may lead to a decline in the demand for party/charter boat trips. Given the number of party/charter trips taken during the last five to ten years, the market demand for this sector is relatively stable. It is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips. It is likely that party/charter anglers will target other species when faced with potential reductions in the amount of summer flounder, scup, and black sea bass that they are allowed to catch. Anglers that choose to reduce their effort in 2011 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., summer flounder, scup, spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

8.11.3.1.3 Other Impacts

<u>Effects of Commercial Possession Limits, Minimum Mesh, Minimum Fish Size and Gear restrictions</u>

The proposed summer flounder, scup, and black sea bass alternatives would only modify the 2011 commercial quotas and recreational harvest limits. Changes to other commercial management measures were not recommended for 2011 by the Council, Board, or the Summer Flounder, Scup, and Black Sea Bass Monitoring Committees. Therefore, other commercial management measures in place will remain unchanged (*status quo*) for the 2011 fishing year (see section 5.1 thought 5.3 for additional discussion).

Effects of the RSA

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

Research set-aside Impacts for Summer Flounder, Scup, and Black Sea Bass

The social and economic impacts of this research should be minimal. The commercial set-aside could be worth as much as $997,152, $355,680, and $142,884 for summer flounder, scup, and black sea bass based on 2009 prices, respectively, under alternative 1. Assuming an equal reduction among all active vessels (i.e., 673, 398, and 460 commercial vessels that landed summer flounder, scup, and black sea bass in 2009, respectively), this may mean a reduction of $1,482, $894, and $311 per individual vessel for summer flounder, scup, and black sea bass, respectively. However, if a vessel is participating in two or more of these fisheries, the revenue reduction could be greater. It is also possible that the vessels used by researchers to conduct the research are vessels that have not traditionally fished for these species. As such, some minimal distributive effects may result as permit holders that would have landed these species could be disadvantaged. If RSAs are not used and are put back into the overall TAL for each fishery, then the estimated economic impacts would be smaller than those estimated in threshold analyses presented in this section. The maximum 3 percent RSA was used to assess potential impacts; however the actual RSA may be less than 3 percent. As such, the monetary worth of the RSA for scup and black sea bass are associated with the upper limit of impacts.

8.11.3.1.4 Summary of Impacts

In sum, the proposed 2011 Council-adjusted commercial quotas in preferred alternative 1 for summer flounder and scup are 34 percent higher (4.31 million lb) and 42 percent higher (4.45 million lb), respectively, relative to the adjusted quotas for year 2010. The black sea bass Council-adjusted commercial quota would result in a slight decrease of 3 percent (0.05 million lb) in allowable commercial landings relative to the adjusted quota for 2010. The Council-adjusted recreational harvest limits for summer flounder and scup for the year 2011 are 33 percent higher (2.85 million lb) and 42 percent higher (1.26 million lb), respectively, relative to the adjusted recreational harvest limits for year 2010. The black sea bass Council-adjusted recreational harvest limit would result in a slight decrease of 3 percent (0.05 million lb) in the allowable recreational landings relative to 2010.

These alternatives are consistent with advice of the SSC and the do not exceed any of the ABC recommendations; therefore, they address scientific uncertainty and provide for a low likelihood of overfishing. In the case of scup, the Council considered other factors including OY and concerns about rapid increases in quota to meet MSY. Furthermore, the Council-adjusted commercial quotas and recreational harvest limits chosen under this alternative were selected by the Council because they maximize commercial and recreational landings to the extent practicable.

The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue increase for 721 vessels to revenue losses of less than 5 percent for 89 vessels relative to 2010. Furthermore, there were no vessels projected to incur revenue losses of 5 percent or higher.

Assuming 2009 ex-vessel prices and the effect of potential changes in fishing opportunities in 2011 versus 2010, the 2011 Council-adjusted quotas in alternative 1 would increase summer flounder and scup revenues by approximately $8.10 and $3.38 million, respectively, relative to the quota implemented in 2010. For black sea bass, a decrease in revenue of $0.14 million is expected in 2011 relative to the quota implemented 2010.

On a per vessel level, the average increase in revenue associated with the increase in summer flounder and scup quotas is $12,036 and $8,492, respectively. For black sea bass vessels, the average decrease in revenues is projected at $304.

The changes in gross revenues indicate that alternative 1 will likely provide a net large benefit gain; while alternative 3 would provide the largest benefit gain and alternative 2 would provide the largest benefit loss in 2011. While alternative 3 provides the largest net benefits among all the evaluated alternatives, it was not chosen as the preferred alternative because the summer flounder could fail to rebuild if the retrospective pattern of underestimation of recruitment occurs in the future, and the TACs associated with this alternative for all three species are inconsistent with the advice of the SSC and/or monitoring committee. Alternative 1 (preferred) on the other hand establishes required commercial landings limits that address the objectives of the FMP. It is important to mention that the estimated benefits derived above are likely to correspond to the upper/lower limits due to the fact that it was assumed in the derivation that all available commercial TALs would be harvested and 2009 ex-vessel prices are constant.

It is important to stress that these are potential changes, i.e., based on available data and assumptions made in order to conduct this analysis. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and other reductions in 2011 (i.e., overages) that were not accounted for here.

Recreational landings for all three fisheries have fluctuated over the past several years. However, it appears that the market demand for this sector is relatively stable. While it is possible that lower recreational trip limits may affect angler satisfaction, it is unlikely that these measures will result in any substantive decreases in the demand for party/charter boat trips.

Alternative 1 is projected to minimize the negative economic impacts upon small entities when compared to alternative 2 while meeting the rebuilding requirements for summer flounder and the sustainability of the summer flounder, scup, and black sea bass stocks.

8.11.3.2 Quota Alternative 2 (Most Restrictive - Non-preferred)

This alternative examines the impacts on industry that would result from the most restrictive harvest levels for summer flounder, scup, and black sea bass. To analyze the economic effects of this alternative, the total harvest levels specified under section 5.0 were employed. Alternative 2 contains Council-adjusted commercial quotas of 12.88, 10.68, and 1.09 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 8.59, 3.01, and 1.14 million lb for flounder, scup, and black sea bass, respectively.

Under this alternative, the summer flounder quota would result in a small (0.2 percent) increase in commercial landings and no change in the recreational harvest limit relative to the 2010 allocations (Tables 17 and 18). The scup specifications would result in no change in the allowable commercial landings or recreational harvest limit relative to the 2010 allocations (Tables 17 and 19). The black sea bass specifications would result in approximately 38 percent decrease in both commercial landings and recreational harvest limit, respectively, relative to the 2010 allocations (Tables 17 and 20). The summer flounder and scup measures under this alternative are the *status quo* management measures. Note that even though the summer flounder quota under this alternative is the *status quo* measure, the 2011 Council-adjusted summer flounder quota is slightly different (0.2 percent) than the adjusted quota implemented in 2010 due to a 2010 commercial overage adjustment. Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

8.11.3.2.1 Commercial Impacts

The results of the threshold analysis are presented in Table 23. The analysis of the harvest levels under this alternative indicate that the economic impacts ranged from expected revenue losses on the order of < 5 percent for 253 vessels (relative to 2010) to revenue losses of 30-39 percent for 101 vessels. In total, 181 vessels are projected to incur revenue reduction of ≥ 5 percent. More specifically, the economic impacts ranged from expected revenue losses in the order of 5-9 percent for 27 vessels, 10-19 percent for 31, 20-29 percent for 22 vessels, and 30-39 percent for 101 vessels. In addition, 123 vessels (15 percent) were projected to be impacted by revenue increase and 253 vessels (31 percent) were projected to have no revenue change (Table 23).

It is important to mention that while the overall Council commercial quota for summer flounder (*status quo*) is only slightly higher (0.2 percent) in 2011 when compared to the adjusted quotas implemented in 2010; the commercial fishing opportunities are greater for fishermen in Massachusetts (4 percent higher; Table 7). As such, the threshold analysis shows that 123 vessels are projected to incur in a revenue increase in 2011 when compared to 2010. The projected increase in revenue for these vessels ranged from a few hundred dollars for most vessels to a few thousands dollars for a very small number of vessels.

Given that a large number of vessels are projected to incur large revenue reduction, Council staff further examined the level of ex-vessel revenues for the impacted vessel to assess further impacts. For example, according to dealer data, it was estimated that 19 percent of the vessels (5 out of 27 vessels) projected to incur revenue reductions of 5-9 percent had total gross sales (all possible species combined not just summer flounder, scup, and black sea bass in 2009) of $1,000 or less and 48 percent (13 vessels) had total gross sales of $10,000 or less. Furthermore, 35 percent of the vessels (11 out of 31 vessels) projected to incur revenue losses of 10-19 percent had total gross sales of approximately $1,000 or less and 68 percent (32 vessels) had total gross sales of $10,000 or less; 50 percent of the vessels (11 out of 22 vessels) projected to incur revenue losses of 20-29 percent had total gross sales of approximately $1,000 or less and 86 percent (19 vessels) had total gross sales of $10,000 or less; and, 40 percent of the vessels (40 out of 101 vessels) projected to incur revenue losses of 30-39 percent had total gross sales of approximately $1,000 or less and 76 percent (77 vessels) had total gross sales of $10,000 or less. While the analysis presented above indicates that in relative terms a large number of vessels (181) are likely to be impacted with revenue reductions of 5 percent or more, 37 percent of these vessels (67 vessels) had gross sales of $1,000 or less and 69 percent of the impacted vessels (125 vessels) had gross sales of $10,000 or less, thus likely indicating that the dependence on fishing for some of these vessels is very small. Since alterative 2 is the most restrictive alternative, impacts of other alternatives will be less than the impacts under this alternative.

Impacts of the quotas provisions were examined relative to a vessel's home state as reported on the vessel's permit application (Table 24). "Home state" indicates the state where a vessel is based and primarily ported, and is presumed to reflect to where the costs and benefits of management actions return. However, home state is self-reported at the time an individual applies for a federal permit and may not necessarily indicate where the vessel subsequently conducts most of its activity. The number of vessels with revenue reduction of ≥ 5 percent by home state ranged from 1 or less in two states (Maine and Connecticut) to 28 in New Jersey.

By virtue of holding a valid federal permit for summer flounder, scup, or black sea bass a vessel is subject to any regulations that are promulgated under the FMP. From this perspective, these vessels are subject to any quota specification whether or not they actually choose to engage in any one of the three (summer flounder, scup, or black sea bass) fisheries. The decision to engage in any given fishery during a given time period is subject to numerous considerations from temporary suspension of fishing due to illness or vessel construction or repair to merely a reasoned decision to pursue other fisheries. Given the limited access nature of the fisheries, a vessel may wish to continue to hold a permit to preserve the opportunity to engage in the fishery when circumstance allows.

Of the 181 vessels showing revenue reduction of ≥ 5 percent, 114 are identified as holders of federal summer flounder, scup, or black sea bass permits. The 114 vessels holding various combinations of summer flounder, scup, and black sea bass permits are described in Table 25. It is most common for vessels to have permits black sea bass only, scup and black sea bass combined, and all three species combined.

Many of the vessels projected to have revenue reductions of ≥ 5 percent hold permits in other fisheries (Table 26). In particular, most vessels have lobster (recreational), bluefish (commercial), dogfish, squid-mackerel-butterfish (commercial), skates, monkfish incidental, and herring (open access commercial). As a result, they have access to some alternative fisheries, although some like multispecies and scallops, are already under heavy regulation and likely to have increasingly stringent catch limits for the near future.

The majority of the impacted vessels (with revenue reductions of 5 percent or more) with federal permits for summer flounder, scup and/or black sea bass have home ports in New Jersey, New York, Massachusetts, Virginia, North Carolina, and Rhode Island. The principal ports of landing for these vessels are mainly located in New Jersey, New York, Rhode Island, and Virginia (Table 27).

Although the summer flounder quota is allocated to the individual states, vessels are not necessarily constrained to land in their home state. It is useful, therefore, to examine the degree to which vessels from different states make it a practice to land in states other than their home state. Thus, of the various states home-porting vessels projected to have revenue reductions in the ≥ 5 percent range, vessels in those states are likely to land in their home port state (76-100 percent; Table 27). This information is important because impacts will occur both in the community of residence and in the community where the vessel's catch is landed and sold.

The largest vessels are found in New Jersey, North Carolina, and Virginia (Table 27). Larger vessels often have more options than smaller vessels, due to increased range and more deck space for alternative gear configurations. This can help them to respond to cuts in quota in particular states. They also, however, need larger volumes to remain profitable.

Most commercial vessels showing revenue reductions in the ≥ 5 percent range are concentrated in New Jersey, New York, Rhode Island, North Carolina and Virginia (Table 28). Within these states, the most impacted counties (largest number of impacted vessels) are: Cape May in New Jersey; New York in New York; Washington in Rhode Island; Dare in North Carolina; Nassau in New York; and City of Norfolk in Virginia. Some individual ports with 5 or more impacted vessels in these counties are: Cape May (Cape May county); New York (New York county); Point Judith (Washington county); Wanchese (Dare county); and Norfolk (City of Norfolk county). If communities having larger numbers of impacted vessels also have a larger total numbers of vessels, the proportion that may be impacted thus may be lower. This effect may mitigate the impacts on the community as a whole.

To further characterize the potential impacts on indirectly impacted entities and the larger communities within which owners of impacted vessels reside, selected county profiles were constructed based on the impacts of this alternative (see section 8.11.4). In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. The 2011 quotas associated with non-preferred alternative 2 would increase summer flounder revenues by approximately $0.06 and decrease black sea bass revenues by $1.81 million relative to the quota implemented in 2010 (assuming the same ex-vessel prices presented above). No changes in scup ex-vessel revenues are expected under this alternative.

Assuming the increase in summer flounder total ex-vessel gross revenues associated with this alternative is distributed equally among the 673 vessels that landed summer flounder in 2009, the average increase in revenue associated with the increase in summer flounder quota is approximately $89/vessel. Finally, assuming the decrease in black sea bass total ex-vessel gross revenues associated with this alternative is distributed equally among the 460 vessels that landed black sea bass in 2009, the average decrease in revenue associated with the decrease in black sea bass quota is approximately $3,935/vessel.

The overall decrease in ex-vessel gross revenue associated with summer flounder, scup, and black sea bass combined in 2011 relative to quotas implemented in 2009 is approximately $1.75 million under the most restrictive alternative. If this is distributed among the 810 vessels that landed summer flounder, scup, and black sea bass in 2009, the average increase in revenue is approximately $2,160/vessel. The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2011 versus 2010 assumed static prices for summer flounder, scup, and black sea bass. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

8.11.3.2.2 Recreational Impacts

The information regarding trends in recreational participation (trends in effort) presented under section 8.11.3.1.2 also apply here.

At the present time, there is neither behavioral nor demand data available to estimate how sensitive party/charter boat anglers might be to proposed fishing regulations. In the summer flounder, scup, and black sea bass fisheries, there is no mechanism to deduct overages directly from the recreational harvest limit. Any overages must be addressed by way of adjustments to the management measures. It is likely that proposed management measures for black sea bass may restrict the recreational fishery for 2011, and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season).

There is no information regarding how the potential decrease in the recreational harvest limits for these species will affect the demand for party/charter boat trips. Currently, the market demand for this sector is relatively stable; however, it is likely that given the proposed recreational harvest limits associated with this alternative, the demand for party/charter boat trips may be negatively impacted. Some anglers may that choose to reduce their effort in 2011 as a consequence of these recreational harvest limits are likely to transfer this effort to alternative species (i.e., spot, bluefish, weakfish, striped bass, tautog, pelagics, etc.) resulting in very little change in overall fishing effort. However, recreational harvest restrictions for many of the alternative species in the Northeast are becoming more binding each year, resulting in fewer substitute landing opportunities, particularly for anglers fishing aboard headboats where passengers are primarily limited to bottom fishing.

8.11.3.2.3 Other Impacts

Effects of Commercial Possession Limits, Minimum Mesh, Minimum Fish Size and Gear restrictions

The impacts of these non-quota management measures described in alternative 1 above (section 8.11.3.1.3) also apply here.

Effects of the RSA

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

Research set-aside Impacts on Summer Flounder, Scup, and Black Sea Bass

The impacts of this non-quota management measure described in alternative 1 above (see section 8.11.3.1.3) also apply here. However, under this alternative, the commercial RSA component for summer flounder could be worth as much as $748,879 or $1,113 per individual vessel; $250,932 or $630/vessel for scup; and $91,287 or $198/vessel for black sea bass (see section 7.4.4).

8.11.3.2.4 Summary of Impacts

Alternative 2 allows commercial fishermen to land lower quantities of black sea bass and near identical quantities of summer flounder and scup in 2011 relative to 2010. Recreational harvest limits would allow for the same recreational fishing opportunities in 2011 as in 2010 for summer flounder and scup but lower for black sea bass.

The total harvest levels for summer flounder, scup, and black sea bass analyzed under this alternative is more conservative than those presented in alternative 1 (preferred). More specifically, the Council-adjusted commercial summer flounder, scup, and black sea bass harvest levels (after RSA have been applied) under this alternative are approximately 4.28, 4.45, and 0.69 million lb lower than the limits specified under alternative 1, respectively. Recreational harvest limits under this alternative are 2.85, 1.26, and 0.64 million lb lower than the limits specified under alternative 1, respectively.

The analysis of the harvest levels under this alternative indicates that 181 vessels (22 percent) will incur in revenue losses of ≥ 5 percent and 253 vessels (31 percent) of less than 5 percent. In addition, 123 vessels (15 percent) were projected to be impacted by revenue increase and 253 vessels (31 percent) were projected to have no revenue change.

Assuming 2009 ex-vessel prices, and the effect of the potential changes in fishing opportunities in 2011 versus 2010, the 2011 quotas associated with alternative 2 (after RSAs have been applied) would increase summer flounder and scup by approximately $0.06 and decrease black sea bass revenues by $1.81 million relative to the quota implemented in 2010. No changes in scup ex-vessel revenues are expected under this alternative.

On a per vessel level, the average change in revenue associated with the changes in quota (increase for summer flounder and decrease for black sea bass) is an increase of approximately $89 for summer flounder and a decrease of $3,935 for black sea bass. The overall reduction in ex-vessel gross revenue associated with summer flounder, scup, and black sea bass combined in 2011 relative to quotas implemented in 2010 is approximately $1.75 million or approximately $2,160/vessel.

Recreational landings for black sea bass under this alternative are substantially lower than those implemented in 2010 It is likely that the proposed limit under this alternative will restrict the fishery for 2011 and these measures may cause some decrease in recreational satisfaction (i.e., low bag limit, larger fish size or closed season) compared alternative 1.

The social and economic impacts of RSAs should be minimal. The RSAs are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions. However, given the decrease in the commercial quota in 2011 relative to 2010 for black sea bass, the cost of any premature closure of the fishery (lb of black sea bass allocated for set-aside) would be shared among the non RSA participants in the fishery.

The economic changes presented in this section represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and other potential reductions in 2011 not accounted for here (section 4.4).

While the quota and recreational harvest limits under this alternative may present an improved probability of attaining the rebuilding objectives specified in the FMP, the negative economic impacts upon small entities are significantly higher than under alternative 1. Therefore, this alternative was not selected because of the potential adverse economic impacts associated with it. The measures presented under this alternative are more restrictive than necessary to ensure sustainability of the stocks.

8.11.3.3 Quota Alternative 3 (Least Restrictive - Non-preferred)

This alternative examines the impacts on industry that would result from the least restrictive harvest levels for summer flounder, scup and black sea bass. To analyze the economic effects of this alternative, the total harvest levels specified under section 5.0 were employed. Alternative 3 contains Council-adjusted commercial quotas of 20.4, 21.91, and 2.07 million lb for summer flounder, scup, and black sea bass, respectively. This alternative also specifies Council-adjusted recreational landings limits of 13.60, 6.18, and 2.15 million lb for flounder, scup, and black sea bass, respectively.

Under this alternative, the summer flounder specifications would result in approximately 59 and 58 percent increase in allowable commercial landings and recreational harvest limit, respectively, relative to 2010 (Tables 17 and 18). The scup specifications would result in an aggregate 105 percent increase in both allowable commercial landings and recreational harvest relative to 2010 (Tables 17 and 19). The black sea bass specifications would result in an 18 percent increase in both allowable commercial landings and recreational harvest relative to 2010 (Tables 17 and 20). Again, this alternative makes the same assumptions about landings as are made in the previous analyses.

8.11.3.3.1 Commercial Impacts

The result of the analysis for this alternative indicates that across all vessel classes, a total of 810 vessels were projected to be impacted by revenue increase (relative to 2010). There were no vessels projected to incur in revenue losses under this alternative (Table 29)

In addition to the threshold analysis described above, the Council also analyzed changes in total ex-vessel gross revenue that would occur as a result of the quota alternatives. The 2011 quotas associated with this non-preferred alternative would increase summer flounder, scup, and black sea bass revenues by approximately $14.19, $8.53, and $0.84 million, respectively, relative to the quota implemented in 2010 (assuming the ex-vessel prices presented above).

Assuming the increase in summer flounder, scup, and black sea bass total ex-vessel gross revenues associated with alternative 3 is distributed equally between the vessels that landed summer flounder (673), scup (398), and black sea bass (460) in 2009, the average increase in revenue associated with the increase in quotas is $21,085/vessel, $21,432/vessel, and $1,826/vessel, respectively.

The overall increase in ex-vessel gross revenue associated with the three species combined in 2011, relative to 2010, is approximately $23.56 million (assuming 2009 ex-vessel prices) under alternative 3. If this is distributed among the 810 vessels that landed summer flounder, scup, and black sea bass in 2009, the average increase in revenue is approximately $29,086/vessel. However, if prices for these species decrease as a consequence of changes in landings, then the associated revenue increase could be different than those estimated above.

The projected increase in ex-vessel gross revenues associated with this alternative is higher than under alternative 1 (preferred). This alternative is projected to minimize the negative economic impacts upon small entities when compared to alternatives 1 and 2. The summer flounder harvest levels under this are higher than the recommendations of the Council's scientific and technical advisors, and may not enable rebuilding given the retrospective pattern in recruitment in the stock assessment.

8.11.3.3.2 Recreational Impacts

As indicated above, the summer flounder, scup, and black sea bass recreational limits for 2011 are substantially higher for summer flounder, scup, and black sea bass when compared to the limits implemented in 2010. It is not anticipated that these measures will result in decrease in the demand for party/charter boat trips or affect angler participation in a negative manner.

8.11.3.3.3 Other Impacts

<u>Effects of Commercial Possession Limits, Minimum Mesh, Minimum Fish Size and Gear restrictions</u>

The impacts of these non-quota management measures described in alternative 1 above (section 8.11.3.1.3) also apply here.

<u>Effects of the RSA</u>

A detailed discussion regarding the socioeconomic impacts of the RSA for summer flounder, scup, and black sea bass is presented in section 7.4.4.

Research set-aside Impacts on Summer Flounder, Scup, and Black Sea Bass

The impacts of this non-quota management measure described in alternative 1 above (see section 8.11.3.1.3) also apply here. However, under this alternative, the commercial RSA component for summer flounder could be worth as much as $1,186,092 or $1,762 per individual vessel; $515,025 or $1,294/vessel for scup; and $172,652 or $375/vessel for black sea bass (see section 7.4.4).

8.11.3.3.4 Summary of Impacts

Alternative 3 allows commercial fishermen to land more summer flounder, scup, and black sea bass than alternatives 1 (preferred) and 2 (most restrictive). Recreational harvest limits for summer flounder, scup, and black sea bass are higher than the limits under alternatives 1 and 2.

The threshold analysis indicates that a total of 810 vessels were projected to be impacted by revenue increase (relative to 2010). There were no vessels projected to incur in revenue losses under this alternative. Assuming 2009 ex-vessel prices, and the effect of the potential changes in fishing opportunities in 2011 versus 2010, the 2011 Council-adjusted quotas associated with alternative 3 (after RSAs have been applied) would increase summer flounder ($14.19 million), scup ($8.53 million), and black sea bass revenues ($0.84 million) relative to the quota implemented in 2010.

On a per vessel level, the average increase in revenue associated with the increase in summer flounder, scup, and black sea bass is approximately $21,085, $21,432, and $1,826, respectively. However, if prices for these species decrease or increase as a consequence of changes in landings, then the associated revenue increases and decreases could be different than those estimated above.

These measures under this alternative would allow for larger overall harvest levels for summer flounder, scup, and black sea bass when compared to alternatives 1 (preferred) and 2 (most restrictive). The harvest levels under this alternative are inconsistent with the advice of the SSC and/or monitoring committee. While the economic benefits associated from this alternative are higher than those described under the preferred alternative, it was not chosen because it is expected to result in long-term negative impacts on the managed resources in 2011.

Recreational harvest limits under this alternative are higher than those implemented in 2010 for all three species. It is not expected that the proposed limits under this alternative will restrict the fishery for 2011. As such, it is not expected that recreational satisfaction would be negatively affected.

The social and economic impacts of RSAs should be minimal. The RSAs are, conceptually, available for commercial vessels to participate in research, as well as for other vessels. Also, the RSAs are expected to yield important long-term benefits associated with improved data upon which to base management decisions.

It is important to stress that these changes as well as those described under the other alternatives represent merely the potential, i.e., based on available data. Actual changes in revenue will likely vary. This variation would occur for several reasons, including impacts undetermined for unidentifiable vessels, revenues earned or lost due to possession limits and seasons set by a state to manage sub-allocations of quota, and other potential reductions in 2011 not accounted for here (section 4.4).

The proposed TALs under this alternative would result in the greatest short-term economic benefit relative to alternatives 1 and 2. However, the TALs under this alternative are not consistent with the advice of the Council's scientific advisors, the SSC.

8.11.4 Other Impacts

County Impacts

For the reasons specified in section 8.11.2 of this document, the economic impacts on vessels of a specified home port were analyzed on a county wide basis. Counties included in the profile had to meet the following criteria: a) the number of vessels with revenue loss exceeding 5 percent per county was either greater than 4, or b) all vessels with revenue loss exceeding 5 percent in a given state were from the same home county.

The results of these analyses are summarized below. The most restrictive alternative (alternative 2) in 2011 was used to assess impacted counties. The most restrictive alternative was chosen to identify impacted counties because it provides the maximum number possible, thus the broadest possible range of counties was included in the analysis. A total of 10 counties were identified to be impacted in 2010: Sussex, DE; Worcester, MD; Cape May and Ocean, NJ; Nassau and New York, NY; Washington, RI; Dare, NC; City of Norfolk and Virginia Beach City, VA. Counties not included in this analysis (e.g., Bristol, Barnstable, Dukes, Plymouth, Essex, and Suffolk, MA; Atlantic, NJ; New London and Fairfield, CT; Accomack and Poquison City Area, VA; Philadelphia, PA; Beaufort, Hyde, NC; Monmouth, NJ; and Newport, RI) did not have enough impacted vessels to meet the criteria specified, i.e., there were less than 5 impacted vessels per county, or all impacted vessels in a state were not home ported within the same county. The target counties were identified based on the county associated with the vessels homeport as listed in the owner's 2009 permit application.

Table 30 details population sizes, employment, personal income, and the contribution of commercial fishing and sea food processing to total personal income for selected counties. Counties presented in Table 30 correspond to the counties identified as impacted due to the management measures evaluated (i.e., as described in the above paragraph). Data presented in Table 30 were obtained from data bases supplied by the Minnesota IMPLAN Group for the calendar year 2001.

Of the counties identified in Table 30, the percentage of total personal income derived from commercial fishing sales and from seafood processing was less than 1 percent for all counties. These data indicate that each of the identified counties in Table 30 is not substantially dependent upon sales of commercial fishing products to sustain the county economies. Population in these counties ranged from 31 thousand in Dare County to 1.5 million in New York County.

9.0 ESSENTIAL FISH HABITAT ASSESSMENT

Summer flounder, scup, and black sea bass have EFH designated in many of the same bottom habitats that have been designated as EFH for most of the MAFMC, New England Fishery Management Council, South Atlantic Fishery Management Council, and NMFS Highly Migratory Species Division managed species. The specific identification and description of summer flounder, scup, and black sea bass EFH is detailed in section 3.2 of Amendment 13 to the FMP (MAFMC 2002). A brief description of habitats that are important to summer flounder, scup, and black sea bass are described in section 6.2 of this document.

9.1 Description of Action

The purpose of the proposed action is to implement 2011 commercial quotas and recreational harvest limits for the summer flounder, scup, and black sea bass fisheries that are necessary to prevent overfishing and not exceed the ABC, and? in the case of summer flounder, to meet the stock rebuilding schedule. It would increase the TAL for summer flounder by 32.2 percent (compared to 2010), increase the TAC for scup by 41.7 percent, and maintain the *status quo* TAL for black sea bass. The commercial quotas and recreational harvest limits would be adjusted for any overages in 2010, but would change by approximately the same amount. Changes to other commercial management measures (i.e., minimum fish size, mesh size, possession limits, and other gear regulations) are not recommended for 2011. (A full description of the action proposed in this annual specifications document is provided in section 5.0). Under the EFH Final Rule, "Councils must act to prevent, mitigate, or minimize any adverse effect from fishing, to the extent practicable, if there is evidence that a fishing activity adversely affects EFH in a manner that is more than minimal and not temporary in nature..." Because of the narrow scope of this annual specifications document, and the fact that any action taken (annual management measures) is consistent with the current regulations implementing the FMP, the effects of fishing on EFH have not been re-evaluated since they were analyzed in Amendment 13, and no alternatives to minimize adverse effects on EFH are presented.

9.2 Analysis of Potential Adverse Effects on EFH

Bottom trawls are used in the commercial fishery to harvest all three species. Because trawls can adversely impact EFH for federally-managed species within the affected environment for this action, the increased commercial quotas for summer flounder and scup have the potential to increase bottom trawling activity and increase adverse impacts to benthic EFH. A larger quota may mean that states establish higher possession limits, which could result in an equal number of fishing trips landing a larger volume of fish. Similarly, with increased species abundance, catch-per-unit-effort could increase, which results in the same number of tows landing a larger volume of fish. In these instances, the proposed quota could result in the same or reduced gear impacts to bottom habitats. It is unlikely the proportion of increase in quotas will result in the same proportion increase in gear contact time with the ocean bottom given the possible variables described above, although some increase in gear contact time would be expected. Assuming that bottom trawling for summer flounder and scup does increase in 2011, the areas which would be subjected to increased disturbance are already fished by mobile, bottom-tending gear used in this and other fisheries, so the additional impact that could result from an increase in summer flounder or scup trawling activity would be minimal and not require any mitigation. The proposed commercial quotas for black sea bass are not expected to cause any increased impacts to EFH.

10.0 LITERATURE CITED

(Literature cited in the appendices only can be found in their respective appendix).

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11.0 LIST OF PREPARERS OF THE ENVIRONMENTAL ASSESSMENT

The summer flounder, scup, and black sea bass specifications were submitted to the NMFS by the MAFMC. This specifications document was prepared by the following members of the MAFMC staff: Jessica Coakley and Dr. José L. Montañez. Dr. Eric Thunberg (NEFSC) assisted in documenting the analysis of permit data. Scott Steinback (NEFSC) assisted in documenting demographic/economic information presented in Table 35.

12.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this specifications document, the Council consulted with NMFS, New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. To ensure compliance with NMFS formatting requirements, the advice of NMFS NERO personnel was sought.

Copies of the specifications document, including the Environmental Assessment and Initial Regulatory Flexibility Analysis and other supporting documents for the specifications are available from Dr. Christopher M. Moore, Executive Director, Mid-Atlantic Fishery Management Council, Suite 201, 800 North State Street, Dover, DE 19901.

TABLES

Table 1. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass catch in 2009, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 4).

Statistical Area	Summer Flounder (percent)	Scup (percent)	Black Sea Bass (percent)
616	14.53	31.61	8.66
622	14.30	8.11	20.74
537	11.93	10.33	2.81
621	9.08	1.85	16.70
612	8.78	1.35	4.64
613	6.29	18.04	4.44
631	6.07	0.00	4.04
626	5.21	0.40	5.59
615	4.15	6.88	11.90
539	3.69	11.68	3.04
611	3.37	6.32	2.60

Table 2. Statistical areas that accounted for at least 5 percent of the summer flounder, scup, or black sea bass trips in 2009, NMFS VTR data (A map showing the location of these statistical areas is presented in Figure 4).

Statistical Area	Summer Flounder (percent)	Scup (percent)	Black Sea Bass (percent)
613	16.44	16.53	14.67
612	15.64	5.37	17.44
539	15.37	20.43	13.68
611	14.98	29.18	14.65
537	9.51	9.28	5.62
538	5.23	9.51	6.26
616	4.35	6.30	5.81
621	4.10	1.85	7.60

Table 3. Top ports of landing (in lb) for summer flounder (FLK), scup (SCP), and black sea bass (BSB), based on NMFS 2009 dealer data. Since this table includes only the "top ports," it may not include all of the landings for the year. Note: C = Confidential

Port	Landings of FLK (lb)	# FLK Vessels	Landings of SCP (lb)	# SCP Vessels	Landings of BSB (lb)	# BSB Vessels
PT. JUDITH, RI	1,423,253	102	2,278,213	105	83,661	95
WANCHESE, NC	1,004,972	34	C	C	87,301	19
HAMPTON, VA	895,555	51	88,354	12	47,925	25
NEWPORT NEWS, VA	766,123	44	119,741	7	24,515	19
PT. PLEASANT, NJ	659,674	42	592,295	24	41,111	27
CAPE MAY, NJ	552,519	56	731,833	20	78,975	30
BEAUFORT, NC	522,007	18	6,234	3	43,078	9
ORIENTAL, NC	492,061	15	C	C	5,684	7
ENGELHARD, NC	488,994	18	0	0	57,535	12
MONTAUK, NY	462,272	70	892,054	51	32,725	50
BELFORD, NJ	422,938	23	204,406	17	13,244	21
NEW BEDFORD, MA	352,115	89	394,693	35	37,419	20
CHINCOTEAGUE, VA	306,397	38	33,313	11	36,569	10
HAMPTON BAYS, NY	276,974	44	376,965	41	15,418	34
LOWLAND, NC	246,181	3	0	0	C	C
STONINGTON, CT	214,930	25	168,385	21	10,952	14
OCEAN CITY, MD	166,440	15	2,127	4	108,127	19
BARNEGAT LIGHT/LONG BEACH, NJ	122,813	36	C	C	3,166	6
WOODS HOLE, MA	112,472	16	28,909	17	12,019	5
NEWPORT, RI	111,774	25	259,700	21	9,092	16
MATTITUCK, NY	105,799	6	84,847	6	41,389	3
LITTLE COMPTON, RI	81,829	26	935,756	18	29,895	17
PT. LOOKOUT, NY	68,208	11	166,201	8	4,,678	7

The ports of Amagansett (NY) and "Other Maryland" (MD) were excluded from this table due to confidentiality issues.

Table 4. MRFSS preliminary estimates of 2009 recreational harvest (numbers of fish kept) and total catch (numbers of fish) for summer flounder (FLK), scup (SCP) and black sea bass (BSB).

State	FLK Harvest (# of fish kept)	FLK Catch (# of fish caught)	SCP Harvest (# of fish kept)	SCP Catch (# of fish caught)	BSB Harvest (# of fish kept)	BSB Catch (# of fish caught)
NH	0	238	0	0	0	0
MA	48,311	170,341	772,233	2,054,391	311,876	803,010
CT	61,625	614,012	228,889	1,178,189	293	180,473
RI	51,293	397,589	171,488	503,137	32,241	151,533
NY	264,508	6,057,504	1,311,612	3,502,928	454,040	1,953,985
NJ	1,012,806	12,307,040	280,531	548,043	608,338	3,611,181
DE	92,039	1,070,498	969	3,821	50,470	380,357
MD	89,660	1,118,419	32	698	30,650	492,783
VA	231,991	3,431,113	2,104	20,156	102,416	1,377,048
NC	58,093	71,081	2,907	5,888	115,710	1,069,119

Table 5. Summary of number of vessels holding federal commercial and/or recreational permit combinations for summer flounder (FLK), scup (SCP) and black sea bass (BSB), 2009.

Comm. Permit Combinations	Recreational Permit Combinations								
	No Rec. Permit	FLK Only	SCP Only	BSB Only	FLK/ SCP	FLK/ BSB	SCP/ BSB	FLK/ SCP/ BSB	Row Total
No Comm. Permit	0	39	7	22	17	64	16	716	881
FLK Only	314	1	0	0	0	0	3	4	322
SCP Only	51	0	0	0	0	2	0	8	61
BSB Only	126	3	0	2	1	4	0	11	147
FLK/ SCP	93	0	0	0	0	0	0	4	97
FLK/ BSB	45	0	0	0	0	1	0	2	48
SCP/ BSB	128	4	0	0	0	1	0	27	160
FLK/ SCP/ BSB	469	3	0	0	1	0	1	16	490
Column Total	1,226	50	7	24	19	72	20	788	2,206

Table 6. Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2009. Note: LA= limited access; OA = open access; DAS = days at sea; P/C=party/charter; GOM = Gulf of Maine.

	Commercial Only (n= 1,226)		Party/Charter Only (n= 881)		Commercial and Party/Charter (n= 99)	
Northeast Permits	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**
Ocean Quahog	522	43	18	2	9	9
Surfclam	531	43	17	2	8	8
Scallop - LA DAS	308	25	0	0	0	0
Scallop - ITQ	195	16	5	1	1	1
Scallop - limited entry GOM general category	55	4	9	1	5	5
Scallop - incidental general category	236	19	3	<1	1	1
Non-trap Lobster (comm.)	729	59	22	2	20	20
P/C Lobster	0	0	25	3	5	5
Lobster Trap (commercial)	356	29	63	7	29	29
P/C Multi-Species	4	<1	679	77	38	38
Commercial Multispecies	8	1	3	<1	0	0
Multispecies - OA other than P/C Multispecies	459	37	337	38	44	44
P/C Squid/ Mackerel/ Butterfish	0	0	749	85	71	72
Commercial Squid/ Mackerel/ Butterfish	1,109	90	338	38	74	75

Table 6 (Continued). Federal northeast region permits held by summer flounder, scup, and black sea bass commercial and recreational vessels, 2009. Note: LA= limited access; OA = open access; DAS = days at sea; P/C=party/charter; GOM = Gulf of Maine.

	Commercial Only (n= 1,226)		Party/Charter Only (n= 881)		Commercial and Party/Charter (n= 99)	
Northeast Permits	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**	**Vessels (No.)**	**Percent of Total**
Commercial Bluefish	1,149	94	430	49	93	94
P/C Bluefish	8	1	819	93	86	87
Spiny Dogfish	1,109	90	528	60	83	84
Herring - LA all area permit	19	2	0	0	0	0
Herring - LA area 2 & 3	4	<1	0	0	0	0
Herring - LA incidental	41	3	0	0	2	2
Herring - OA	868	71	421	48	71	72
Red Crab Incidental	760	62	151	17	44	44
Red Crab 75,000 lb trip limit	0	0	0	0	0	0
Red Crab > 75,000 lb trip limit	0	0	0	0	0	0
Skate	1,046	85	374	42	74	75
Tilefish Commercial (IFQ + incidental categories combined)	938	77	457	52	74	75
tilefish P/C	2	<1	196	22	25	25
Monkfish	546	45	7	1	9	9
Incidental Monkfish	703	57	555	63	93	94

Table 7. Descriptive data from northeast region permit files for commercial vessels, 2009.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	27	8	3	411	19	69	107	23	212	121	0	130	94	2
No. of Permits by Home Port State	30	8	5	439	16	54	109	19	202	132	8	118	85	1
No. of Permits by Principal Port State	31	6	1	428	17	53	98	22	210	126	1	131	102	1
Average Length by Principal Port	58	40	41	54	46	35	64	40	59	44	64	54	65	NA
Average Tonnage by Principal Port	84	19	26	80	27	34	83	29	77	38	109	62	100	NA
Average Horse Power by Principal Port	551	419	535	465	348	231	494	264	514	344	850	434	553	NA
Percent Home Port Equal Principal Port	97	100	100	98	88	94	90	86	91	98	0	87	75	NA

Table 8. Descriptive data from northeast region permit files for party/charter vessels, 2009.

	CT	DE	FL	MA	MD	ME	NC	NH	NJ	NY	PA	RI	VA	Other
No. of Permits by Mailing Address State	31	40	11	221	40	38	16	31	193	122	26	60	47	5
No. of Permits by Home Port State	22	44	9	221	45	39	20	31	193	130	14	66	45	2
No. of Permits by Principal Port State	25	43	4	220	44	41	20	30	208	124	2	69	49	2
Average Length by Principal Port	47	36	46	36	43	32	43	38	42	45	55	33	40	NA
Average Tonnage by Principal Port	31	16	40	17	28	12	27	19	26	31	46	15	23	NA
Average Horse Power by Principal Port	682	518	954	452	697	352	894	446	606	572	715	419	701	NA
Percent Home Port Equals Principal Port	80	95	100	99	87	93	95	97	91	96	0	94	88	NA

Table 9. Descriptive data from northeast region permit files for combination commercial/recreational vessels, 2009.

	CT	DE	FL	MA	NC	NH	NJ	NY	PA	RI	VA
No. of Permits By Mailing Address State	2	5	1	15	8	1	10	38	1	11	7
No. of Permits By Home Port State	0	5	1	20	8	1	9	41	0	7	7
No. of Permits by Principal Port State	1	5	1	15	8	1	10	39	-	12	7
Average Length by Principal Port	42	49	34	33	46	18	54	40	-	39	42
Average Tonnage by Principal Port	13	34	7	14	36	1	37	27	-	27	22
Average Horse Power by Principal Port	700	677	500	311	432	15	617	419	-	508	624
Percent Home Port Equal Principal Port	0	100	100	100	100	100	90	100	-	58	100

Table 10. Dealers reporting buying summer flounder, scup, and/or black sea bass, by state (from NMFS commercial landings database) in 2009.

	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Other
Number of Dealers	47	37	9	57	31	3	7	25	26	2

Table 11. Comparison of habitat impacts and considerations for selecting summer flounder alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Preferred)	**29.48**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Slightly increased short-term yields, similar habitat impacts compared to 2010, potential for positive short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most Restrictive/ *Status quo* (No Action))	**22.13**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Similar short-term yields, similar habitat impacts compared to 2010, positive short-term financial impacts to industry, and long-term financial benefits to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**35.05**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase. There is potential for increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternatives 1 and 2), similar to negative habitat impacts compared to 2010, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 12. Comparison of habitat impacts and considerations for selecting scup alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Preferred)	**20.00**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase. There is potential for increased impacts with this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Increased short-term yields, similar to negative habitat impacts compared to 2010, potential for positive short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most restrictive/ *Status quo* (No Action))	**14.11**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Similar short-term yields, similar habitat impacts compared to 2010, neutral short-term financial impacts to industry, and long-term financial benefits to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**28.96**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase. There is potential for increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternative 1 and 2), similar to negative habitat impacts compared to 2010, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 13. Comparison of habitat impacts and considerations for selecting black sea bass alternatives.

Alternative	TAL in mil lb	Potential Change in CPUE and Habitat Impacts	Considerations for Selecting Alternative
Alternative 1 (Preferred: *Status quo* (No Action))	**3.60**	Based upon species abundance, impacts associated with effort may remain the same as existing. There are no adverse impact habitats expected under this alternative.	Does not maximize landings; lesser risk of overfishing (compared to alternative 3). Similar habitat impacts compared to 2009, potential for neutral to slight short-term financial impacts, and long-term financial benefits to industry.
Alternative 2 (Non-Preferred: Most restrictive)	**2.30**	Based upon species abundance, impacts associated with effort may remain the same as existing or decrease slightly. There is potential for decreased habitat impacts with this alternative.	Does not maximize landings; this alternative has the lowest risk of overfishing (compared to alternatives 1 and 3). Decreased short-term yields, similar to positive habitat impacts compared to 2010, negative short-term financial impacts to industry, and positive long-term financial impacts to industry.
Alternative 3 (Non-Preferred: Least Restrictive)	**4.35**	Based upon species abundance, impacts associated with effort may remain the same as existing or increase slightly. There is potential for slightly increased impacts with this alternative.	Maximizes landings to greatest extent, highest risk of overfishing (compared to alternatives 1 and 2), similar to slight negative habitat impacts compared to 2010, short-term benefit to industry, but possible long-term negative financial impacts to industry.

Table 14. The research set-aside amounts that were analyzed for 2011. Note: Actual approved RSA amounts may be less than or equal to the maximum 3 percent depending on the specific project requests.

Table values (million lb)		Initial TAL	Research Set-Aside Requested	Value Analyzed 3 percent of TAL
Summer Flounder	**Alternative 1 (Preferred)**	29.48	3% of TAL or less	0.88
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo* (No Action))	22.13		0.66
	Alternative 3 (Non-Preferred: Least Restrictive)	35.05		1.05
Scup	**Alternative 1 (Preferred)**	20.00	3% of TAL or less	0.60
	Alternative 2 (Non-Preferred: Most Restrictive / *Status quo*(No Action))	14.11		0.42
	Alternative 3 (Non-Preferred: Least Restrictive)	28.96		0.87
Black Sea Bass	**Alternative 1 (Preferred: *Status quo* (No Action))**	3.60	3% of TAL or less	0.11
	Alternative 2 (Non-Preferred: Most Restrictive)	2.30		0.07
	Alternative 3 (Non-Preferred: Least Restrictive)	4.35		0.13

Table 15. Status of stock for potential non-target species for all proposed 2011 Mid-Atlantic research set-aside projects as of May 2010 (Table provided by Sarah Thompson of NMFS/NERO).

Species	Status of Stock
American Lobster	SNE - Overfishing, Depleted
Atlantic Cod	GOM - Overfishing, Overfished; GB - Overfishing, Overfished
Atlantic Herring	-
Atlantic Mackerel	-
Barndoor Skate	-
Butterfish	GOM - Overfished; Cape Hatteras - Overfished
Clearnose Skate	-
Haddock	GOM - Overfished; GB - Overfished
Illex	-
Little Skate	-
Monkfish	-
Offshore Hake	-
Rosette Skate	-
Silver Hake	-
Smooth Skate	GOM - Overfished
Spiny Dogfish	-
Thorny Skate	GOM – Overfished
Weakfish	Unknown if Overfishing Occurring, Overfished
White Hake	GOM - Overfishing, Overfished; GB - Overfishing, Overfished
Windowpane Flounder	SNE/MA - Overfished
Winter Flounder	GB - Overfishing; SNE/MA - Overfishing, Overfished
Winter Skate	-
Yellowtail Flounder	GB - Overfishing, Overfished; SNE/MA - Overfishing, Overfished; CC/GOM - Overfishing, Overfished

CC – Cape Cod; GB – Georges Bank; GOM – Gulf of Maine; MA – Mid-Atlantic;
SNE – Southern New England

Table 16. Numbers of vessels landing scup, black sea bass and/or summer flounder in 2009.

Landings Class	Landings Combinations	Commercial Vessels (#)
1	Scup Only	28
2	Black Sea Bass Only	69
3	Summer Flounder Only	266
4	Scup/Black Sea Bass	40
5	Scup/Summer Flounder	56
6	Black Sea Bass/Summer Flounder	77
7	Scup/Black Sea Bass/Summer Flounder	274
	Total	810

Data from Northeast Region dealer data.

Table 17. Percentage changes associated with allowable commercial landings for various alternatives in 2011 (adjusted for overages and RSA) relative to the adjusted quotas for 2010[a].

	Total Change Including Overages and RSA		
Geographic Area or Time Period	**Quota Alternative 1 (Preferred)**	**Quota Alternative 2 (Most Restrictive)**	**Quota Alternative 3[*] (Least Restrictive)**
Summer Flounder			
New Hampshire	+34%	0%	+59%
Delaware[b]	-100%	-100%	-100%
Massachusetts	+38%	+4%	+64%
States other than NH, DE, and MA	+33%	0%	+58%
Aggregate Change	+34%	< +1%	+59%
Scup			
Winter I	+42%	0%	+105%
Summer	+42%	0%	+105%
Winter II	+42%	0%	+105%
Aggregate Change	+42%	0%	+105%
Black Sea Bass			
Aggregate Change	-3%	-38%	+16 %

[*]Denotes *status quo* management measures.
[a]2010 quotas adjusted for research set-aside and other adjustments due to transfers, overages, and/or quota restorations.
[b]Delaware has no quota allocation in 2011 due to prior years overages.

Table 18. Number of summer flounder recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2011.

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	5,802,215	7.41	16.47
2001	6,130,383	7.16	11.64
2002	4,564,011	9.72	8.01
2003	5,624,387	9.28[c]	11.64
2004	5,129,166	11.21[c]	10.87
2005	5,560,041	11.98[c]	10.58
2006	5,447,976	9.29[c]	11.55
2007	5,789,397	6.68[c]	9.86
2008	5,427,175	6.21[c]	7.90
2009	4,818,196	7.16[c]	6.30
2010	NA	8.59[c]	NA
2011	NA	11.44[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was summer flounder, Maine through North Carolina. Source: Scott Steinback, NMFS/NER/NEFSC.
[b]From Maine through North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under preferred alternative 1.
NA = Data not available.

Table 19. Number of scup recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2011.

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	485,039	1.24	5.44
2001	484,604	1.77	4.26
2002	481,716	2.71[c]	3.62
2003	971,770	4.01[c]	8.48
2004	567,518	4.01[c]	4.24
2005	478,810	3.96[c]	2.54
2006	466,977	4.15[c]	2.95
2007	740,037	2.74[c]	3.65
2008	729,197	1.83[c]	4.04
2009	536,072	2.59[c]	2.94
2010	NA	3.01[c]	NA
2011	NA	4.27[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was scup, Maine through North Carolina. Source: Scott Steinback, NMFS/NEFSC.
[b]From Maine through North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under preferred alternative 1.
NA = Data not available.

Table 20. Number of black sea bass recreational fishing trips, recreational harvest limit, and recreational landings from 1991 to 2011.

Year	Number of Fishing Trips[a]	Recreational Harvest Limit (million lb)	Recreational Landings of BSB (million lb)[b]
1991	288,691	None	4.32
1992	263,957	None	2.91
1993	299,404	None	4.99
1994	253,888	None	3.05
1995	313,537	None	6.34
1996	231,090	None	4.13
1997	310,898	None	4.40
1998	137,734	3.15	1.29
1999	136,452	3.15	1.70
2000	255,789	3.15	4.12
2001	293,191	3.15	3.60
2002	283,537	3.43[c]	4.44
2003	285,861	3.43[c]	3.45
2004	186,038	4.01[c]	1.95
2005	163,418	4.13[c]	2.10
2006	251,945	3.99[c]	2.11
2007	430,581	2.47[c]	1.63
2008	273,227	2.11[c]	1.64
2009	351,484	1.14[c]	2.44
2010	NA	1.83[c]	NA
2011	NA	1.78[c,d]	NA

[a]Estimated number of recreational fishing trips (expanded) where the primary target species was black sea bass, Maine through North Carolina. Source: Scott Steinback, NMFS/NEFSC.
[b]From Maine through Cape Hatteras, North Carolina.
[c]Adjusted for research set-aside.
[d]Recreational harvest limit under preferred alternative 1.
NA = Data not available.

Table 21. Threshold analysis of revenue impacts for participating vessels associated with the 2011 combined summer flounder, scup, and black sea bass quota under alternative 1 (preferred). "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 1 (Preferred)				Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Class	Landings Combination	Total Vessels	Number of Vessels Impacted by ≥ 5 Reduction			<5	5-9	10-19	20-29	30-39	40-49	≥50
1	SCP Only	28	0	28	0	0	0	0	0	0	0	0
2	BSB Only	69	0	0	0	69	0	0	0	0	0	0
3	FLK Only	266	0	266	0	0	0	0	0	0	0	0
4	SCP/BSB	40	0	31	0	9	0	0	0	0	0	0
5	SCP/FLK	56	0	56	0	0	0	0	0	0	0	0
6	BSB/FLK	77	0	66	0	11	0	0	0	0	0	0
7	SCP/BSB/FLK	274	0	274	0	0	0	0	0	0	0	0
	Totals	810	0	721	0	89	0	0	0	0	0	0

Table 22. Review of revenue impacts under quota alternative 1 (preferred; associated with the 2011 combined summer flounder, scup, and black sea bass quotas), by home port state.

State	Participating Vessels	Number of Vessels Impacted ≥5 percent	Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
					<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	11	0	11	0	0	0	0	0	0	0	0
DE	4	0	1	0	3	0	0	0	0	0	0
MA	104	0	101	0	3	0	0	0	0	0	0
MD	8	0	3	0	5	0	0	0	0	0	0
ME	4	0	4	0	0	0	0	0	0	0	0
NC	84	0	80	0	4	0	0	0	0	0	0
NJ	111	0	92	0	19	0	0	0	0	0	0
NY	94	0	84	0	10	0	0	0	0	0	0
RI	90	0	85	0	5	0	0	0	0	0	0
VA	36	0	24	0	12	0	0	0	0	0	0
OTHER[a]	4	0	3	0	1	0	0	0	0	0	0
NOT KNOWN[b]	260	0	233	0	27	0	0	0	0	0	0
Total	810	0	721	0	89	0	0	0	0	0	0

[a]States with fewer than 3 vessels were aggregated.
[b]Vessels have shown landings of either of those three species in 2009, but did not hold any of the requisite Federal permits in 2009. These vessels may be fishing exclusively in state waters fisheries for those species, and landings are indicated because of reporting requirements for their other Federal permits or they do not hold a Federal permit to participate in these fisheries any longer.

Table 23. Threshold analysis of revenue impacts for participating vessels associated with the 2011 combined summer flounder, scup, and black sea bass quota under alternative 2 (most restrictive). "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 2 (Most Restrictive)				Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Class	Landings Combination	Total Vessels	Number of Vessels Impacted by ≥ 5 Reduction			<5	5-9	10-19	20-29	30-39	40-49	≥50
1	**SCP Only**	28	0	0	28	0	0	0	0	0	0	0
2	**BSB Only**	69	69	0	0	0	0	0	0	69	0	0
3	**FLK Only**	266	0	81	185	0	0	0	0	0	0	0
4	**SCP/BSB**	40	36	0	0	4	2	4	15	15	0	0
5	**SCP/FLK**	56	0	18	38	0	0	0	0	0	0	0
6	**BSB/FLK**	77	30	1	2	44	8	5	3	14	0	0
7	**SCP/BSB/FLK**	274	46	23	0	205	17	22	4	3	0	0
	Totals	810	181	123	253	253	27	31	22	101	0	0

Table 24. Review of revenue impacts under quota alternative 2 (most restrictive; associated with the 2011 combined summer flounder, scup, and black sea bass quotas), by home port state.

State	Participating Vessels	Number of Vessels Impacted ≥5 percent	Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (percent)						
					<5	5-9	10-19	20-29	30-39	40-49	≥50
CT	11	1	0	5	4	1	0	0	0		
DE	4	4	0	0	0	1	0	0	3	0	0
MA	104	15	76	6	7	3	5	3	4	0	0
MD	8	5	0	1	2	0	0	0	5	0	0
ME	4	0	1	0	0	0	0	0	0	0	0
NC	84	13	0	39	32	6	2	1	4	0	0
NJ	111	28	0	39	44	3	5	1	19	0	0
NY	94	18	1	24	51	1	4	0	13	0	0
RI	90	13	1	15	61	2	4	2	5	0	0
VA	36	15	0	16	5	1	1	0	13	0	0
OTHER[a]	4	2	0	2	0	1	0	0	1	0	0
NOT KNOWN[b]	260	67	44	103	46	8	10	15	34	0	0
Total	810	181	123	253	253	27	31	22	101	0	0

[a]States with fewer than 3 vessels were aggregated.
[b]Vessels have shown landings of either of those three species in 2009, but did not hold any of the requisite Federal permits in 2009. These vessels may be fishing exclusively in state waters fisheries for those species, and landings are indicated because of reporting requirements for their other Federal permits or they do not hold a Federal permit to participate in these fisheries any longer.

Table 25. Combinations of 2009 summer flounder (FLK), scup (SCP), and black sea bass (BSB) permits held by commercial vessels projected to have revenue reductions in the 5 percent or more range under alternative 2 (most restrictive).

	All 3	FLK only	BSB only	SCP only	SCP/ BSB	SCP/ FLK	BSB/ FLK	None*
Commercial	32	1	38	1	37	1	4	67

* "None" indicates no summer flounder, scup, or black sea bass permit held, and not necessarily no commercial permits held.

Table 26. Other 2009 permits held by the 114 vessels holding summer flounder, scup and/or black sea bass permits projected to have revenue reductions in the 5 percent or more range under alternative 2 (most restrictive) in 2011.

	Northeast Region Permit Status	Number of Vessels	Percent of Permitted Vessels
Commercial	Multispecies	1	1
	Multispecies - Open access other than P/C Multispecies	58	51
	Surfclam	22	19
	Quahog	21	18
	Scallop - Limited access (Days-at-sea)	10	9
	Scallop - ITQ	12	11
	Scallop - Limited entry - Gulf of Maine general category	2	2
	Scallop - incidental general category	13	11
	Tilefish Commercial (IFQ + incidental categories combined)	82	72
	Herring - Limited access incidental	5	4
	Herring - Open access	64	56
	Lobster, trap gear	59	52
	Lobster, non-trap gear	25	22
	Squid/Mackerel/Butterfish	88	77
	Bluefish	109	96
	Dogfish	102	89
	Atl. Deep-Sea Red Crab - Incidental	64	56
	Skate	86	75
	Monkfish - Limited Access	25	22
	Monkfish - Incidental	71	62
Recreational	Multispecies	5	4
	Squid/Mackerel/Butterfish	10	9
	Bluefish	14	12
	Tilefish	6	5
	Lobster	114	100

Table 27. Descriptive information for the commercial vessels showing revenue reductions in the 5 percent or more range (in 2011) based on 2009 descriptive data from NMFS permit files under alternative 2 (most restrictive). No vessel characteristics data are reported for states with fewer than 3 permits.

	DE	MA	MD	NC	NJ	NY	RI	VA	Other
# Permits by Home Port State	4	15	5	13	28	18	13	15	3
# Permits by Principal Port State	4	11	5	13	30	17	17	16	1
# Permits by Mailing Address State	4	10	5	13	30	17	17	15	3
Avg. Length in Feet by Principal Port	45	38	44	55	52	33	42	46	NA
Avg. GRT by Principal Port	19	22	27	65	55	13	28	42	NA
Avg. Vessel Horsepower	501	260	354	439	469	276	352	481	NA
% of Vessels where Home Port State = Principal Port State	100	100	100	77	90	100	76	80	100

Table 28. Distribution of commercial vessels showing revenue reductions in the 5 percent or more range under alternative 2 (most restrictive; in 2011; holding permits for summer flounder, scup, and black sea bass) by state, county and home port, from 2009 NMFS permit files - home ports with fewer than three vessels are not reported - only county-level data supplied; counties with fewer than three vessels are not reported.

State	County	Home port	Number of Vessels
Delaware	Sussex	Various (3 ports)	4
Maryland	Worcester	Ocean City	4
		Other	1
Massachusetts	Bristol	Various (2 ports)	3
	Barnstable	Various (3 ports)	4
	Suffolk	Boston	4
New Jersey	Atlantic	Atlantic City	3
		Other	1
	Cape May	Cape May	14
		Sea Isle City	3
		Other	1
	Ocean	Point Pleasant	4
		Other	1
New York	Nassau	Various (6 ports)	7
	New York	New York	8
		Various (3 ports)	3
Rhode Island	Washington	Point Judith	9
		Other	1
	Newport	Various (3 ports)	3
North Carolina	Dare	Wanchese	7
		Various (2 ports)	2
	Hyde	Swan Quarter	3
Virginia	City of Norfolk	Norfolk	7
	Virginia Beach City	Virginia Beach	4
		Other	1

Table 29. Threshold analysis of revenue impacts for participating vessels associated with the 2011 combined summer flounder, scup, and black sea bass quota under alternative 3 (least restrictive). "FLK" is summer flounder, "BSB" is black sea bass, and "SCP" is scup.

Quota Alternative 3 (Least Restrictive/*Status quo*)				Increased Revenue (number)	No Change in Revenue (number)	Number of Impacted Vessels by Reduction Percentile (%)						
Class	Landings Combination	Total Vessels	Number of Vessels Impacted by ≥ 5 Reduction			<5	5-9	10-19	20-29	30-39	40-49	≥50
1	SCP Only	28	0	28	0	0	0	0	0	0	0	0
2	BSB Only	69	0	69	0	0	0	0	0	0	0	0
3	FLK Only	266	0	266	0	0	0	0	0	0	0	0
4	SCP/BSB	40	0	40	0	0	0	0	0	0	0	0
5	SCP/FLK	56	0	56	0	0	0	0	0	0	0	0
6	BSB/FLK	77	0	77	0	0	0	0	0	0	0	0
7	SCP/BSB/FLK	274	0	274	0	0	0	0	0	0	0	0
	Totals	810	0	810	0	0	0	0	0	0	0	0

Table 30. Counties identified as having >= 4 commercial vessels showing revenue reductions of 5 percent or more as a consequence of the most restrictive 2011 alternative (alternative 2) evaluated in this document (sections 8.11.2 and 8.11.4 of the RIR/FRFA).

State	County[a]	Population[b]	Employment[c]	Total Personal Income[d] (million of $'s)	Commercial Fishing Employment	Percent of Personal Income Derived From Comm. Fishing	Fresh and Frozen Seafood Processing Employment	Percent of Personal Income derived From Seafood Processing
DE	Sussex	161,270	85,726	3,733.21	*	*	248	.20%
MD	Worcester	48,084	32,443	1,306.08	405	.14%	46	.09%
NJ	Cape May	102,352	55,562	3,209.74	796	.34%	294	.30%
NJ	Ocean	527,207	187,627	15,742.25	166	.04%	0	0%
NY	Nassau	1,334,648	761,530	63,524.34	198	.0039%	84	.0029%
NY	New York	1,541,150	2,768,774	144,033.30	0	0%	23	.0013%
RI	Washington	125,991	62,870	4,212.16	793	.46%	96	.11%
VA	Virginia Beach City	426,931	245,384	13,767.66	157	.03%	*	*
VA	City of Norfolk	233,147	236,953	5,479.15	0	0%	52	.04%
NC	Dare	31,168	25,453	830.10	77	.08%	17	.01%

* = < 10 observations.

a = Data obtained from the Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082, www.implan.com, 2001.

b = Year-round population.

c = Includes both full-time and part-time workers.

d = Includes employee compensation (wage and salary payments and benefits paid by employers) and proprietary income (payments received by self-employed individuals as income).

Source: Scott Steinback (NEFSC).

Note: The PA module was not available to conduct the county profile for that state. However, it is expected that overall commercial fishing employment; percent of personal income derived from commercial fishing; fresh and frozen seafood processing employment percent of personal; and income derived from seafood processing are expected to be low and not higher than the highest values presented in this table due to the small amount of marine commercial fishing activity in that state.

FIGURES

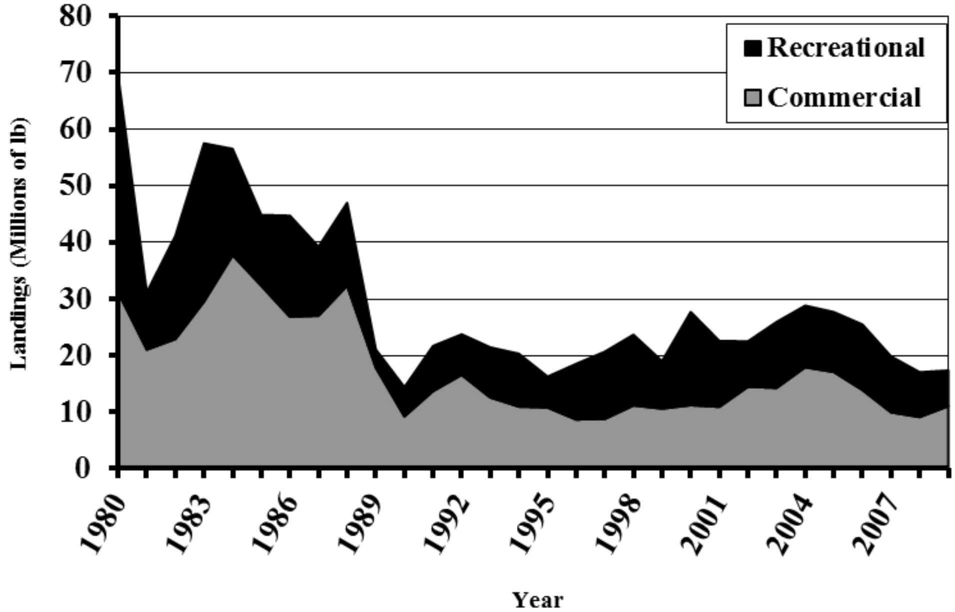

Figure 1. Summer flounder commercial and recreational landings, 1980-2009.

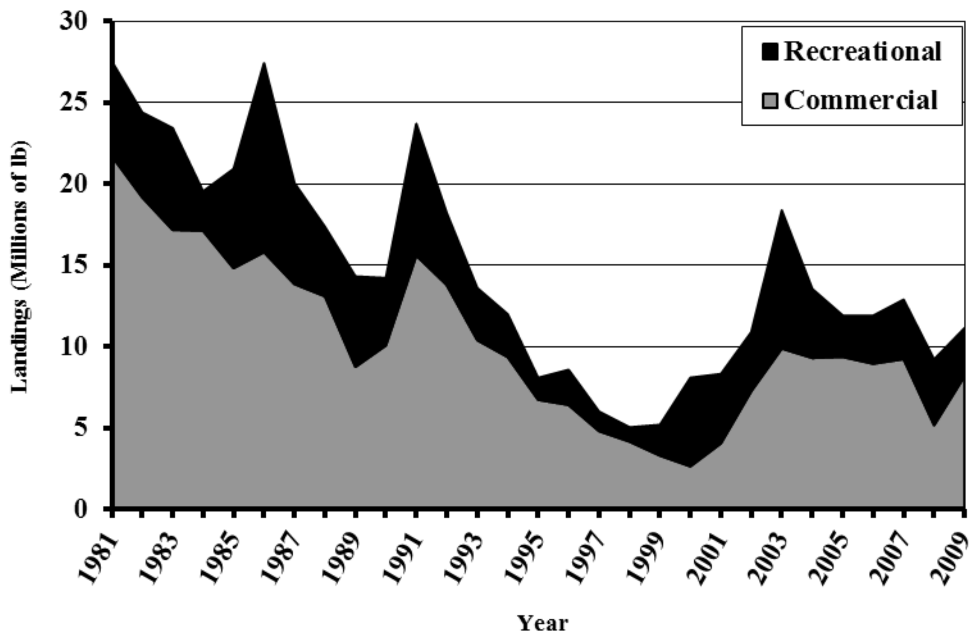

Figure 2. Scup commercial and recreational landings, 1981-2009.

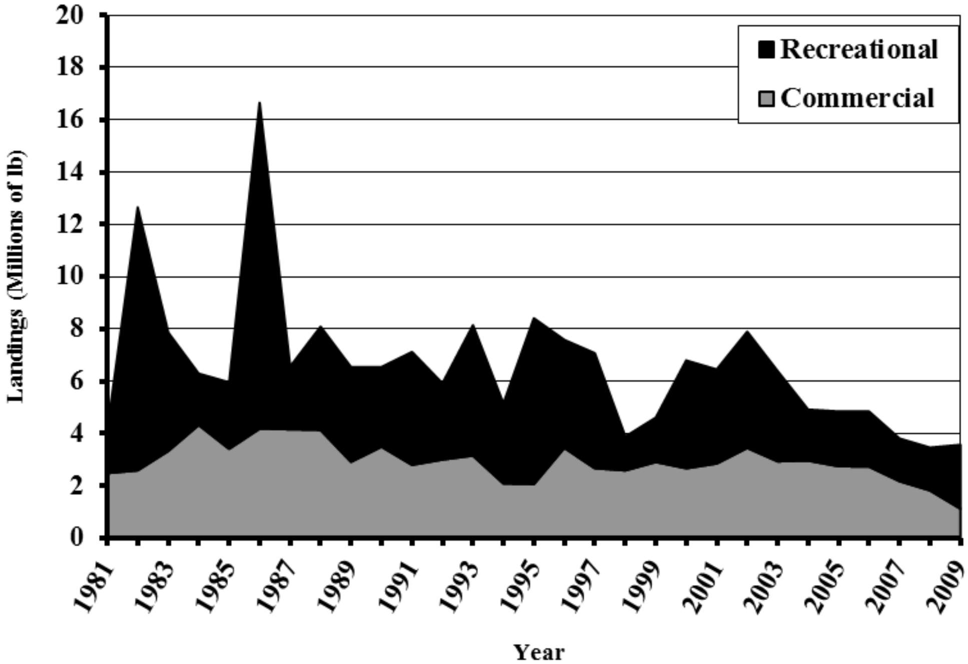

Figure 3. Black sea bass commercial and recreational landings, 1981-2009.

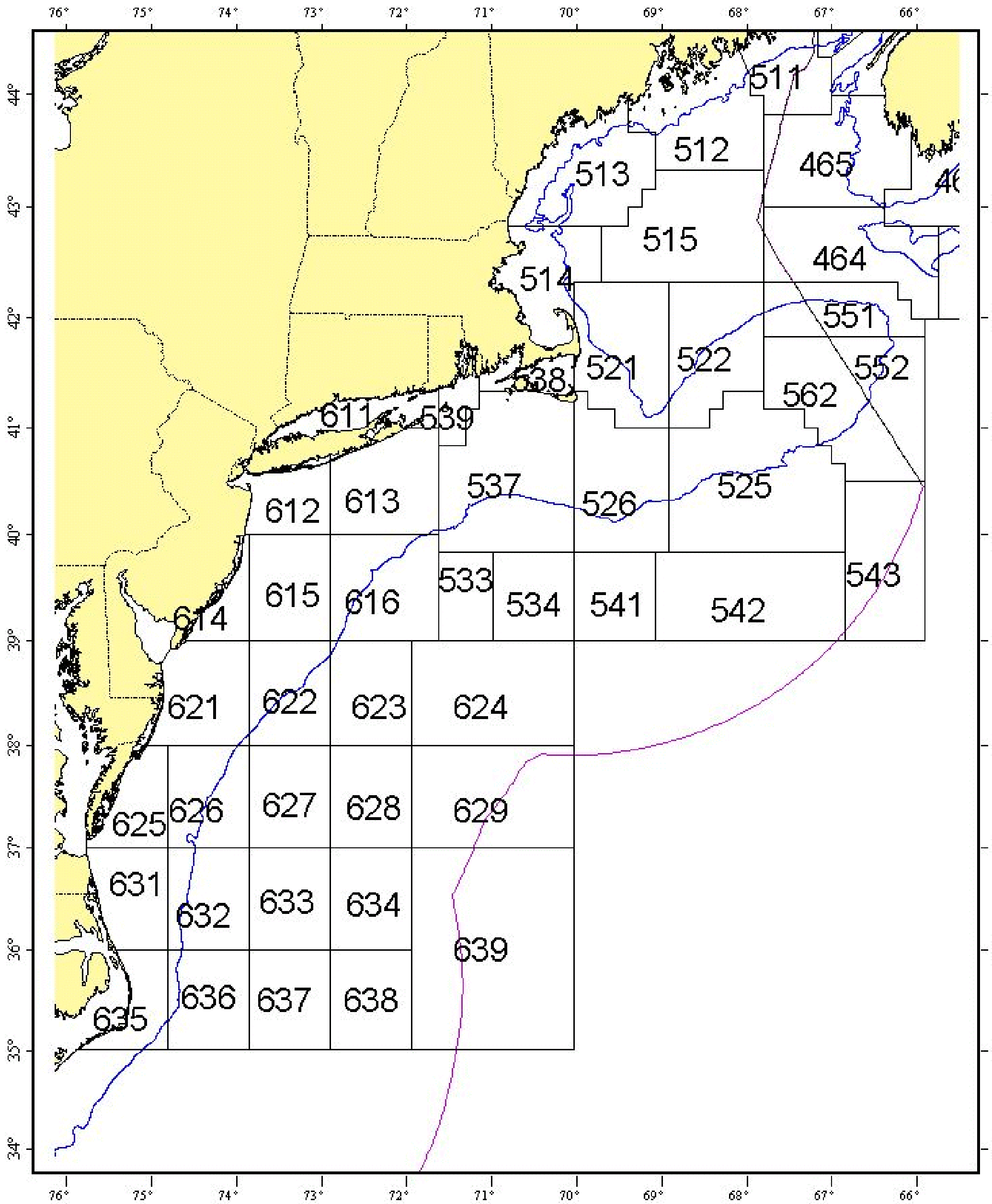

Figure 4. NMFS Northeast statistical areas.

APPENDIX A. Description of Species Listed as Endangered and Threatened which inhabit the management unit of the FMP

Species which have documented interactions with the summer flounder, scup, and black sea bass fisheries: Descriptions are provided in section 6.3 of this EA.

Other Endangered and Threatened Species within the Management Unit

North Atlantic Right Whale

Right whales have occurred historically in all the world's oceans from temperate to subarctic latitudes. NMFS recognizes three major subdivisions of right whales: North Pacific, North Atlantic, and Southern Hemisphere. NMFS further recognizes two extant subunits in the North Atlantic: eastern and western. A third subunit may have existed in the central Atlantic (migrating from east of Greenland to the Azores or Bermuda), but this stock appears to be extinct (Waring et al. 2002).

The north Atlantic right whale has the highest risk of extinction among all of the large whales in the world's oceans. The scarcity of right whales is the result of an 800-year history of whaling that continued into the 1960s (Klumov 1962). Historical records indicate that right whales were subject to commercial whaling in the North Atlantic as early as 1059. Between the 11th and 17th centuries, an estimated 25,000-40,000 right whales may have been harvested. The size of the western north Atlantic right whale population at the termination of whaling is unknown, but the stock was recognized as seriously depleted as early as 1750. However, right whales continued to be taken in shore-based operations or opportunistically by whalers in search of other species as late as the 1920's. By the time the species was internationally protected in 1935, there may have been fewer than 100 western north Atlantic right whales in the western Atlantic (Hain 1975; Reeves et al. 1992; Waring et al. 2002).

Right whales appear to prefer shallow coastal waters, but their distribution is also strongly correlated to the distribution of their prey (zooplankton). In both the northern and southern hemispheres, right whales are observed in the lower latitudes and more coastal waters during winter where calving takes place, and then tend to migrate to higher latitudes during the summer. The distribution of right whales in summer and fall in both hemispheres appears linked to the distribution of their principal zooplankton prey (Winn et al. 1986). They generally occur in Northwest Atlantic waters west of the Gulf Stream and are most commonly associated with cooler waters (21º C). They are not found in the Caribbean and have been recorded only rarely in the Gulf of Mexico.

Right whales feed on zooplankton through the water column, and in shallow waters may feed near the bottom. In the Gulf of Maine they have been observed feeding on zooplankton, primarily copepods, by skimming at or below the water's surface with open mouths (NMFS 1991b; Kenney et al. 1986; Murison and Gaskin 1989; and Mayo and Marx 1990). Research suggests that right whales must locate and exploit extremely dense patches of zooplankton to feed efficiently (Waring et al. 2002). New England waters include important foraging habitat for right whales and at least some portion of the North Atlantic right whale population is present in these waters throughout most months of the year. They are most abundant in Cape Cod Bay between February and April (Hamilton and Mayo 1990; Schevill et al. 1986; Watkins and Schevill 1982) and in the Great South Channel in May and June (Payne et al. 1990) where they have been observed feeding predominantly on copepods, largely of the genera Calanus and Pseudocalanus (Waring et al. 2002). Right whales also frequent Stellwagen Bank and Jeffrey's Ledge, as well as Canadian waters including the Bay of Fundy and Browns and Baccaro Banks, in the spring and summer months. Mid-Atlantic waters are used as a migratory pathway from the spring and summer feeding/nursery areas to the winter calving grounds off the coast of Georgia and Florida.

NMFS designated right whale critical habitat on June 3, 1994 (59 FR 28793) to help protect important right whale foraging and calving areas within the U.S. These include the waters of Cape Cod Bay and the Great South Channel off the coast of Massachusetts, and waters off the coasts of southern Georgia and northern Florida. In 1993, Canada's Department of Fisheries declared two conservation areas for right whales; one in the Grand Manan Basin in the lower Bay of Fundy, and a second in Roseway Basin between Browns and Baccaro Banks (Canadian Recovery Plan for the North Atlantic Right Whale 2000).

The northern right whale was listed as endangered throughout its range on June 2, 1970 under the ESA. The current population is considered to be at a low level and the species remains designated as endangered (Waring et al. 2008). A Recovery plan has been published and currently is in effect (NMFS 1991). This is a strategic stock because the average annual fishery-related mortality and serious injury from all fisheries exceeds the PBR.

The western North Atlantic population of right whales was estimated to be 295 individuals in 1998 (Waring et al. 2008). An updated analysis using the same method gave an updated estimate of 299 animals in 1998. A review of the photo-id recapture database on June 15, 2006, indicated that 313 individually recognized whales were known to be alive in 2002 (Waring et al. 2008). PBR for this stock is zero.

Right whales may be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries. However, the major known sources of anthropogenic mortality and injury of right whales clearly are ship strikes and entanglement in commercial fishing gear. Waring et al. (2008) provide a detailed description of the annual human related mortalities of right whales.

Humpback Whale

The humpback whale was listed as endangered throughout its range on June 2, 1970. Humpback whales calve and mate in the West Indies and migrate to feeding areas in the northwestern Atlantic during the summer months. Six separate feeding areas are utilized in northern waters after their return (Waring et al. 2002). Only one of these feeding areas, the GOM, lies within U.S. waters and is within the action area of this FMP. Most of the humpbacks that forage in the GOM visit Stellwagen Bank and the waters of Massachusetts and Cape Cod Bays. Sightings are most frequent from mid-March through November between 41º N and 43º

N, from the Great South Channel north along the outside of Cape Cod to Stellwagen Bank and Jeffreys Ledge (CeTAP 1982), and peak in May and August. Small numbers of individuals may be present in this area year-round. They feed on a number of species of small schooling fishes, particularly sand lance and Atlantic herring, by targeting fish schools and filtering large amounts of water for their associated prey. Humpback whales have also been observed feeding on krill (Wynne and Schwartz 1999).

Various papers (Barlow & Clapham 1997; Clapham et al. 1999) summarized information gathered from a catalogue of photographs of 643 individuals from the western North Atlantic population of humpback whales. These photographs identified reproductively mature western North Atlantic humpbacks wintering in tropical breeding grounds in the Antilles, primarily on Silver and Navidad Banks, north of the Dominican Republic. The primary winter range also includes the Virgin Islands and Puerto Rico (Waring et al. 2002). In general, it is believed that calving and copulation take place on the winter range. Calves are born from December through March and are about 4 meters at birth. Sexually mature females give birth approximately every 2 to 3 years. Sexual maturity is reached between 4 and 6 years of age for females and between 7 and 15 years for males. Size at maturity is about 12 meters.

Humpback whales use the mid-Atlantic as a migratory pathway, but it may also be an important feeding area for juveniles. Since 1989, observations of juvenile humpbacks in the mid-Atlantic have been increasing during the winter months, peaking January through March (Swingle et al. 1993). Biologists speculate that non-reproductive animals may be establishing a winter feeding range in the mid-Atlantic since they are not participating in reproductive behavior in the Caribbean. Swingle et al. (1993) identified a shift in distribution of juvenile humpback whales in the nearshore waters of Virginia, primarily in winter months. Those whales using this mid-Atlantic area that have been identified were found to be residents of the GOM and Atlantic Canada (Gulf of St. Lawrence and Newfoundland) feeding groups, suggesting a mixing of different feeding stocks in the mid-Atlantic region. A shift in distribution may be related to winter prey availability. Studies conducted by the Virginia Marine Science Museum indicate that these whales are feeding on, among other things, bay anchovies and menhaden. In concert with the increase in mid-Atlantic whale sightings, strandings of humpback whales have increased between New Jersey and Florida since 1985. Strandings were most frequent during September through April in North Carolina and Virginia waters, and were comprised primarily of juvenile humpback whales of no more than 11 meters in length (Wiley et al. 1995). Six of 18 humpbacks for which the cause of mortality was determined were killed by vessel strikes. An additional humpback had scars and bone fractures indicative of a previous vessel strike that may have contributed to the whale's mortality. Sixty percent of those mortalities that were closely investigated showed signs of entanglement or vessel collision.

New information has recently become available on the status and trends of the humpback whale population in the North Atlantic. Although current and maximum net productivity rates are unknown at this time, the Gulf of Maine stock has been steadily increasing (Waring et al. 2008). The minimum population estimate is the lower limit of the two-tailed 60% confidence interval of the lognormally distributed best abundance estimate. This is equivalent to the 20th percentile of the log-normal distribution as specified by Wade and Angliss (1997). The best estimate of abundance for Gulf of Maine humpback whales is 847 (CV=0.55). The minimum population estimate for this stock is 549 animals (Waring et al. 2008).

PBR is the product of minimum population size (549 animals), one-half the maximum productivity rate, and a "recovery" factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). The maximum productivity rate is the default value of 0.04. The "recovery" factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP) is assumed to be 0.10 because this stock is listed as an endangered species under the ESA. PBR for the Gulf of Maine humpback whale stock is 1.1 whales (Waring et al. 2008).

The major known sources of anthropogenic mortality and injury of humpback whales include entanglement in commercial fishing gear and ship strikes. Waring et al. (2008) provide a detailed description of the annual human related mortalities of humpback whales. Humpback whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

Fin Whale

Fin whales inhabit a wide range of latitudes between 20-75°N and 20-75°S (Perry et al. 1999). Fin whales spend the summer feeding in the relatively high latitudes of both hemispheres, particularly along the cold eastern boundary currents in the North Atlantic and North Pacific Oceans and in Antarctic waters (IWC 1992). Most migrate seasonally from relatively high-latitude Arctic and Antarctic feeding areas in the summer to relatively low-latitude breeding and calving areas in the winter (Perry et al. 1999).

As in the case of right and humpback whales, fin whale populations were heavily affected by commercial whaling. However, commercial exploitation of fin whales occurred much later than for right and humpback whales. Although some fin whales were taken as early as the 17th century by the Japanese using a fairly primitive open-water netting technique (Perry et al. 1999) and were hunted occasionally by sailing vessel whalers in the 19th century (Mitchell and Reeves 1983), wide-scale commercial exploitation of fin whales did not occur until the 20th century when the use of steam power and harpoon- gun technology made exploitation of this faster, more offshore species feasible. In the southern hemisphere, over 700,000 fin whales were landed in the 20th century. More than 48,000 fin whales were taken in the North Atlantic between 1860 and 1970 (Perry et al. 1999). Fisheries existed off of Newfoundland, Nova Scotia, Norway, Iceland, the Faroe Islands, Svalbard (Spitsbergen), the islands of the British coasts, Spain and Portugal. Fin whales were rarely taken in U.S. waters, except when they ventured near the shores of Provincetown, MA, during the late 1800's (Perry et al. 1999).

In the North Atlantic today, fin whales are widespread and occur from the Gulf of Mexico and Mediterranean Sea northward to the edges of the arctic pack ice (Waring et al. 2008). A number of researchers have suggested the existence of fin whale subpopulations in the North Atlantic. Mizroch et al. (1984) suggested that local depletions resulting from commercial overharvesting supported the existence of North Atlantic fin whale subpopulations. Others have used genetics information to provide support for the belief that there are several subpopulations of fin whales in the North Atlantic and Mediterranean (Bérubé et al. 1998). In 1976, the IWC's Scientific Committee proposed seven stocks for North Atlantic fin whales. These are: (1) North Norway; (2) West Norway-Faroe Islands; (3) British Isles-Spain and Portugal; (4) East Greenland-Iceland; (5) West Greenland; (6) Newfoundland-Labrador; and (7) Nova Scotia (Perry et al. 1999). However, it is uncertain whether these stock boundaries define biologically isolated units (Waring et al. 2002). The NMFS has designated one stock of fin whale for U.S. waters of the North Atlantic where the species is commonly found from Cape Hatteras northward.

The overall distribution of fin whales may be based on prey availability. This species preys opportunistically on both invertebrates and fish. The predominant prey of fin whales varies greatly in different geographical areas depending on what is locally available. In the western North Atlantic fin whales feed on a variety of small schooling fish (i.e., herring, capelin, sand lance) as well as squid and planktonic crustaceans. As with humpback whales, fin whales feed by filtering large volumes of water for their prey through their baleen plates. Photo identification studies in western North Atlantic feeding areas, particularly in Massachusetts Bay, have shown a high rate of annual return by fin whales, both within years and between years (Seipt et al. 1990).

The major known sources of anthropogenic mortality and injury of fin whales include ship strikes and entanglement in commercial fishing gear. However, many of the reports of mortality cannot be attributed to a particular source. Fin whales may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including the operation of commercial fisheries.

The fin whale was listed as endangered throughout its range on June 2, 1970 under the ESA. Hain et al. (1992) estimated that about 5,000 fin whales inhabit the northeastern United States continental shelf waters. Waring et al. (2008) present a more recent abundance estimate of 2,269 (CV=0.37) and minimum population estimate of 1,678 for fin whales in the western North Atlantic. PBR for the western North Atlantic fin whale is 3.4 animals. For the period 2001-2005, Waring et al. (2008) report that the average annual rate of human-caused mortality and serious injury to fin whales was 2.4 animals per year.

Blue Whale

Like the fin whale, blue whales occur worldwide and are believed to follow a similar migration pattern from northern summering grounds to more southern wintering areas (Perry et al. 1999). Three subspecies have been identified: *Balaenoptera musculus musculus, B.m. intermedia*, and *B.m. brevicauda* (Waring et al. 2002). Only *B. musculus* occurs in the northern hemisphere. Blue whales range in the North Atlantic extends from the subtropics to Baffin Bay and the Greenland Sea. The IWC currently recognizes these whales as one stock (Perry et al. 1999).

Blue whales are only occasional visitors to east coast U.S. waters. They are more commonly found in Canadian waters, particularly the Gulf of St. Lawrence where they are present for most of the year, and other areas of the North Atlantic. It is assumed that blue whale distribution is governed largely by food requirements. In the Gulf of St. Lawrence, blue whales appear to predominantly feed on *Thysanoessa raschii* and *Meganytiphanes norvegica*. In the eastern North Atlantic, *T. inermis* and *M. norvegica* appear to be the predominant prey.

There is limited information on the factors affecting natural mortality of blue whales in the North Atlantic. Ice entrapment is known to kill and seriously injure some blue whales, particularly along the southwest coast of Newfoundland, during late winter and early spring. Habitat degradation has been suggested as possibly affecting blue whales such as in the St. Lawrence River and the Gulf of St. Lawrence where habitat has been degraded by acoustic and chemical pollution. However, there is no data to confirm that blue whales have been affected by such habitat changes (Perry et al. 1999).

Entanglement in fishing gear, and ship strikes are believed to be the major sources of anthropogenic mortality and injury of blue whales. However, confirmed deaths or serious injuries from either are few. In 1987, concurrent with an unusual influx of blue whales into the Gulf of Maine, one report was received from a whale watch boat that spotted a blue whale in the southern Gulf of Maine entangled in gear described as probable lobster pot gear. A second animal found in the Gulf of St. Lawrence apparently died from the effects of an entanglement. In March 1998, a juvenile male blue whale was carried into Rhode Island waters on the bow of a tanker. The cause of death was determined to be due to a ship strike, although not necessarily caused by the tanker on which it was observed, and the strike may have occurred outside the U.S. EEZ (Waring et al. 2002). No recent entanglements of blue whales have been reported from the U.S. Atlantic. Other impacts noted above for other baleen whales may occur.

Sei Whale

Sei whales are a widespread species in the world's temperate, subpolar and subtropical and even tropical marine waters. However, they appear to be more restricted to temperate waters than other balaenopterids (Perry et al. 1999). The IWC recognized three stocks in the North Atlantic based on past whaling operations as opposed to biological information: (1) Nova Scotia; (2) Iceland Denmark Strait; (3) Northeast Atlantic (Donovan 1991 in Perry et al. 1999). Mitchell and Chapman (1977) suggested that the sei whale population in the western North Atlantic consists of two stocks, a Nova Scotian Shelf stock and a Labrador Sea stock. The Nova Scotian Shelf stock includes the continental shelf waters of the northeastern United States, and extends northeastward to south of Newfoundland. The IWC boundaries for this stock are from the U.S. east coast to Cape Breton, Nova Scotia and east to longitude 42° (Waring et al. 2002). This is the only sei whale stock within the FMP management area.

Sei whales winter in warm temperate or subtropical waters and summer in more northern latitudes. The species occurs in deep water throughout their range, typically over the continental slope or in basins situated between banks. In the northwest Atlantic, the whales travel along the eastern Canadian coast in autumn, June and July on their way to and from the Gulf of Maine and Georges Bank where they occur in winter and spring. Within the action area, the sei whale is most common on Georges Bank and into the Gulf of Maine/Bay of Fundy region during spring and summer, primarily in deeper waters. Individuals may range as far south as North Carolina. It is important to note that sei whales are known for inhabiting an area for weeks at a time then disappearing for year or even decades; this has been observed all over the world, including in the southwestern GOM in 1986. The basis for this phenomenon is not clear.

There are insufficient data to determine trends of the sei whale population. Waring et al. (2008) present a minimum population estimate of 128 fin whales in the western North Atlantic. PBR for the Nova Scotia stock of sei whales is 0.3 animals. Few instances of injury or mortality of sei whales due to entanglement or vessel strikes have been recorded in U.S. waters. Entanglement is not known to impact this species in the U.S. Atlantic, possibly because sei whales typically inhabit waters further offshore than most commercial fishing operations, or perhaps entanglements do occur but are less likely to be observed. Waring et al. (2008) reported that there were no fishery-related mortalities or serious injuries to fin whales observed by NMFS for the period 2001-2005. A small number of ship strikes of this species have been recorded. The most recent documented incident occurred in 1994 when a carcass was brought in on the bow of a container ship in Charlestown, Massachusetts. Other impacts noted above for other baleen whales may also occur. Due to the deep-water distribution of this species, interactions that do occur are less likely to be observed or reported than those involving right, humpback, and fin whales that often frequent areas within the continental shelf.

Sperm Whale

Sperm whales inhabit all ocean basins, from equatorial waters to polar regions (Perry et al. 1999). In the western North Atlantic they range from Greenland to the Gulf of Mexico and the Caribbean. The sperm whales that occur in the western North Atlantic are believed to represent only a portion of the total stock (Blaylock et al. 1995). Sperm whales generally occur in waters greater than 180 meters in depth. While they may be encountered almost anywhere on the high seas, their distribution shows a preference for continental margins, sea mounts, and areas of upwelling, where food is abundant (Leatherwood and Reeves 1983). Sperm whales in both hemispheres migrate to higher latitudes in the summer for feeding and return to lower latitude waters in the winter where mating and calving occur. Mature males typically range to much higher latitudes than mature females and immature animals but return to the lower latitudes in the winter to breed (Perry et al. 1999).

Waring et al. (2008) suggest sperm whale distribution is closely correlated with the Gulf Stream edge. Like swordfish, which feed on similar prey, sperm whales migrate to higher latitudes during summer months, when they are concentrated east and northeast of Cape Hatteras. In the U.S. EEZ, sperm whales occur on the continental shelf edge, over the continental slope, and into the mid-ocean regions, and are distributed in a distinct seasonal cycle; concentrated east-northeast of Cape Hatteras in winter and shifting northward in spring when whales are found throughout the mid-Atlantic Bight. Distribution extends further northward to areas north of Georges Bank and the Northeast Channel region in summer and then south of New England in fall, back to the mid-Atlantic Bight (Waring et al. 2008).

Total numbers of sperm whales off the USA or Canadian Atlantic coast are unknown, although eight estimates from selected regions of the habitat do exist for select time periods. The best estimate of abundance for the North Atlantic stock of sperm whales is 4,804 (CV=0.38). The minimum population estimate for the western North Atlantic sperm whale is 3,539 (Waring et al. 2008).

Few instances of injury or mortality of sperm whales due to human impacts have been recorded in U.S. waters. Because of their generally more offshore distribution and their benthic feeding habits, sperm whales are less subject to entanglement than right or humpback whales. Sperm whales are also struck by ships. In May 1994 a ship struck sperm whale was observed south of Nova Scotia (Waring et al. 2002). A sperm whale was also seriously injured as a result of a ship strike in May 2000 in the western Atlantic. Due to the offshore distribution of this species, interactions that do occur are less likely to be reported than those involving right, humpback, and fin whales that more often occur in nearshore areas. Other impacts noted above for baleen whales may also occur. Due to their offshore distribution, sperm whales tend to strand less often than, for example, right whales and humpbacks.

Hawksbill Sea Turtle

The following is a summary of information on the Hawksbill sea turtle made available by NMFS at the following website: http://www.nmfs.noaa.gov/pr/species/turtles/hawksbill.html

The hawksbill occurs in tropical and subtropical seas of the Atlantic, Pacific and Indian Oceans. The species is widely distributed in the Caribbean Sea and western Atlantic Ocean, with representatives of at least some life history stages regularly occurring in southern Florida and the northern Gulf of Mexico (especially Texas); in the Greater and Lesser Antilles; and along the Central American mainland south to Brazil. Within the United States, hawksbills are most common in Puerto Rico and its associated islands, and in the U.S. Virgin Islands. In the continental U.S., the species is recorded from all the gulf states and from along the eastern seaboard as far north as Massachusetts, with the exception of Connecticut, but sightings north of Florida are rare.

The hawksbill is a small to medium-sized sea turtle. In the U.S. Caribbean, nesting females average about 62-94cm in straight carapace length. Weight is typically to 80 kg in the wider Caribbean, with a record weight of 127 kg. Hatchlings average about 42 mm straight carapace length and range in weight from 13.5-19.5 g. The following characteristics distinguish the hawksbill from other sea turtles: two pairs of prefrontal scales; thick, posteriorly overlapping scutes on the carapace; four pairs of coastal scutes; two claws on each flipper; and a beak-like mouth. The carapace is heart-shaped in very young turtles, and becomes more elongate or subovate with maturity. Its lateral and posterior margins are sharply serrated in all but very old individuals.

Hawksbills utilize different habitats at different stages of their life cycle. Posthatchling hawksbills occupy the pelagic environment, taking shelter in weedlines that accumulate at convergence points. Hawksbills reenter coastal waters when they reach approximately 20-25 cm carapace length. Coral reefs are widely recognized as the resident foraging habitat of juveniles, subadults and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. The ledges and caves of the reef provide shelter for resting both during the day and night. Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponge growth. Hawksbills are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore of continents where coral reefs are absent. In Texas, juvenile hawksbills are associated with stone jetties.

Hawksbills utilize both low- and high-energy nesting beaches in tropical oceans of the world. Both insular and mainland nesting sites are known. Hawksbills will nest on small pocket beaches, and, because of their small body size and great agility, can traverse fringing reefs that limit access by other species. They exhibit a wide tolerance for nesting substrate type. Nests are typically placed under vegetation.

Incidental catch of hawksbill turtles during fishing operations is an unquantified and potentially significant source of mortality. Gill nets, longlines and shrimp trawls all take turtles in Gulf of Mexico waters. The extent to which hawksbills are killed or debilitated after becoming entangled in marine debris are unknown, but it is believed to be a serious and growing problem. Hawksbills have been reported entangled in monofilament gill nets, "fish nets", fishing line and rope. Hawksbill turtles eat a wide variety of debris such as plastic bags, plastic and styrofoam pieces, tar balls, balloons and plastic pellets. Effects of consumption include interference in metabolism or gut function, even at low levels of ingestion, as well as absorption of toxic byproducts.

The most recent 5-year hawksbill turtle status review was completed in 2007 (NMFS & USFWS 2007e) which included an examination of both recent and historic information on 83 hawksbill nesting sites distributed among 10 ocean regions around the world. Historic trends were determined for 58 of the 83 sites and all 58 (100%) showed a decrease in nesting abundance over time. Recent trends determined for 42 sites were more optimistic, with 10 (24%) increasing, 3 (7%) stable, and 29 (69%) in decline. Based on the best available information, NMFS & USFWS (2007e) concluded that the hawksbill turtle should not be delisted or reclassified under the ESA. The review also concluded that available information indicates that an analysis and review of the species should be conducted in the future to determine if the application of the Distinct Population Segment policy under the ESA to the hawksbill turtle is warranted.

Shortnose Sturgeon

Shortnose sturgeon occur in large rivers along the western Atlantic coast from the St. Johns River, Florida (possibly extirpated from this system), to the Saint John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while northern populations are amphidromous (NMFS 1998). Population sizes vary across the species' range with the smallest populations occurring in the Cape Fear and Merrimack Rivers and the largest populations in the Saint John and Hudson Rivers (Dadswell 1979; NMFS 1998).

Shortnose sturgeon are benthic and mainly inhabit the deep channel sections of large rivers. They feed on a variety of benthic and epibenthic invertebrates including mollusks, crustaceans (amphipods, chironomids, isopods), and oligochaete worms (Vladykov and Greeley 1963; Dadswell 1979). Shortnose sturgeon are long-lived (30 years) and mature at relatively old ages.

In northern areas, males reach maturity at 5-10 years, while females reach sexual maturity between 7 and 13 years.

In the northern part of their range, shortnose sturgeon exhibit three distinct movement patterns that are associated with spawning, feeding, and overwintering periods. In spring, as water temperatures rise above 8° C, pre-spawning shortnose sturgeon move from overwintering grounds to spawning areas. Spawning occurs from mid/late April to mid/late May. Post-spawned sturgeon migrate downstream to feed throughout the summer.

As water temperatures decline below 8° C again in the fall, shortnose sturgeon move to overwintering concentration areas and exhibit little movement until water temperatures rise again in spring (NMFS 1998). Young-of-the-year shortnose sturgeon are believed to move downstream after hatching (NMFS 1998) but remain within freshwater habitats. Older juveniles tend to move downstream in fall and winter as water temperatures decline and the salt wedge recedes. Juveniles move upstream in spring and feed mostly in freshwater reaches during summer.

Shortnose sturgeon spawn in freshwater sections of rivers, typically below the first impassable barrier on the river (e.g., dam). Spawning occurs over channel habitats containing gravel, rubble, or rock-cobble substrates (NMFS 1998). Environmental conditions associated with spawning activity include decreasing river discharge following the peak spring freshet, water temperatures ranging from 9 -12 C, and bottom water velocities of 0.4 - 0.7 m/sec (NMFS 1998).

Atlantic salmon

The recent ESA-listing for Atlantic salmon covers the wild population of Atlantic salmon found in rivers and streams from the lower Kennebec River north to the U.S.-Canada border. These include the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot Rivers and Cove Brook. Atlantic salmon are an anadromous species with spawning and juvenile rearing occurring in freshwater rivers followed by migration to the marine environment. Juvenile salmon in New England rivers typically migrate to sea in May after a two to three year period of development in freshwater streams, and remain at sea for two winters before returning to their U.S. natal rivers to spawn from mid October through early November. While at sea, salmon generally undergo an extensive northward migration to waters off Canada and Greenland. Data from past commercial harvest indicate that post-smolts overwinter in the southern Labrador Sea and in the Bay of Fundy. The numbers of returning wild Atlantic salmon within the Gulf of Maine Distinct Population Segment (DPS) are perilously small with total run sizes of approximately 150 spawners occurring in 1999 (Baum 2000). Although capture of Atlantic salmon has occurred in commercial fisheries (usually otter trawl or gillnet gear) or by research/survey, no salmon have been reported captured in the Atlantic surfclam and ocean quahog fisheries.

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