

**PUBLIC HEARING SUMMARY**  
**AMENDMENT 18 TO THE COASTAL MIGRATORY PELAGICS  
FISHERY MANAGEMENT PLAN TO REVISE THE SOUTH  
ATLANTIC MIGRATORY GROUP KING AND SPANISH  
MACKEREL TACs, AND SPANISH MACKEREL TRIP LIMITS  
(Including EA, RIR, IRFA)**

**FEBRUARY 2007**

South Atlantic Fishery Management Council  
4055 Faber Place Drive, Suite 201  
North Charleston, South Carolina 29405  
(843) 571-4366 / FAX (843) 769-4520  
Toll Free (866) SAFMC-10  
email: [safmc@safmc.net](mailto:safmc@safmc.net)  
<http://www.safmc.net>

Gulf of Mexico Fishery Management Council  
2203 North Lois Avenue, Suite 1100  
Tampa, Florida 33607  
(813) 384-1630 / FAX (813) 348-1711  
email: [gulfcouncil@gulfcouncil.org](mailto:gulfcouncil@gulfcouncil.org)

Mid-Atlantic Fishery Management Council  
Suite 2115 Federal Bldg.  
300 S. New Street  
Dover, Delaware 19904-6726  
(302) 674-2331 / FAX (302) 674-5399  
email: [info@mafmc.org](mailto:info@mafmc.org)

National Marine Fisheries Service  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701  
(727) 824-5301 / FAX (727) 824-5308  
<http://sero.nmfs.noaa.gov>

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## Acronyms/Abbreviations used in this document

ABC	Acceptable Biological Catch
AP	Advisory Panel
B	Biomass
BMSY	Stock biomass capable of producing maximum sustainable yield
CEQ	Council on Environmental Quality
cm	Centimeters
CMP	Coastal Migratory Pelagics
CZMA	Coastal Zone Management Act
DSEIS/SEIS	Draft/Supplemental Environmental Impact Statement
EA	Environmental Assessment
EEZ	Exclusive Economic Zone (also known as federal waters)
EFH	Essential Fish Habitat
F	Rate of instantaneous fishing mortality, a measure of the rate at which fish are removed from the population by fishing.
FL	Fork Length
FMSY	F that can sustain maximum sustainable yield
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
IFQ	Individual Fishing Quota
ITQ	Individual Transferable Quota
m	Meters
MAFMC	Mid-Atlantic Fishery Management Council
MFMT	Maximum Fishing Mortality Threshold
MP	Million Pounds
MSAP	Mackerel Stock Assessment Panel
M-SFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	Minimum Stock Size Threshold
MSY	Maximum Sustainable Yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OY	Optimum Yield
RA	Regional Administrator (NMFS Southeast Regional Office) (formerly Regional Director)
RFA	Regulatory Flexibility Act of 1980
RIR	Regulatory Impact Review
SAFMC	South Atlantic Fishery Management Council
SERO	Southeast Regional Office
SFD	Sustainable Fisheries Division
SPR	Spawning Potential Ratio
SSC	Scientific and Statistical Committee
SEFSC	Southeast Fisheries Science Center
TAC	Total Allowable Catch
TL	Total Length

## **Executive Summary**

To prevent overfishing, continue sustainable management of the resource in the Atlantic groups of king and Spanish mackerel, and to extend the current trip limits for Spanish mackerel to track the new fishing year as stated in Amendment 15 (in June 2006), the SAFMC is proposing to make several changes to existing management measures.

The 2004 SEDAR 5 Assessment provided updated MSY, ABC, etc. values for Gulf and Atlantic migratory groups of king mackerel based on counting 100% of fish in the mixing zone as Gulf king mackerel. Values were also estimated based on counting 50% of fish in the mixing zone as Gulf king mackerel. The new total ABC, estimated based on the top end of the ABC ranges (based on fishing at the OY level) and a 50/50 mixing rate for both Gulf and Atlantic migratory groups, is 16.7 million pounds. If the SAFMC and GMFMC both continue with current TAC levels (10.0 and 10.2 respectively), this could result in overfishing if the fisheries harvested their full shares leading to an overfished stock status for each migratory group. This amendment proposes to reduce the TAC for Atlantic migratory group king mackerel to maintain the stock at a biomass level that will produce the Optimum Yield (OY).

The 2003 Report of the Mackerel Stock Assessment Panel (MSAP 2003) estimated a new ABC range for Atlantic migratory group Spanish mackerel. The midpoint of the range (6.7 million pounds) is slightly lower than the current TAC (7.04 million pounds). While adherence to the current TAC would not result in overfishing, there would be an increase in the potential for overfishing to occur. This amendment proposes to reduce TAC for Atlantic migratory group Spanish mackerel.

The fishing season for Atlantic king and Spanish mackerel was changed from April 1 – March 31 to March 1 – end of February in Amendment 15 to prevent the possibility of multiple commercial fishery closures at the same time. (For example, the red porgy fishery is closed January through April, and the gag and black grouper fisheries are closed in March and April.) This amendment extends the commercial Spanish mackerel trip limits currently used under the old fishing year to the new fishing year. This is necessary in order to establish a trip limit for the months of March 1 - November 30 that was previously applied to April 1 - November 30. Other trip limits apply after November 30. Failure to make this change could result in unlimited harvests in March when the season begins.

The purpose of this amendment is to propose management measures for the south Atlantic coastal migratory pelagic fisheries to avoid and reduce the potential for overfishing to occur in the Atlantic king and Spanish mackerel fisheries and to align current trip limits with the new fishing year in the Atlantic Spanish mackerel fishery. The SAFMC initiated this amendment in June 2006 to reduce the TACs for Atlantic migratory groups of king and Spanish mackerel in reaction to new stock information provided through the 2004 SEDAR 5 Assessment (for king mackerel) and the 2003 Report of the MSAP (for Spanish mackerel).

**Action 1: Total Allowable Catch (TAC) for Atlantic migratory group king mackerel**

Alternative 1: No action. Currently TAC = 10.0 million pounds based on an ABC of 8.9 – 13.3 million pounds

Alternative 2: TAC = 7.1 million pounds which is the best point estimate of the ABC range (5.3 – 9.6 million pounds) (**Preferred**)

Alternative 3: TAC = 5.3 million pounds which is the lowest value within the ABC range (5.3 – 9.6 million pounds)

Alternative 4: TAC = 9.6 million pounds which is the top end of the ABC range (5.3 – 9.6 million pounds)

Under **Alternatives 1, 2, and 4** the expected commercial and recreational catches would be below the commercial quota and the recreational allocation. Consequently, revenues are not expected to vary significantly from last year's revenue as a result of direct and indirect effects of **Alternatives 1, 2, and 4**.

If the entire TAC under **Alternative 3** were landed, this would result in a revenue loss to commercial fishermen of approximately \$637,000 following a closure of the commercial fishery after harvesting the commercial quota. The expected commercial revenue loss is a decrease of about 15% from 2006/07 estimated revenue levels (\$4.14 million). The difference between the recreational allocation under **Alternative 3** and the estimated recreational landings for 2006/07 is a loss to recreational fishermen of about 446,000 pounds. This indicates a loss in consumer surplus of about \$12,625 based on valuations calculated by Haab *et al.* (2001).

**Alternative 3** specifies a situation under which a fishery closure could occur. In general, the methodologies used and described in Section 7 of this document, indicate the commercial quota would likely be reached sometime in November or December or before. This would have negative short-term social impacts on king mackerel fishermen, their families, fish supply houses, support industries, and the communities they are located in, through increased financial strain, a decreased ability to retain employees, and a decrease in consumer spending. However, **Alternative 3** would have positive social impacts through increases in non-use values of the resource, such as bequest<sup>1</sup> and existence values<sup>2</sup>. The recreational fishery is expected to reach the recreational allocation in September or October.

Regarding biological impacts, the proposed TAC (**Alternative 2**) would prevent overfishing; **Alternative 3** would have a higher probability of preventing overfishing while **Alternative 4** would have a lower probability. No action (**Alternative 1**) would result in overfishing if the full TAC was harvested. There are no expected changes to the physical environment.

Administrative costs under **Alternative 3** would likely be slightly higher than under **Alternative 1**.

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1 Value of leaving use and non-use value to offspring.

2 Value of knowledge of continued existence.

**Action 2: Total Allowable Catch (TAC) for Atlantic migratory group Spanish mackerel**

Alternative 1: No action. Currently TAC = 7.04 million pounds based on an ABC of 5.7 – 9.0 million pounds

Alternative 2: TAC = 6.7 million pounds which is the best point estimate of the ABC range (5.2 – 8.4 million pounds) (**Preferred**)

Alternative 3: TAC = 5.2 million pounds which is the lowest value within the ABC range (5.2 – 8.4 million pounds)

Alternative 4: TAC = 8.4 million pounds which is the top end of the ABC range (5.2 – 8.4 million pounds)

Under **Alternatives 1, 2, and 4**, expected catches would be below the commercial quotas and the recreational allocations. Consequently, revenues are not expected to vary significantly from last year's revenue as a result of direct and indirect effects of **Alternative 1, 2, and 4**.

If the entire TAC under **Alternative 3** were landed, this would result in a revenue loss of approximately \$588,000 dollars for the commercial sector (based on 2005/06 average ex-vessel price), a decrease of about 22% of total ex-vessel revenue from the Spanish mackerel fishery in 2006/07 (\$2.7 million). The recreational allocation under **Alternative 3** is approximately 560,000 pounds greater than the expected recreational catch in 2006/07.

**Alternative 3** specifies a situation under which a commercial fishery closure could occur. Based on historical data, the **Alternative 3** commercial quota would likely be reached sometime in February or sooner. This would likely result in negative short-term social impacts for Spanish mackerel fishermen and their families as well as fish houses and the supply industries the Spanish mackerel fishery supports due to increased financial strain, a decrease in the ability of fish houses to retain employees year round, and decreased consumer spending in affected communities. However, non-use values of the resource, such as bequest and existence values, are expected to increase with the **Alternative 2 and Alternative 3** adjustment to the TAC based on the new stock assessments due to the perception that the resource is being conservatively managed. **Alternative 3** is expected to provide a greater increase in non-use values than **Alternative 2**. **Alternative 4** is expected to cause a decrease in non-use values due to the increase in the **Alternative 4** TAC compared to the **Alternative 1** TAC.

Regarding biological impacts, the proposed TAC (**Alternative 2**) would prevent overfishing: **Alternatives 1 and 4** would have a slightly higher probability of resulting in overfishing. **Alternative 3** would provide the highest level of biological protection. There are no expected changes to the physical environment.

Administrative costs under **Alternative 3** would likely be slightly higher than under **Alternative 1**.

**Action 3: Commercial Atlantic migratory group Spanish mackerel trip limits**

Alternative 1: No action

Alternative 2: Change the start date for the 3,500 pound trip limit to March 1 and the end of the fishing year to the end of February (**Preferred**)

**Alternatives 1 and 2** are identical except that **Alternative 2** specifies for the 3,500 trip limit to begin in March instead of April. The Council chose **Alternative 2** as the preferred. Under **Alternatives 1 and 2**, after December 1<sup>st</sup> and until 75% of the adjusted allocation is taken, vessels are able to take an unlimited amount on weekdays and 1,500 pounds on weekend days. More restrictive trip limits apply after 75% of the adjusted allocation is taken until the end of the fishing season. **Alternative 2** enables fishermen to fish under the 3,500-pound trip limit during a month when there are few other fishing opportunities and at a time of year (Lent) when ex-vessel prices are typically at their highest. This provides increased total landings stability for communities and increased financial stability for fishermen and their families.

**Alternative 2** is not expected to affect the biological environment because it will not change the methods or gears used for harvest, only the amount landed per trip during the month of March. Changing the trip limit will not impact stock status. Biological protection is provided through setting the TAC and preventing overages. There are no expected changes to the physical environment.

Administrative impacts under **Alternative 2** are expected to be slightly higher than administrative impacts under **Alternative 1**.

**Summary of Environmental Consequences**

The potential consequences of each alternative within each action are illustrated in the following table. For a full discussion of the environmental consequences, see Section 7. Plus (+) indicates an overall positive benefit, minus (-) indicates an overall negative impact, and “na” indicates not applicable. If an alternative is not expected to have an impact, this is indicated with a “0”.

**Summary of Environmental Consequences**

		Preferred	Biological	Economic	Social	Administrative
Action 1	Alt 1	na	na	na	na	na
	Alt 2 vs Alt 1	<b>X</b>	+	0	-/+	0
	Alt 3 vs Alt 1		+	-/+	-/+	-
	Alt 4 vs Alt 1		-	+/-	+/-	0
Action 2	Alt 1	na	na	na	na	na
	Alt 2 vs Alt 1	<b>X</b>	+	0	-/+	0
	Alt 3 vs Alt 1		+	-/+	-/+	-
	Alt 4 vs Alt 1		-	+/-	+/-	0
Action 3	Alt 1	na	na	na	na	na
	Alt 2 vs Alt 1	<b>X</b>	0	+	+	-

Note: Cells in the economic and social categories sometimes show two symbols. The first symbol indicates potential short-term economic and social impacts to the Nation, fishermen and their families, fish houses, supply industries, and fishing communities. The second symbol after the slash indicates potential long-term economic and social impacts (including non-use values) to the Nation, fishermen and their families, fish houses, supply industries, and fishing communities.

## Environmental Assessment (EA) Cover Sheet

South Atlantic Fishery Management Council  
4055 Faber Place Drive, Suite 201  
North Charleston, SC 29405  
843-571-4366  
843-769-4520 (FAX)  
<http://www.safmc.net>  
[MackerelAmendment18@safmc.net](mailto:MackerelAmendment18@safmc.net)  
Contact person: Kate Quigley

National Marine Fisheries Service  
Southeast Regional Office  
263 13th Avenue South  
St. Petersburg, Florida 33701  
727-824-5305  
727-824-5308 (FAX)  
<http://sero.nmfs.noaa.gov>  
Contact person: Steve Branstetter

Mid-Atlantic Fishery Management Council  
Suite 2115 Federal Bldg.  
300 S. New Street  
Dover, Delaware 19904-6726  
302-674-2331  
302-674-5399 (FAX)  
<http://www.mafmc.org>

### Name of Action

South Atlantic Fishery Management Council Mackerel Actions for the Coastal Migratory Pelagics Fishery Management Plan

### Type of Action

Administrative  
 Draft

Legislative  
 Final

### Summary

To prevent overfishing, continue sustainable management of the resource in the Atlantic groups of king and Spanish mackerel, and to extend the current trip limits for Spanish mackerel to track the new fishing year as stated in Amendment 15 (in June 2006), the SAFMC is proposing to:

- 1) Set the Atlantic migratory group king mackerel TAC at 7.1 million pounds,
- 2) Set the Atlantic migratory group Spanish mackerel TAC at 6.7 million pounds, and
- 3) Change the Atlantic migratory group Spanish mackerel trip limits to track the new fishing year (March 1 – end of February).

The 2004 SEDAR 5 Assessment provided updated MSY, ABC, etc. values for Gulf and Atlantic migratory groups of king mackerel based on counting 100% of fish in the mixing zone as Gulf king mackerel. Values were also estimated based on counting 50% of fish in the mixing zone as Gulf king mackerel. The new total ABC, estimated based on the top end of the ABC ranges (based on fishing at the OY level) and a 50/50 mixing rate for both Gulf and Atlantic migratory groups, is 16.7 million pounds. If the SAFMC and GMFMC both continue with current TAC levels (10.0 and 10.2 respectively), this could result in overfishing if the fisheries harvested their

full shares leading to an overfished stock status for each migratory group. This amendment proposes to reduce the TAC for Atlantic migratory group king mackerel to maintain the stock at a biomass level that will produce the Optimum Yield (OY).

The 2003 Report of the Mackerel Stock Assessment Panel (MSAP 2003) estimated a new ABC range for Atlantic migratory group Spanish mackerel. The midpoint of the range (6.7 million pounds) is slightly lower than the current TAC (7.04 million pounds). While adherence to the current TAC would not result in overfishing, there would be an increase in the potential for overfishing to occur. This amendment proposes to reduce TAC for Atlantic migratory group Spanish mackerel.

Amendment 15 established a new fishing year for Spanish mackerel from April 1 – March 31 to March 1 – end of February. For Atlantic group Spanish mackerel, the change in the fishing year was made to potentially ameliorate the possibility of closures in the mackerel fisheries during the month of March when fisheries for other species, such as some snapper grouper species, are closed. However, when the new fishing year was established, the trip limits were not adjusted to the new fishing year. This amendment proposes extending the trip limits currently used to track the new fishing year.

**Public hearing dates and locations. All hearings are scheduled to begin at 6:00 PM.**

1. March 6, 2007 - Jekyll Island Club, 371 Riverview Drive, Jekyll Island, GA 31527. 912/635-2600
2. March 12, 2007 - Hampton Inn St. Augustine Beach, 430 A1A Beach Boulevard, St. Augustine, FL 32080; phone 904/471-4000
3. March 13, 2007 – Hutchinson Island Marriott, 555 N.E. Ocean Boulevard, Stuart, FL 34996; phone 772/225-3700
4. March 14, 2007 – Sombrero Cay Club Resort, 19 Sombrero Boulevard, Marathon, FL 33050; phone 305/743-2250
5. March 18, 2007 – Hatteras Civic Center, Highway 12, Hatteras, NC 27943; phone 252/986-2810.
6. March 19, 2007 – Crystal Coast Civic Center, 3505 Arendell Street, Morehead City, NC 28557; phone 252/247-3883
7. March 20, 2007 – Shell Island Resort, 2700 N. Lumina Avenue, Wrightsville Beach, NC 28480; phone 910/256-8696
8. March 21, 2007 – Baywatch Resort, 2701 S. Ocean Boulevard, North Myrtle Beach, SC 29582; phone 843/272-4600
9. March 27, 2007 – Hampton Inn, 678 Citadel Haven Drive, Charleston, SC 29414; phone 843/573-1200

**Written comments will be accepted in the Council office through 5 p.m. on April 10, 2007.**

## **Fishery Impact Statement / Social Impact Assessment (FIS/SIA)**

Regulations impose restrictions on fishery participants, which can result in adverse effects on fishermen and fishing communities. This FIS/SIA evaluates the effects of reducing the Atlantic migratory group king and Spanish mackerel Total Allowable Catch (TAC) levels and changing the Atlantic migratory group Spanish mackerel trip limits.

Status quo management of the Atlantic migratory group king and Spanish mackerel resources would maintain the existing TAC levels at 10 million pounds (MP) and 7.04 MP, respectively. Given new stock assessment data for king and Spanish mackerel, the existing level of harvest could potentially lead to overfishing of the king and Spanish mackerel resources. As a consequence, the status quo alternatives would likely require more restrictive management in the future, resulting in foregone benefits and greater adverse socioeconomic impacts than would likely accrue from management attention at this time. There are four alternatives proposed each for the two actions exploring management measures for the TACs for Atlantic migratory group king and Spanish mackerel.

### Atlantic migratory group king mackerel TAC

Regarding management measures proposed for the Atlantic migratory group king mackerel TAC, **Alternatives 1** (10 MP), **2** (7.1 MP), and **4** (9.6 MP) have expected commercial and recreational catches below the commercial quota and the recreational allocation. Consequently, revenues are not expected to vary significantly from last year's revenue as a result of direct and indirect effects of **Alternatives 1, 2, and 4**. **Alternative 2** is expected to increase non-use values slightly and decrease short-term familial, fish house, support industry, and community social impacts slightly. **Alternative 4** is expected to have the same impact directions, but to a smaller extent than **Alternative 2**. **Alternative 3** (5.3 MP) could result in a revenue loss to commercial fishermen of approximately \$637,000 following a closure for commercial fishing from harvesting the commercial quota. The expected revenue loss is a decrease of about 15% from 2006/07 estimated revenue levels (\$4.14 million). The difference between the recreational allocation under **Alternative 3** and the estimated recreational landings for 2006/07 is a loss to recreational fishermen of about 446,000 pounds. This indicates a loss in consumer surplus of about \$12,625 based on valuations calculated by Haab *et al.* (2001). In addition, **Alternative 3** specifies a situation under which a commercial fishery closure could occur, probably sometime in November or December or before. The recreational sector is expected to reach the recreational allocation sometime in September or October.

Social impacts under **Alternative 3** are expected to be negative (in the short-term) for king mackerel fishermen and their families as well as fish houses, the supply industries the king mackerel fishery supports, and communities. King mackerel fishermen would experience lower annual revenues from king mackerel landings than under **Alternative 1**. This would increase financial strain for fishermen and their families and could decrease their fishing operation profit margins. Although this would be an incremental decrease in revenue, it would increase the probability that the fishing operation would go out of business or that some fishing families would need to incur additional debt to keep their businesses operational. Fish houses and supply industries would likely suffer some annual revenue losses that could decrease their profit margins. If an early closure occurs, the ability of fish houses and supply industries to retain

employees will be decreased. The communities dependent on king mackerel resources would likewise be impacted through decreased consumer spending. In the long-term, economic impacts are expected to be positive. Social impacts are expected to be positive for non-use values. Non-use values of the resource, such as bequest<sup>3</sup> and existence values<sup>4</sup>, are expected to increase with the **Alternative 2, Alternative 3, and Alternative 4** adjustments to TAC based on the new stock assessments due to the perception that the resource is being conservatively managed.

**Alternative 3** is expected to provide a greater increase in non-use values than **Alternative 2**.

**Alternative 4** is only expected to increase non-use values in a minor way, if at all.

#### Atlantic migratory group Spanish mackerel TAC

With regard to management measures proposed for the Atlantic migratory group Spanish mackerel TAC, under **Alternatives 1** (7.04 MP), **2** (6.7 MP), and **4** (8.4 MP), expected catches are below the commercial quotas and the recreational allocations. Consequently, revenues are not expected to vary significantly from last year's revenue as a result of direct and indirect effects of **Alternative 1, 2, and 4**. **Alternative 2** is expected to increase non-use values slightly and decrease short-term familial, fish house, support industry, and community social impacts slightly. **Alternative 4** is expected to decrease non-use values and increase short-term familial, fish house, support industry, and community social impacts. Under **Alternative 3** (5.2 MP), there is an expected revenue loss of approximately \$483,000 dollars for the commercial sector (based on 2005/06 average ex-vessel price), a decrease of about 19% of estimated total ex-vessel revenue from the Spanish mackerel fishery in 2006/07 (\$2.57 million). The recreational allocation under **Alternative 3** is about 560,000 pounds greater than the expected recreational catch in 2006/07. **Alternative 3** specifies a situation under which a commercial fishery closure could occur. Based on historical data, the **Alternative 3** commercial quota would likely be reached sometime in February or sooner. This would likely cause negative social impacts for Spanish mackerel fishermen and their families as well as fish houses and the supply industries the Spanish mackerel fishery supports. Spanish mackerel fishermen would experience slightly lower annual revenues from Spanish mackerel landings than under **Alternative 1**. This would increase financial strain for fishermen and their families and could decrease their fishing operation profit margins. Although this would be an incremental decrease in revenue, it would increase the probability that the fishing operation would go out of business or that some fishing families would need to incur additional debt to keep their businesses operational. Fish houses and supply industries would likely suffer some annual revenue losses that decrease their profit margins. If an early closure occurs, the ability of fish houses and supply industries to retain employees will be decreased. The communities dependent on Spanish mackerel resources would likewise be impacted through decreased consumer spending. In the long-term, economic impacts are expected to be positive. Non-use values of the resource, such as bequest and existence values, are expected to increase with the **Alternative 2 and Alternative 3** adjustment to the TAC based on the new stock assessments due to the perception that the resource is being conservatively managed. **Alternative 3** is expected to provide a greater increase in non-use values than **Alternative 2**. **Alternative 4** is expected to cause a decrease in non-use values due to the increase in the **Alternative 4** TAC compared to the **Alternative 1** TAC.

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3 Value of leaving use and non-use value to offspring.

4 Value of knowledge of continued existence.

### Atlantic migratory group Spanish mackerel trip limits

There are two alternative management measures proposed for the Atlantic migratory group Spanish mackerel trip limits. The first alternative would maintain the status quo. The second alternative is exactly the same as **Alternative 1** except that the 3,500 pound trip limit begins in March instead of April. **Alternative 2** enables fishermen to fish under the 3,500-pound trip limit during a month when there are few other fishing opportunities and at a time of year when ex-vessel prices are typically at their highest without risking unlimited catches. This provides increased total landings stability for communities and increased financial stability for fishermen and their families that result in an expected positive social impact. However, it should also be noted that any closures that occur would take place earlier in the calendar year than under **Alternative 1**. According to some sources, the closures would take place at a time of the year when the fish are gathered together in dense groupings and the cast net fishery is more effective. This could result in negative economic impacts for that gear group. The March re-opening would occur at a time when the Spanish mackerel are about to migrate north and tend to spread out (Hartig 2006).

A more detailed analysis of the impacts on fishery participants and their communities is found in Sections 4, 5, and 7 of the Amendment 18 document. Appendix A (Amendment 18 document) contains background information on fishing communities. Appendix B (Amendment 18 document) contains minutes from a September public hearing on these actions when they were proposed as a regulatory amendment.

# 1 INTRODUCTION

## 1.1 Background

This amendment proposes three changes to the current management of Atlantic migratory groups of king and Spanish mackerel. Two issues address proposed reductions to the Total Allowable Catch (TAC) levels for Atlantic king and Spanish mackerel, which results in reductions in the commercial quotas and recreational allocations. The third issue proposes an extension of current trip limits to track the new fishing year for Spanish mackerel.

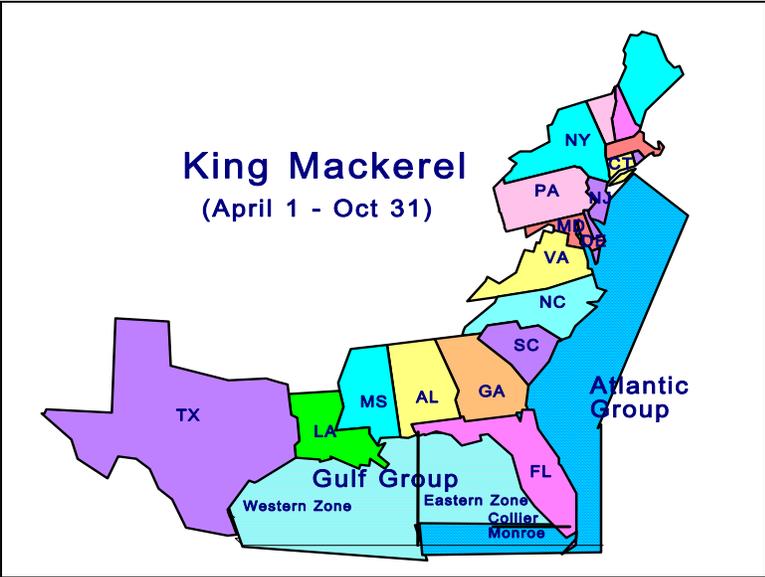
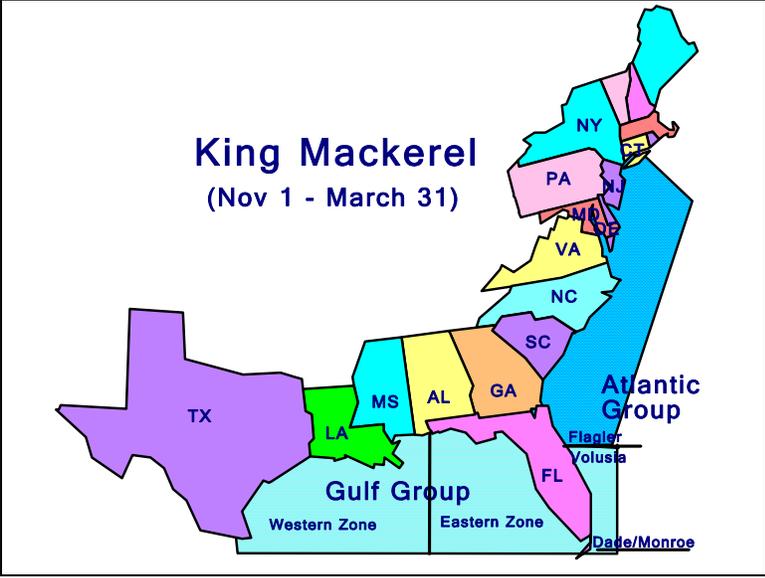
The 2004 SEDAR 5 Assessment provided updated MSY, ABC, etc. values for Gulf and Atlantic migratory groups of king mackerel based on counting 100% of fish in the mixing zone as Gulf king mackerel. Values were also estimated based on counting 50% of fish in the mixing zone as Gulf king mackerel. The new total ABC, estimated based on the top end of the ABC ranges (based on fishing at the OY level) and a 50/50 mixing rate for both Gulf and Atlantic migratory groups, is 16.7 million pounds. If the SAFMC and GMFMC both continue with current TAC levels (10.0 and 10.2 respectively), this could result in overfishing if the fisheries harvested their full shares leading to an overfished stock status for each migratory group. This amendment proposes to reduce the TAC for Atlantic migratory group king mackerel to maintain the stock at a biomass level that will produce the Optimum Yield (OY).

The 2003 Report of the Mackerel Stock Assessment Panel (MSAP 2003) estimated a new ABC range for the Atlantic migratory group Spanish mackerel. The midpoint of the range (6.7 million pounds) is slightly lower than the current TAC (7.04 million pounds). While adherence to the current TAC would not result in overfishing, there would be an increase in the potential for overfishing to occur. This amendment proposes to reduce the TAC for Atlantic migratory group Spanish mackerel.

Amendment 15 established a new fishing year for Spanish mackerel from April 1 – March 31 to March 1 – end of February. For Atlantic group Spanish mackerel, the change in the fishing year was made to potentially ameliorate the possibility of closures in the mackerel fisheries during the month of March when fisheries for other species, such as some snapper grouper, are closed. However, when the new fishing year was established, the trip limits were not adjusted to the new fishing year. This amendment proposes extending the trip limits currently used to track the new fishing year.

To prevent overfishing, continue sustainable management of the resource in the Atlantic groups of king and Spanish mackerel, and to extend the current trip limits for Spanish mackerel to track the new fishing year as stated in Amendment 15 (in June 2006), the SAFMC is proposing to:

- 1) Set the Atlantic migratory group king mackerel TAC at 7.1 million pounds,
- 2) Set the Atlantic migratory group Spanish mackerel TAC at 6.7 million pounds,  
and
- 3) Change the Atlantic migratory group Spanish mackerel trip limits to track the new fishing year (March 1 – end of February).



**Figure 1.** Seasonal boundaries and divisions of the Gulf and Atlantic migratory groups of king mackerel.

## **2 PURPOSE AND NEED**

The purpose of this amendment is to propose management measures for the south Atlantic coastal pelagic fisheries to prevent overfishing in the king and Spanish mackerel fisheries and to align current trip limits with the new fishing year in the Spanish mackerel fishery. The SAFMC initiated this amendment in June 2006 to reduce the TACs for the Atlantic migratory groups of king and Spanish mackerel in reaction to new stock information provided through the 2004 SEDAR 5 Assessment (for king mackerel) and the 2003 Report of the MSAP (for Spanish mackerel). A new fishing year for Spanish mackerel was established from April 1 – March 31 to March 1 – end of February in Amendment 15 in order to prevent the possibility of multiple commercial fishery closures at the same time. (For example, the red porgy fishery is closed January through April, and the gag and black grouper fisheries are closed in March and April.) This amendment extends the trip limits currently used under the old fishing year to the new fishing year by extending the trip limit for April 1 – November 30 to March 1- November 30. Other trip limits apply after November 30. Failure to make this change would result in no trip limit for the month of March.

The overall purpose of this amendment is to provide for sustainability and social and economic stability in the mackerel fisheries by reducing the TAC levels, given new stock assessment information, and support the redefinition of the fishing year for Atlantic group Spanish mackerel. Maintaining TACs at a sustainable level helps to maximize the overall benefits to the Nation. Such management helps to maintain healthy populations of Atlantic migratory group king and Spanish mackerel. Extending current trip limits for Atlantic Spanish mackerel to track the new fishing year supports redefinition of the fishing year for Atlantic group Spanish mackerel.

### 3 MANAGEMENT ALTERNATIVES FOR MACKEREL TACs AND TRIP LIMITS

The Magnuson-Stevens Act requires that each FMP define reference points in the form of maximum sustainable yield (MSY) and optimum yield (OY), and specify objective and measurable criteria for identifying when the fishery is overfished and/or undergoing overfishing. Status determination criteria are defined by 50 CFR 600.310 to include a minimum stock size threshold (MSST) and a maximum fishing mortality threshold (MFMT). Together, these four parameters (MSY, OY, MSST, and MFMT) are intended to provide fishery managers with the tools to measure the status and performance of each fishery in the fishery management unit. By evaluating stock biomass (B) and fishing mortality rate (F) in relation to MSY, OY, MSST, and MFMT, fishery managers can determine the status of a fishery at any given time and assess whether management measures are achieving established goals.

For both king and Spanish mackerel, these biological reference points and stock status criteria are represented by proxies of static spawning potential ratios (SPR). MSY represents a yield from a stock size or biomass at equilibrium ( $B_{MSY}$ ), and is calculated as the yield associated with a fishing mortality rate that would produce a 30 percent SPR ( $F_{30\%SPR}$ ). OY represents a yield associated with  $F_{40\%SPR}$ .  $F_{30\%SPR}$  represents a proxy for  $F_{MSY}$  or MFMT;  $F_{40\%SPR}$  represents a proxy for  $F_{OY}$ . For Atlantic migratory group king mackerel, according to the SEDAR-5 results (Table 19, page 69; see the Amendment 18 document), and assuming a 50/50 mixing rate along the Florida east coast,  $F_{2002}/F_{MSY}$  was equal to 0.46; none of the 500 bootstrapped estimates exceeded  $F_{MSY}$  (MFMT). There was a 3.8 percent chance the stock was overfished ( $B_{2002} < MSST$ ); only 19 of the 500 bootstrapped estimates were less than MSST. Under a no mixing assumption  $B_{2003}/B_{MSY}$  was estimated to be 1.22; although no similar estimate was developed under the 50/50 mixing scenario, the stock size would be larger. According to the 2003 MSAP Report, for Atlantic Spanish mackerel,  $F_{2002}/F_{MSY}$  was equal to 0.58; there was a 4 percent chance  $F_{2002} > F_{MSY}$ , with only 14 of 500 bootstrapped estimates exceeding  $F_{MSY}$  (MFMT). There was less than a 2 percent chance  $B_{2002} < MSST$ ; only 8 of the 500 bootstrapped estimates were less than MSST.  $B_{2003}/B_{MSY}$  was estimated to be 1.78.

Therefore, to maintain healthy stocks of Atlantic migratory group king and Spanish mackerel, the Councils propose modifications of the TACs for these resources. The intent is to prevent overfishing and continue to manage the fishery resources for the maximum benefit to the Nation. Adjusting the Spanish mackerel trip limit would ensure a stable harvest of the resource consistent with the new fishing year.

### 3.1 Action 1 - Total Allowable Catch (TAC) for Atlantic migratory group king mackerel

Table 1 provides current TAC and ABC information along with values from the latest assessment.

**Table 1.** Total Allowable Catch (TAC) and Acceptable Biological Catch (ABC) for king mackerel and total catch (commercial and recreational) in 100,000 pounds.

	Current	SEDAR 5 – King Mackerel Assessment (ABC @ F <sub>40%</sub> SPR)		Total Estimated Catches			
		100% Gulf	50% Gulf*	2002/03	2003/04	2004/05	2005/06
Gulf Migratory Group	10.2 (5.3 - 9.6)	8.3 (6.7 – 10.2)	5.7 (4.4 – 7.1)	7.70	6.69	6.89	6.22
Atlantic Migratory Group	10.0 (8.9 - 13.3)	5.7 (4.3 – 7.4)	7.1 (5.3 – 9.6)	4.42	5.83	6.11	6.38

Notes: 1) Beginning with 2005/06 the fishing year changed to begin March 1.

\*Source: SEDAR 5, King Mackerel Assessment, Figure 35, p.95.

Table 2 provides TAC, commercial quota, and recreational allocation information under each alternative for Action 1.

**Table 2.** TAC, commercial quota, and recreational allocation under each alternative for Action 1.

	Action 1 – King Mackerel		
	TAC	Commercial Quota	Recreational Allocation
Alt. 1 (Status Quo)	10,000,000	3,710,000	6,290,000
<b>Alt. 2 (Preferred)</b>	<b>7,100,000</b>	<b>2,634,100</b>	<b>4,465,900</b>
Alt. 3	5,300,000	1,966,300	3,333,700
Alt. 4	9,600,000	3,561,600	6,038,400

Table 3 provides information on the Atlantic migratory group king mackerel commercial and recreational quotas and catches over recent years.

**Table 3.** Atlantic migratory group king mackerel commercial quota and recreational allocations and catches over recent years, 1000s of pounds.

Year	Commercial Quota	Commercial Catch	Recreational Allocation	Recreational Catch	TAC	Total Estimated Catch
2002/03	3,710	1,745	6,290	2,672	10,000	4,417
2003/04	3,710	1,731	6,290	4,100	10,000	5,831
2004/05	3,710	2,820	6,290	3,287	10,000	6,107
2005/06	3,710	2,424	6,290	3,954	10,000	6,378
2006/07	3,710	2,325	6,290	3,780	10,000	6,105

Notes: 1) Beginning with 2005/06 the fishing year changed to begin March 1. Previous years began on April 1;

2) 2006/07 commercial catch is estimated from the average 2003/04 through 2005/06 landings.

Source: ALS data (August 2006); Southeast Fisheries Science Center (October 2006).

#### Background for Action 1:

The 2004 SEDAR 5 Assessment provided updated MSY, ABC, etc. values for Gulf and Atlantic migratory groups of king mackerel (Table 1) based on counting 100% of fish in the mixing zone

as Gulf king mackerel. Values are also shown in Table 1 based on counting 50% of fish in the mixing zone as Gulf king mackerel. The seasonal boundaries for king mackerel are shown in Figure 1. Based on the top end of the new ABC ranges under a 50/50 mixing rate, the total ABC for both Gulf and Atlantic migratory groups would be 16.7 million pounds. If the SAFMC sets TAC at the best point estimate of 7.1 million pounds, and the GMFMC continues to have a TAC of 10.2 million pounds, the total TAC would be 17.3 million pounds, which would exceed the top end of the total ABC. This would result in overfishing if the full TAC was harvested and could push both migratory groups into an overfished stock status.

**Alternative 1.** No action. Currently TAC = 10.0 million pounds based on an ABC of 8.9 – 13.3 million pounds.

**Alternative 2. Preferred.** TAC = 7.1 million pounds which is the best point estimate of the ABC range (5.3 – 9.6 million pounds).

**Alternative 3.** TAC = 5.3 million pounds which is the lowest value within the ABC range (5.3 – 9.6 million pounds).

**Alternative 4.** TAC = 9.6 million pounds which is the top end of the ABC range (5.3 – 9.6 million pounds).

#### Discussion – Action 1 – Economic and Social Impacts

Under **Alternative 1** (status quo), the TAC would remain at 10 million pounds with a commercial quota of 3.71 million pounds and a recreational allocation of 6.29 million pounds (Table 2). The average of total landings over the last three complete fishing years is 6.1 million pounds (Table 3). This is slightly lower than 2005/06 landings of 6.4 million pounds. The average of commercial landings over the last three complete fishing years is 2.3 million pounds, slightly lower than 2005/06 landings. Recreational landings are expected to total 3.78 million pounds in 2006/07 down from 3.95 in 2005/06. Both estimates are below the commercial quota and the recreational allocation. Consequently, revenues are not expected to vary significantly from last year's revenue as a result of direct and indirect effects of **Alternative 1**.

Over the past several years, the king mackerel fishery has provided a consistent source of income for commercial fishermen and it has maintained a relatively stable regulatory management regime. However, no change in response to the new stock assessment data could result in fishing at an unsustainable level and risk overfishing the resource, which could have negative economic and social impacts in the long-term.

**Alternative 1** provides the economic and social basis for comparison to other alternatives. The economic analyses presented below for **Alternative 1** and for the other alternatives are summarized from a more thorough discussion of the methods and economic and social impacts of the proposed change to the Atlantic migratory group king mackerel TAC in Section 7 of this document.

Under the preferred **Alternative 2**, the TAC would be set at 7.1 million pounds (Table 2), 2.9 million pounds less than the current TAC. The commercial quota under **Alternative 2** versus

**Alternative 1** would decrease by about 1 million pounds (Table 3). The recreational allocation would decrease by about 1.8 million pounds. However, the **Alternative 2** TAC is still approximately 0.7 million pounds greater than the 2005/06 landings and about 1 million pounds greater than the expected landings for 2006/07. No change in revenue is expected as a result of direct and indirect effects of **Alternative 2**. Estimated landings for 2006/07 fall below the **Alternative 2** commercial quota and recreational allocation by about 310,000 pounds and 686,000 pounds, respectively. While the **Alternative 2** commercial quota is above the 2006/07 expected catch, the decrease in the commercial quota may be the source of some anxiety among king mackerel fishermen and their families in that it increases the probability that a closure could occur before the end of the fishing year which could potentially decrease the amount of revenue they might otherwise expect to obtain under **Alternative 1** if they harvested the entire commercial quota.

Under **Alternative 3**, the TAC would be set at 5.3 million pounds (Table 2), approximately half of the TAC under **Alternative 1**. The commercial quota would be about 1.7 million pounds less than under **Alternative 1** and about 0.7 million pounds less than under **Alternative 2**. The recreational quota would be almost 3 million pounds less than under **Alternative 1** and approximately 1.1 million pounds less than under **Alternative 2**. If the entire TAC under **Alternative 3** was landed, this would be about 1.1 million pounds less than 2005/06 landings and 805,000 pounds less than the expected 2006/07 landings (Table 3). This would result in a revenue loss to commercial fishermen of approximately \$637,000 following a closure for commercial fishing resulting from achievement of the commercial quota. The difference between the recreational allocation under **Alternative 3** and the estimated recreational landings for 2006/07 is a loss to recreational fishermen of about 446,000 pounds, which represents a loss in consumer surplus of about \$12,625.

**Alternative 3** specifies a situation under which a fishery closure could occur. In general, the methodologies used and described in Section 7 of this document, indicate that the commercial quota would likely be reached sometime in November or December or before. In addition, the recreational allocation is expected to be reached in September or October. On the commercial side, this would have negative social impacts on king mackerel fishermen and their families as well as fish houses and the supply industries the king mackerel fishery supports since it results in a lower level of annual revenue from king mackerel than the amount which is expected under **Alternative 1**. This would increase the financial strain fishing families are already experiencing. The increase in financial strain increases the probability of fishing operations going out of business. Fish houses and supply industries would likely suffer some revenue losses as well, which decreases their profit margins and their ability to retain employees. The communities dependent on king mackerel resources would likewise be impacted through decreased consumer spending.

Under **Alternative 4**, the TAC would be set at 9.6 million pounds with a commercial quota of about 3.6 million pounds and a recreational allocation of about 6 million pounds (Table 2). The TAC is 400,000 pounds less than the **Alternative 1** TAC and 2.5 million pounds greater than the preferred **Alternative 2** TAC (Table 3). The expected catch for 2006/07 is far below the commercial quota and recreational allocation under **Alternative 4** and therefore no revenue losses are expected as a result of direct and indirect effects of **Alternative 4** (Table 3).

For the general non-fishing public of the U.S., **Alternatives 2, 3, and 4** offer long-term benefits related to maintaining long-term sustainability of the mackerel resource in that they maintain catch within the ABCs identified as based on the best available science. These alternatives benefit those in the U.S. who derive satisfaction from knowing the marine environment is managed sustainably and is thriving. Non-use values of the resource, such as bequest<sup>5</sup> and existence values<sup>6</sup>, are expected to increase with the **Alternative 2, Alternative 3, and Alternative 4** adjustments to the TAC based on the new stock assessments due to the perception that the resource is being conservatively managed. **Alternative 3** is expected to provide a greater increase in non-use values than **Alternative 2**. **Alternative 4** is only expected to increase non-use values in a minor way, if at all.

#### Discussion – Action 1 - Biological, Physical, and Administrative Impacts

The proposed TAC (**Alternative 2**), based on a harvest rate equal to  $F_{40\%SPR}$ , would maintain a stock biomass that can consistently produce the Optimum Yield. Recent harvest levels for Atlantic group king mackerel have ranged from approximately 4.4 to 6.4 million pounds (Table 3). Thus, if fishing effort remains stable neither the commercial or recreational harvest would be limited by this shift in TAC. The commercial harvest has exceeded the proposed commercial quota under the preferred TAC only once in the last five years, and recreational harvest has not exceeded its allocation. However, the Council is concerned that additional harvest, especially from the commercial sector may occur in the near future.

As of October 2006, there were 557 vessels with active king mackerel permits that also had active snapper grouper permits (trip limited or unlimited). Many of these vessels are home-ported in either North Carolina (109 vessels) or Florida (403 vessels); both areas have prominent king mackerel fisheries. A number of regulations in the snapper grouper fishery (see Snapper Grouper Amendment 13C) became effective on October 23, 2006. The snowy grouper and golden tilefish fisheries were closed because the quotas were met. These closures and other regulations in Amendment 13C are expected to shift effort into the mackerel fishery. Further, the Council will be considering regulations to halt overfishing of gag grouper at the June 2007 meeting; regulations could become effective by January 2008.

**Alternative 3** would have a higher probability of maintaining a stock biomass that can produce OY but would unnecessarily restrict yields associated with OY by 1.8 MP, thus reducing the overall social and economic benefits available to the fishery participants. **Alternative 4** would have a low probability of maintaining a stock biomass that could produce OY; harvesting Atlantic group king mackerel at this rate would approach fishing mortality rates associated with MFMT. Based on the recent SEDAR-5 assessment, assuming a 50/50 mixing rate for Gulf and Atlantic groups of king mackerel along the east coast of Florida, yields of Atlantic king mackerel in excess of 9.6 MP would exceed  $F_{MSY}$  (MFMT). Therefore, the no action (**Alternative 1**) and **Alternative 4**, maintaining a 10 MP TAC and 9.6 MP TAC respectively, would result in overfishing if the full TAC were harvested.

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5 Value of leaving use and non-use value to offspring.

6 Value of knowledge of continued existence.

There are no expected changes to the physical environment, as the administrative action to change the TAC would not alter the manner in which the fishery is conducted. King mackerel fishing is conducted by surface trolling, which does not impact the sea floor or other physical aspects of the marine environment.

There would be some administrative impacts from implementing the TAC change. Given that recent harvest levels by both the commercial and recreational sector have approached the proposed allocations, there would be increased administrative costs by NMFS to monitor these fisheries more closely and close the fisheries when the commercial quota was met. Closures, which have not happened in recent years, would greatly increase the burden of state and federal law enforcement agencies to monitor and maintain the prohibition of harvest. The administrative impacts under **Alternative 3** would be the greatest due to the increased probability of closures. **Alternative 4** would not likely increase administrative impacts, as the fishery has not approached this level of harvest in recent years, unless there is an effort shift into the commercial king mackerel fishery.

### 3.2 Action 2 - Total Allowable Catch (TAC) for Atlantic migratory group Spanish mackerel

Table 4 provides current TAC and ABC information along with new values for the latest assessment.

**Table 4.** Total Allowable Catch (TAC) and Acceptable Biological Catch (ABC) for Atlantic migratory group Spanish mackerel and estimated total catch (commercial and recreational), 100,000s pounds.

	Current	2003 Report of the MSAP (ABC @ F <sub>40%</sub> SPR)	Total Estimated Catches			
			2002/03	2003/04	2004/05	2005/06
TAC (ABC Range)	7.04 (5.7 – 9.0)	6.7 (5.2 – 8.4)	5.28	5.74	5.06	5.12
MSY	6.4 (5.7 – 7.5)	5.2 (4.4 – 6.4)				

Notes: 1) Beginning with 2005/06 the fishing year changed to begin March 1.

Table 5 provides TAC, commercial quota, and recreational allocation information under each alternative for Action 2.

**Table 5.** TAC, commercial quota, and recreational allocation under each alternative for Action 2.

	Action 2 – Spanish Mackerel		
	TAC	Commercial Quota	Recreational Allocation
Alt. 1 (Status Quo)	7,040,000	3,872,000	3,168,000
<b>Alt. 2 (Preferred)</b>	<b>6,700,000</b>	<b>3,685,000</b>	<b>3,015,000</b>
Alt. 3	5,200,000	2,860,000	2,340,000
Alt. 4	8,400,000	4,620,000	3,780,000

Background for Action 2:

The 2003 Report of the Mackerel Stock Assessment Board (MSAP 2003) provided revised MSY, ABC, etc. values for the Atlantic king and Spanish mackerel migratory groups. The values from the 2003 MSAP assessment are used for Atlantic migratory group Spanish mackerel (Table 4).

**Alternative 1.** No action. Currently TAC = 7.04 million pounds based on an ABC of 5.7 – 9.0 million pounds.

**Alternative 2. Preferred.** TAC = 6.7 million pounds which is the best point estimate of the ABC range (5.2 – 8.4 million pounds).

**Alternative 3.** TAC = 5.2 million pounds which is the lowest value within the ABC range (5.2 – 8.4 million pounds).

**Alternative 4.** TAC = 8.4 million pounds which is the top end of the ABC range (5.2 – 8.4 million pounds).

Table 6 provides information on the Atlantic migratory group Spanish mackerel commercial and recreational quotas and catches over recent years.

**Table 6.** Atlantic migratory group Spanish mackerel commercial quota and recreational allocations and catches over recent years, in 1000s of pounds.

Year	Commercial Quota	Commercial Catch	Recreational Allocation	Recreational Catch	TAC	Total Estimated Catch
2002/03	3,872	3,207	3,168	2,072	7,040	5,279
2003/04	3,872	3,742	3,168	1,994	7,040	5,736
2004/05	3,872	3,684	3,168	1,371	7,040	5,055
2005/06	3,872	3,138	3,168	1,985	7,040	5,123
2006/07	3,872	3,521	3,168	1,783	7,040	5,305

Notes: 1) Beginning with 2005/06 the fishing year changed to begin March 1. Previous years began on April 1;

2) 2006/07 commercial catch is estimated from the average 2003/04 through 2005/06 landings.

Source: ALS data (August 2006); Southeast Fisheries Science Center (October 2006).

Discussion – Action 2 - Economic and Social Impacts

Under **Alternative 1** (status quo), the TAC would remain at 7.04 million pounds with a commercial quota of 3.9 million pounds and a recreational allocation of 3.2 million pounds (Table 4). Average commercial landings over the three years 2003/04 – 2005/06 provides a proxy of expected landings for 2006/07. The average is 5.31 million pounds, a slight increase from 2005/06 landings of 5.12 million pounds (Table 6). Using the three year average, commercial landings are expected to increase slightly to 3.52 million pounds in 2006/07 and recreational landings are expected to reach 1.78 million pounds. Both estimates are below the commercial quota and the recreational allocation. Consequently, revenues are not expected to vary significantly from last year’s revenue as a result of direct and indirect effects of

**Alternative 1.**

Over the past several years, the Spanish mackerel fishery has provided a consistent source of income for commercial fishermen and it has maintained a relatively stable regulatory management regime. There are no expected changes to the social environment as a direct or indirect effect of **Alternative 1**.

**Alternative 1** provides the economic and social basis for comparison to other alternatives. The economic analyses presented below for **Alternative 1** and for the other alternatives are summarized from a more thorough discussion of the methods and economic and social impacts of the proposed change to the Atlantic migratory group Spanish mackerel TAC in Section 7 of this document.

Under the preferred **Alternative 2**, the TAC would be set at 6.7 million pounds, 0.34 million pounds less than the current TAC (Table 5). The commercial quota under **Alternative 2** versus **Alternative 1** would decrease by about 187,000 pounds. The recreational allocation would decrease by about 153,000 pounds. However, the **Alternative 2** TAC is still more than 1 million pounds greater than the 2005/06 landings and the expected total commercial and recreational landings for 2006/07 (Table 6). Under the assumption that the 2005/06 landings or the expected 2006/07 expected landings are a reasonable prediction of future landings, no change in revenue is expected as a result of direct and indirect effects of **Alternative 2**. However, the potential for a closure under **Alternative 2** may cause some anxiety for Spanish mackerel fishermen and their families in that it results in lower annual revenues than may otherwise occur under **Alternative 1**.

Under **Alternative 3**, the TAC would be set at 5.2 million pounds, about 1.8 million pounds less than the **Alternative 1** TAC (Table 5). The commercial quota would be about 1 million pounds less than under **Alternative 1** and about 0.8 million pounds less than under **Alternative 2**. The recreational allocation would be almost 828,000 pounds less than under **Alternative 1** and approximately 675,000 pounds less than under **Alternative 2**. If the entire TAC under **Alternative 3** was landed, this would be about 377,000 pounds more than the 2005/06 and 105,000 pounds less than the expected 2006/07 landings (Table 6). The commercial quota under **Alternative 3** is 661,000 pounds less than expected commercial landings for 2006/07. This would result in a revenue loss of approximately \$483,000 dollars for the commercial sector (based on 2005/06 average ex-vessel price), a decrease of about 19% of estimated total ex-vessel revenue from the Spanish mackerel fishery in 2006/07 (\$2.57 million). The recreational allocation under **Alternative 3** is 557,000 pounds greater than the expected recreational catch in 2006/07.

**Alternative 3** specifies a situation under which a fishery closure could occur. The amount specified for the **Alternative 3** TAC (5.2 million pounds) was exceeded in eleven years since 1986 (see Table 9). The amount specified for the **Alternative 3** commercial quota (2.86 million pounds) was exceeded in all but three years since 1986. The recreational allocation under **Alternative 3** (2.34 million pounds) would have been exceeded in two years since 1986. Based on historical data, the **Alternative 3** commercial quota would likely be reached sometime in February or sooner. This would likely have negative social impacts for Spanish mackerel fishermen and their families as well as fish houses and the supply industries the Spanish mackerel fishery supports. Spanish mackerel fishermen would suffer a decrease in annual

revenues from Spanish mackerel compared to the situation under **Alternative 1**, increasing financial strain and the probability of going out of business, and they would be left with few fishing opportunities in the remaining months in the fishing year after the closure. Fish houses and supply industries would suffer some revenue losses, which would decrease their profit margins, and their ability to retain employees would be decreased due to a decrease in the supply of Spanish mackerel in the months following the closure but before the end of the fishing year. The communities dependent on Spanish mackerel resources would likewise be impacted through decreased consumer spending.

Under **Alternative 4**, the TAC would be set at 8.4 million pounds with a commercial quota of 4.62 million pounds and a recreational allocation of 3.78 million pounds (Table 5). The TAC is 1.36 million pounds more than the **Alternative 1** TAC and 1.7 million pounds greater than the preferred **Alternative 2** TAC. The expected catch for 2006/07 is far below the commercial quota and recreational allocation under **Alternative 4** (Table 6) and therefore no revenue losses are expected as a result of direct and indirect effects of **Alternative 4**.

For the general non-fishing public of the U.S., **Alternatives 2 and 3** offer long-term benefits related to maintaining long-term sustainability of the Spanish mackerel resource in that they specify a decrease in the Alternative 1 TAC. These alternatives benefit those in the U.S. who derive satisfaction from knowing the marine environment is managed sustainably and is thriving. Non-use values of the resource, such as bequest and existence values, are expected to increase with the **Alternative 2 and Alternative 3** adjustments to the TAC based on the new stock assessments due to the perceptiveness that the resource is being conservatively managed. **Alternative 3** is expected to provide a greater increase in non-use values than **Alternative 2**. **Alternative 4** is expected to cause a decrease in non-use values due to the increase in the **Alternative 4** TAC compared to the **Alternative 1** TAC.

#### Discussion – Action 2 - Biological, Physical, and Administrative Impacts

The proposed TAC (**Alternative 2**), based on the median value yield associated with F40%SPR would ensure the Atlantic Spanish mackerel biomass remains at a level that can produce OY for the fishery. **Alternatives 1 and 4**, while allowing for larger harvests, would not result in overfishing. The stock biomass is estimated to be 1.78 times the biomass needed to produce MSY. Therefore, for the short-term, high harvest levels could be taken, which would reduce the stock size to the MSY level. However, **Alternatives 1 and 4** do not meet the Council's objective to manage harvest with a TAC that has a median (50 percent) probability of achieving OY. Given the healthy status of the Atlantic Spanish mackerel stock, **Alternative 3** would unnecessarily restrict harvest and not allow the fishery to achieve OY.

There are no expected changes to the physical environment as the administrative action to change the TAC would not alter the manner in which the fishery is conducted. King mackerel fishing is conducted by surface trolling, which does not impact the sea floor or other physical aspects of the marine environment.

There would be some administrative impacts from implementing the TAC proposed by Preferred **Alternative 2**. In combination, the recreational or commercial sector have not landed fish that would meet the proposed TAC, but in recent years the commercial sector has landed fish in

quantities nearing the proposed 3.685 MP commercial quota. There would be an increased administrative burden on NMFS to monitor this fishery and adjust trip limits accordingly. The administrative impacts under **Alternative 3** would likely have the greatest administrative impacts due to the increased probability of NMFS having to make adjustments to the trip limits earlier in the fishing year. **Alternative 4** would have less administrative burden, as it is likely the trigger for trip limit reductions would not be met.

### 3.3 Action 3 - Change the Atlantic Migratory Group Spanish mackerel trip limits to track the new fishing year (March 1 – end of February)

#### Background for Action 3:

In Amendment 15, the fishing year was changed from April 1 through March 31 to March 1 through February 28/29 for the Atlantic migratory groups of king and Spanish mackerel. Beginning the fishing year on March 1 ensures the mackerel fisheries in the Atlantic are open during March when several other fisheries are closed. To achieve the objective of making the change in the fishing season, it is necessary to adjust the trip limits to track the new fishing year. The current trip limit allows for 3,500 pounds per vessel per day April 1 – November 30 and allows for other trip limits following November 30, as described below.

**Alternative 1.** Status Quo (no action) – The possession limits are as follows:

1. April 1 – November 30 – 3,500 pounds per vessel per day.
2. December 1 until 75% of the adjusted allocation is taken:

Monday – Friday	Unlimited
Other days	1,500 pounds

(Vessel fishing days begin at 6:00am and extend until 6:00am the following day, and vessels must be unloaded by 6:00pm of that following day.)
3. After 75% of the adjusted allocation is taken 1,500 pounds per vessel per day for all days.
4. When 100% of the adjusted allocation is reached: 500 pounds per vessel per day to the end of the fishing year (March 31). Adjusted allocation compensates for estimated catches of 500 pounds per vessel per day to the end of the season.

**Alternative 2.** Change the start date for the 3,500 pound trip limit to March 1 and the end of the fishing year to the end of February.

1. March 1 – November 30 – 3,500 pounds per vessel per day.
2. December 1 until 75% of the adjusted allocation is taken:

Monday – Friday	Unlimited
Other days	1,500 pounds

(Vessel fishing days begin at 6:00am and extend until 6:00am the following day, and vessels must be unloaded by 6:00pm of that following day.)
3. After 75% of the adjusted allocation is taken 1,500 pounds per vessel per day for all days.
4. When 100% of the adjusted allocation is reached: 500 pounds per vessel per day to the end of the fishing year (end of February). Adjusted allocation compensates for estimated catches of 500 pounds per vessel per day to the end of the season.

#### Discussion – Action 3 - Economic and Social Impacts

Under **Alternative 1**, regulations regarding trip limits for Atlantic migratory group Spanish mackerel would not change from status quo. As a consequence, the 3,500 pound trip limit for Spanish mackerel would go into effect in April, one month after the start of the new fishing season (March 1 – end of February) and extend through November. Other trip limits apply after

November. This alternative would likely negatively affect Spanish mackerel fishermen and their families as well as fish houses and the supply industries the Spanish mackerel fishery supports from having no trip limit in March.

**Alternative 1** provides the economic and social basis for comparison to other alternatives. The economic analyses presented below for **Alternative 1** are summarized from a more thorough discussion of the methods and economic and social impacts of the proposed change to the Atlantic migratory group Spanish mackerel trip limits in Section 7 of this document.

Under **Alternative 2**, the 3,500 pound trip limit would begin in March, the first month of the new fishing year, and extend through November. The same trip limits that occur under **Alternative 1** would apply after November. Under **Alternatives 1 and 2**, after December 1<sup>st</sup> and until 75% of the adjusted allocation is taken, vessels are able to take an unlimited amount on weekdays and 1,500 pounds on weekend days. More restrictive trip limits apply after 75% of the adjusted allocation is taken.

**Alternative 2** enables fishermen to fish under the 3,500-pound trip limit during a month when there are few other fishing opportunities. It also allows Spanish mackerel to be harvested during Lent when ex-vessel prices are typically at their highest point of the year. This provides increased total landings stability for communities and increased financial stability for fishermen and their families. According to some sources, the closures would take place when the fish are gathered together in dense groupings and the cast net fishery is more effective. This would result in negative economic impacts for that gear group. The March re-opening would occur at a time when the Spanish mackerel are about to migrate north and tend to spread out (Hartig 2006).

#### Discussion – Action 3 – Biological, Physical, and Administrative Impacts

Changing the trip limit will not impact stock status. Biological protection is provided through setting the TAC and preventing overages. There are no expected changes to the physical environment.

There would be some administrative impacts from implementing the change in trip limits.

# **MACKEREL AMENDMENT 18**

## **PUBLIC HEARING DATES AND LOCATIONS**

**All hearings are scheduled to begin at 6:00 PM.**

1. March 6, 2007 - Jekyll Island Club, 371 Riverview Drive, Jekyll Island, GA 31527. 912/635-2600
2. March 12, 2007 - Hampton Inn St. Augustine Beach, 430 A1A Beach Boulevard, St. Augustine, FL 32080; 904/471-4000
3. March 13, 2007 – Hutchinson Island Marriott, 555 N.E. Ocean Boulevard, Stuart, FL 34996; 772/225-3700
4. March 14, 2007 – Sombrero Cay Club Resort, 19 Sombrero Boulevard, Marathon, FL 33050; 305/743-2250
5. March 18, 2007 – Hatteras Civic Center, Highway 12, Hatteras, NC 27943; 252/986-2810.
6. March 19, 2007 – Crystal Coast Civic Center, 3505 Arendell Street, Morehead City, NC 28557; 252/247-3883
7. March 20, 2007 – Shell Island Resort, 2700 N. Lumina Avenue, Wrightsville Beach, NC 28480; 910/256-8696
8. March 21, 2007 – Baywatch Resort, 2701 S. Ocean Boulevard, North Myrtle Beach, SC 29582; 843/272-4600
9. March 27, 2007 – Hampton Inn, 678 Citadel Haven Drive, Charleston, SC 29414; 843/573-1200

**Written comments will be accepted in the Council office through 5 p.m. on April 10, 2007.**