AMENDMENT 6

to

The Fishery Management Plan

for

Coastal Migratory Pelagics

in

The Gulf of Mexico

and

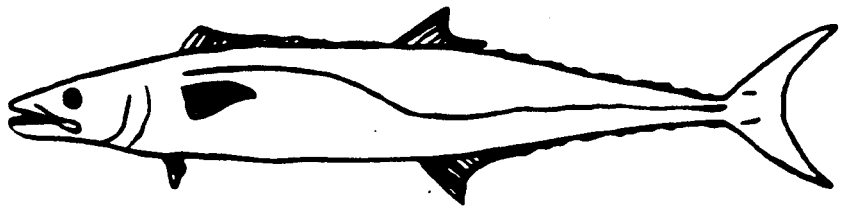
South Atlantic

Includes Environmental Assessment

Regulatory Impact Review

and

Initial Regulatory Flexibility Analysis



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I. Introduction

The "Mackerel" FMP, approved in 1982 and implemented by regulations effective in February of 1983, treated king and Spanish mackerel each as one U.S. stock. Allocations were established for recreational and commercial fisheries, and the commercial allocation was divided between net and hook-and-line fishermen.

Amendment 1, implemented in September of 1985, provided a framework procedure for pre-season adjustment of total allowable catch (TAC), revised king mackerel maximum sustainable yield (MSY) downward, recognized separate Atlantic and Gulf migratory groups of king mackerel, and established fishing permits and bag limits for king mackerel. Commercial allocations among gear users were eliminated as was the use of purse seines on overfished stocks. The Gulf commercial allocation for king mackerel was divided into eastern and western zones for the purpose of regional allocation.

Amendment 2, implemented in July of 1987, revised Spanish mackerel MSY downward, recognized two migratory groups, and set commercial quotas and bag limits. Charter boat permits were required, and it was clarified that TAC must be set below the upper range of acceptable biological catch (ABC).

Amendment 3 was partially approved in 1989, revised, resubmitted, and approved in 1990. It prohibits drift gill nets for coastal pelagics and purse seines for the overfished groups of mackerels.

Amendment 4, implemented in 1989, reallocated Spanish mackerel equally between recreational and commercial fishermen on the Atlantic group.

Amendment 5, implemented in August 1990, made a number of changes in the management regime which included:

- Extended management area for Atlantic groups of mackerels through the Mid-Atlantic Council's area of jurisdiction;
- Revised problems in the fishery and planned objectives;
- Revised fishing year for Gulf Spanish mackerel from July-June to April-March;
- Revised definition of "overfishing";
- Added cobia to the annual stock assessment procedure and provided that the South Atlantic Council will be responsible for pre-season adjustments of TACs and bag limits for the Atlantic migratory groups of mackerels while the Gulf Council will be responsible for Gulf migratory groups;
- Continued to manage the two recognized Gulf migratory groups of king mackerel as one until management measures appropriate to the eastern and western groups can be determined;
- Redefined recreational bag limits as daily limits;
- Deleted provision specifying that bag limit catch of mackerel may be sold;
- Provided guidelines for corporate commercial vessel permits;
- Specified that Gulf king mackerel may be taken only by hook-and-line and run-around gill nets;
- Imposed a bag limit of two cobia per person per day;

- o Established a minimum size of 12-inch (30.5 cm.) fork length or 14-inch (35.6 cm.) total length for king mackerel and included a definition of "conflict" to provide guidance to the Secretary.

This amendment would make changes described in Section II.

II. Actions

Actions proposed for this amendment are:

A. Identification of additional problems and an objective in the fishery.

B. Rebuilding overfished stocks within a specific period.

C. Schedule of assessments and adjustments.

D. Seasonal adjustment actions.

E. Gulf king mackerel stock identification and allocation.

F. Atlantic Spanish mackerel possession limits.

G. Commercial permit requirements.

H. Control of recreational allocation.

I. Modification of the recreational fishing year.

J. Minimum size limit for king mackerel.

III. Description of the Fishery

King mackerel and Spanish mackerel are major target species of an important commercial fishery in South Florida as well as a major target species for the private boat and charterboat recreational fishery along widespread areas within the Gulf and South Atlantic regions. King mackerel are particularly important to the charterboat and offshore private boat fleets. In addition, smaller amounts of king mackerel are caught as a commercial supplement the North Carolina charterboat fleet. Small amounts of Spanish mackerel are caught as an incidental catch or supplemental commercial target species off Alabama, Mississippi, Louisiana, North Carolina, and to a smaller degree Georgia and South Carolina.

A hook-and-line fishery for king mackerel was developed commercially off Louisiana in the winter of 1982-1983. A trolled handline fishery is similar to the Florida hook-and-line fleet and is centered in the Grand Isle area.

Recreational users have increased in numbers over time. Many come from outside the management unit as well as areas within it. Increased income, leisure time, and a wide variety of supplies have increased participation. This participation has, in turn, generated significant amounts of economic value and also employment.

The present management regime for king mackerel recognizes two migratory groups, the Gulf Migratory Group and the Atlantic Migratory Group. These groups are hypothesized to mix on the east coast of Florida. For management and assessment purposes, a boundary between groups was specified which was the Volusia-Flagler County border on the Florida east coast in the winter (November 1-March 31) and the Monroe-Collier County border on the Florida southwest coast in the summer (April 1-October 31). The Gulf Migratory Group may be divided at the Florida-Alabama border when the stock assessment panel is able to provide separate acceptable biological catches for each group. The commercial allocation for the Gulf group is currently divided at this boundary.

For Spanish mackerel two migratory groups are recognized with a division between the Atlantic and Gulf groups being at the Dade-Monroe County line in South Florida. The commercial fishery is almost entirely a South Florida winter fishery utilizing gill nets.

For the purpose of allocating a limited resource among users, the FMP has set ratios based on historic unregulated catches.

MACKEREL USER ALLOCATIONS

Migratory Group	Percent Allocation	
	Recreational	Commercial
Gulf King	68	32
		Eastern Zone 69
		Western Zone 31
Atlantic King	62.9	37.1
Gulf Spanish	43	57
Atlantic Spanish	50	50

Stocks of Gulf king mackerel and Gulf Spanish mackerel continue to be defined as being overfished; though reduced allowable catches have improved their condition somewhat. See Appendix IV for a description of the condition of the stocks and migratory groups of king and Spanish mackerels, cobia and dolphin. Trawl bycatch of juvenile mackerels and overruns of total allowable catches have reduced the effectiveness of remedial management measures, however.

Permits are required of commercial boats and charter boats fishing for coastal pelagics. The numbers of such permits have increased in each of the past three years.

Number of Permits Issued for the Mackerel Fishery

Year	Commercial	Charter	Total
91-92*	1,620	1,444	3,064
90-91	1,652	1,654	3,306
89-90	1,463	1,566	3,029
88-89	1,315	1,153	2,468

*Issued through February 1992

IV. Purpose and Need

Problems in the Fishery

The current FMP through Amendment 5 lists the followings problems:

1. The stocks of Spanish mackerel and Gulf king mackerel are below the level of producing MSY, and spawning stocks have been reduced such that recruitment has been affected. The harvest levels of Atlantic king mackerel are close to their upper limit. Uncontrolled fishing would further reduce biomass.

2. A. Available recreational catch statistics were not designed to track catch for quota purposes.

   B. Additional biological and statistical data on both the recreational and commercial fisheries are needed, and social and economic information that assesses the impact of regulations and allocations is not available.

3. Intense conflicts and competition exist between recreational and commercial users of the mackerel stocks and between commercial users employing different gears.

4. The existence of separate state and federal jurisdiction and lack of coordination between these two make biological management difficult since, in some instances, the resource may be fished beyond the allocation in state waters.

5. The condition of the cobia stock is not known, and increased landings over the last ten years have prompted concern about overfishing.

6. Lack of information on multiple stocks or migratory groups of king mackerel which may mix seasonally confounds and complicates management.

7. Large catches of mackerel over a short period cause quotas and TAC to be exceeded before closures could be implemented. Therefore, some users obtained a share in excess of their allocation.

8. Closures of a fishery and reversion of bag limits to zero due to the filling of a quota have deprived geographic areas of access to a fishery.

9. Fish caught under the bag limit and sold contribute to the filling of both the recreational and commercial quotas.

10. Part-time commercial fishermen compete with full-time commercial fishermen for the available quota.

Management Objectives

The current FMP through Amendment 5 lists seven plan objectives:

1. The primary objective of this FMP is to stabilize yield at MSY, allow recovery of overfished populations, and maintain population levels sufficient to ensure adequate recruitment.

2. To provide a flexible management system for the resource which minimizes regulatory delay while retaining substantial Council and public input in management decisions and which can rapidly adapt to changes in resource abundance, new scientific information, and changes in fishing patterns among user groups or by areas.

3. To provide necessary information for effective management and establish a mandatory reporting system for monitoring catch.

4. To minimize gear and user group conflicts.

5. To distribute the total allowable catch of Atlantic migratory group Spanish mackerel between recreational and commercial user groups based on the catches that occurred during the early to mid 1970s, which is prior to the development of the deep water run-around gill-net fishery and when the resource was not overfished.

6. To minimize waste and bycatch in the fishery.

7. To provide appropriate management to address specific migratory groups of king mackerel.

The Councils have identified additional problems and a management objective, which are described and are to be added to the FMP in Option A-1. The actions in this amendment address the need to streamline management procedures in order to be more responsive and flexible. Most of the actions are administrative in that they provide guidelines for management (Options B, C, D, G, H, and I). Two actions, E and F, address issues of allocation among users. Action J would enhance yield as well as provide for improved geographic distribution of the limited allowable catch. While the changes are largely administrative, they will provide the opportunity for better management to the Councils and the Regional Director.

The actions proposed in this amendment are revisions and adjustments of current procedures and regulations. They would facilitate and improve management, decrease operating costs of management, and bring the FMP into compliance with new guidelines. The only new action is the introduction of trip (possession limits) in the Atlantic Spanish mackerel fishery to prevent exceeding quotas and to allocate among commercial fishermen.

Problems 1, 2a, 3, 4, 6, 7, and 8 and Objectives 1, 2, 4, 5, 7, and 8 are addressed by the proposed actions.

V. Proposed Actions and Alternatives in this Amendment

A. Identification of Additional Problems in the Fishery and an Objective for the FMP

Preferred Option A-1

The Councils have identified three additional problems and expanded three existing problems.

4: Inconsistencies in state and federal regulations make management and enforcement difficult and can result in fishing the resource beyond the allocation.

Rationale: Existing Problem 4 is expanded to include enforcement difficulties.

6: The extent of mixing and the appropriate boundaries between some migratory groups are uncertain. This complicates management and could result in allocation of landings to the wrong group, thus affecting ABC estimates for both groups.

Rationale: Existing Problem 6 is expanded to cite the danger of overestimating ABC for a depleted stock if it is mixed with a more abundant group.

8: Excessive effort and low quotas have resulted in closures which deprive some traditional fisheries of access to the resource and which precludes access to some valuable markets.

Rationale: Existing Problem 8 is expanded to address seasonal market opportunity such as Lent.

11. Bycatch needs to be quantified better.

Rationale: Estimates of bycatch in the Gulf shrimp fleet in the 1980s are available; however, this information needs to be updated, and information in the South Atlantic area is needed.

12. Violations of state and federal regulations continue.

Rationale: Enforcement efforts have been effective in some areas; however, violations are still occurring and management efforts are less effective as a result.

13. There may be a problem of localized depletion of dolphin due to heavy localized fishing pressure.

Rationale: When dolphins are available, large catches by an individual vessel may easily be made. These large catches may reduce the availability and fishing success both locally and in other areas along the dolphin's migratory route. It is not the Councils' intent to preclude a state from implementing more restrictive regulations on the dolphin fishery to address local fishing problems.

A new objective (8) is proposed as follows:

8. To optimize the social and economic benefits of the coastal migratory pelagic fisheries.

Rationale: This new objective provides a goal to enhance economic benefits to all groups.

Rejected Option A-2: No change; no recognition of additional problems or objectives.

Rationale: The Councils rejected this option in order to identify and be responsive to fishery issues.

B. Rebuilding Overfished Stocks Within a Specific Period

Preferred Option B-1: Section 12.6.1.1, number A-4, paragraph b., is revised as follows:

b. When a stock is overfished (as defined in a), the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed 12 years for king mackerel beginning in 1985 and 7 years for Spanish mackerel beginning in 1987. (Note: The revised mechanism for seasonal framework adjustments appears in Appendix I).

Discussion:

a. Ecological: The proposed recovery periods are slightly more than a generation time, 10 years for king mackerel and 5 years for Spanish mackerel (1992 Report of the Stock Assessment Panel) and have been deemed an appropriate period for remedial management measures to be effective. The recovery periods began when the migratory groups were identified as being overfished and when remedial recovery programs were initiated.

b. Socioeconomic: These periods provide the Councils with sufficient latitude to provide a recovery strategy without closing the fishery or severely impacting the economy or social structure of participants.

c. Environmental: Providing for recovery of overfished stocks with a reasonable allowable catch for users would have long term favorable results to both the fishery and human environment. Short term reduction of allowable catch, if severe, would have unfavorable economic effects on users (see Regulatory Impact Review (RIR)).

Rejected Option B-2: No change.

Amendment 5 provided a definition of overfishing in order to comply with new guidelines as follows: Section 12.6.1.1, number A-4.

a. A mackerel or cobia stock shall be considered overfished if the spawning potential ratio (SPR) is less than the target level percentage recommended by the assessment group, approved by the Scientific and Statistical Committee (SSC), and adopted by the Councils. The target level percentage shall not be less than 20 percent. (The Councils have subsequently set a minimum index for SPR of 30 percent for king mackerel and Spanish mackerel with the 1990 seasonal adjustment based on more recent data provided by the assessment group and endorsed by the SSC.)

b. When a stock is overfished (as defined in a.), the act of overfishing is defined as harvesting at a rate that is not consistent with a program to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges for recovery periods consistent with a program to rebuild an overfished stock.

c. When a stock is not overfished (as defined in a.), the act of overfishing is defined as a harvest rate that if continued would lead to a state of the stock that would not at least allow a harvest of OY on a continuing basis, and the assessment group will develop ABC ranges based upon OY (currently MSY).

Discussion:

NOAA General Counsel has pointed out that the 602 guidelines require that the FMP must contain a recovery program for overfished stocks within a specified period. The current definition as stated above, therefore, fails to comply with the guidelines and should be revised. The status quo has essentially the same ecological, economic, and environmental consequences since the recovery measures remain the same. Only legal specification of the recovery period changes.

Rejected Option B-3: Section 12.6.1.1, number A-4, paragraph b., is revised as follows:

b. When a stock is overfished (as defined in a), the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed one and one-half generation times for that species. The recovery period begins when the management program is initiated on the overfished stock.

Discussion:

a. Ecological: This period of one and one-half generation time (15 years for king mackerel and 7.5 years for Spanish mackerel) is judged to be adequate to restore the stock and allow sufficient flexibility for the Councils to consider various management options. However, the Councils preferred to specify the recovery period rather than use multiples of the generation time.

b. Socioeconomic: This period of recovery provides the Councils with some latitude to adjust the recovery period to meet the socioeconomic needs of persons dependent on the particular fishery.

c. Environmental: Long-term results in restoration of the stock would not be achieved as quickly, but short term impacts on users could be less severe if higher catches were allowed. No impact is anticipated on the habitat.

Rejected Option B-4: When a stock is overfished (as defined in a), the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed one generation time for that species (10 years for king mackerel and 5 years for Spanish mackerel).

Discussion:

a. Ecological: Recovery can be accomplished within this period but would require more conservative management than the preferred option.

b. Socioeconomic: This suggested period for recovery provides less leeway for economic considerations than the preferred option. Lower allowable catches would affect users (see RIR).

c. Environmental: Long term recovery of the fishery would be reached later if higher allowable catches were allowed. No impact is expected on the habitat.

Rejected Option B-5: Specify that the recovery period for overfished stocks be no longer than _____ years.

When a stock is overfished (as defined in a.), the act of overfishing is defined as harvesting at a rate that is not consistent with a program to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges for recovery periods not to exceed _____ years.

Discussion:

a. Ecological: Specification of one fixed period of recovery resulted in chaos in management under the Gulf Reef Fish FMP when new data showed that red snapper recovery was virtually impossible within a prescribed 10-year recovery period without closing directed and bycatch fisheries. Also, recovery periods vary among species depending on generation time and appearance of strong year classes.

b. Socioeconomic: Meeting a 10-year recovery period in the Gulf Reef Fish FMP was socioeconomically unacceptable, and the plan is being revised to accommodate a longer recovery period. Any specification of a period for recovery should be flexible and long enough to allow for socioeconomic as well as biological considerations in setting TAC. Allowance must also be made for fishing after quota closures in waters of those states with incompatible regulations.

c. Environmental: One specified recovery period for all migratory groups of all species would have different effects on shorter-lived species than on the longer-lived species. This could affect the fishery and users when inappropriately too long or short. No impact on the habitat is anticipated.

C. Frequency of Assessments and Adjustments

Preferred Option C-1: Biennial Stock Assessments and Preseason Adjustments.

Section 12.6.1.1A is revised in part to read:

A. An assessment group appointed by the Councils will normally reassess the condition of each stock of king and Spanish mackerel and cobia in alternate years for the purpose of providing for any needed preseason adjustment of TAC and other framework measures. However, in the event of changes in the stocks or fisheries, the Councils may request additional assessments as may be needed. The Councils, however, may continue to make annual seasonal adjustments within parameters of the most recent stock assessment. The assessment group shall be composed of NMFS scientists, Council staff, Scientific and Statistical Committee members, and other state, university, and private scientists as deemed appropriate by the Councils.

(Note: The revised mechanism for framework seasonal adjustment appears in its entirety in Appendix 1.)

Discussion:

a. Ecological: Annual assessments and adjustments may be in excess of what is needed. Annual tinkering with TAC provides instability and does not allow sufficient time for measures to demonstrate their effectiveness. Some adjustment of bag limits may be needed between assessment years in the event of excessive recreational catches. The change would allow this.

b. Socioeconomic: Biennial adjustment of TAC would give commercial users more stability in planning to harvest quotas. Federal costs of management would be reduced considerably.

c. Environmental: This proposed measure is procedural and has no environmental implications.

Rejected Option C-2: No Change. Annual Stock Assessment and Preseason Adjustments.

An assessment group appointed by the Councils will reassess the condition of each stock of king and Spanish mackerel and cobia in the management unit on an annual basis.

Discussion:

a. Ecological: Stock recovery has proven to be slow for king and Spanish mackerels. Changes in ABC ranges have been more the result of better data than in changes in stock conditions.

b. Socioeconomic: Annual changes in TAC confuse recreational fishermen as bag limits vary, and commercial fishermen are frustrated over annual variation of the commercial quotas. Management costs are high.

c. Environmental: No effect.

D. Framework Seasonal Adjustment Actions

Preferred Option D-1: Additional Framework Options

Section 1.2.6.1.1 D is revised as follows:

D. If changes are needed in MSYs, TACs, quotas, bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, or initial permits for each stock of king or Spanish mackerel or cobia, the Councils will advise the Regional Director of the Southeast Region of the National Marine Fisheries Service (RD) in writing of their recommendations, accompanied by the assessment group's report, relevant background material, and public comment.

Recommendations with respect to the Atlantic groups of king and Spanish mackerel will be the responsibility of the South Atlantic Council, and those for the Gulf groups of king and Spanish mackerel will be the responsibility of the Gulf Council. This report shall be submitted each year by such date as may be specified by the Councils. (Note: the revised mechanism for framework seasonal adjustment appears in its entirety in Appendix I.)

Discussion:

a. Ecological: The procedure for seasonal adjustments, as may be recommended by the Councils and which may be implemented by the Regional Director by modified Notice Action, is revised to include implementation or adjustment of size limits, vessel trip limits, closed seasons or areas, and gear restrictions, as well as the current allowable adjustment of MSYs, TACs, quotas, bag limits, and initial requirement of permits. Inclusion of these additional management options will provide the Councils and RD with more flexibility to respond to management needs to restore overfished stocks and achieve OY. The Gulf Council's Reef Fish FMP allows this flexibility as does Amendment 4 to the South Atlantic Council's Snapper-Grouper FMP.

b. Socioeconomic: Additional flexibility will allow more efficient management at lower public cost. Regulatory impact reviews are to be provided when changes are proposed.

c. Environmental: Given that restoration of stocks is beneficial to the fishery and users, more rapid response in needed management would enhance the environment.

Rejected Option D-2: No change. Seasonal adjustments are limited to MSYs, TACs, quotas, bag limits, and permits.

Discussion:

a. Ecological: Currently, adjustment of size limits, vessel trip limits, closed seasons (periods), or areas, and gear restrictions requires a plan amendment which takes six to eight months to prepare, review, and implement. This delays implementation of management adjustments and could impede stock recovery or attainment of OY.

b. Socioeconomic: Management costs would remain higher and response to changing conditions slower if plan amendment is the only option for management response.

c. Environmental: The current requirement of FMP amendment to make changes slows stock recovery.

E. Stock Identification and Allocation of Gulf Migratory Group King Mackerel

Preferred Option E-1: When the Council's stock assessment panel is able to provide ABC ranges for separate subgroups within the Gulf migratory group, the separation is to be at the Florida-Alabama border and is based on allele frequencies. The TACs for both subgroups of Gulf king mackerel are to continue to be allocated at 68 percent for recreational and 32 percent for commercial fishermen and are to be first implemented with the seasonal adjustment for that fishing year under the framework procedure. (See Appendix III for current mackerel allocations).

Discussion:

a. Ecological: Separate management of the subgroups could provide better opportunity to address the particular requirements of the subgroups. The Councils have previously in Amendment 5 recognized the existence of the two subgroups based on allele frequencies. More recent studies indicate the separation should be at the Alabama-Florida border (Table I) which also corresponds with the current commercial allocation. Lack of data on Mexican catch of king mackerel has prevented the assessment panel from providing ABC ranges for the western subgroup of king mackerel. When this information becomes available, the more accurate allowable catches should be implemented.

b. Socioeconomic: The ratio continues to be based on the ratio of the historic catches from 1975-1979 as provided in Amendment 1. Because recreational catch data were not available for that period, an average of the 1979 and 1980 seasonal catch was used as proxy (Table 2). Total average catch was 18.3 million pounds with an average commercial catch of 5.536 million pounds and recreational catch of 12.781 million pounds or a ratio of 30-70. Two percent of the recreational portion was transferred to the commercial allocation to allow for recreational catch that may be sold. This transfer appears to continue to be appropriate (see discussion of sale of recreationally caught fish in Florida in Rejected Option E-2).

Note that Table 2 is from Amendment 1 and is not comparable with catches in Table 3 which are based on a different fishing year and variable proportions of mixes of the two Gulf subgroups.

c. Environmental: There are no environmental changes to the fishery or habitat. This option maintains the current ratio of allocation in the division of the Gulf group king mackerel. Effect on the human environment is discussed in the RIR.

Table 1

Proportion western fish by state by year using fishing year (July 1 - June 30) in the Gulf of Mexico based on peptidase (GL-2) A allele frequencies.[1] (Source: SEFC, Panama City Lab.)

State	1984-1989	1984	1985	1986	1987	1988	1989
Florida (Gulf Coast)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Alabama	0.471	- -	- -	0.0000 (-0.028)[2]	0.470	1.000 (*1.047)	0.664
Mississippi	0.669	- -	- -	0.613	0.831	0.592	0.839
Louisiana	0.645	- -	0.553	0.678	0.687	0.701	0.481
Texas (east)	0.936	- -	- -	0.878	0.721	1.000 (+1.035)	0.835
Texas (south)	0.867	0.599	0.452	0.860	0.969	0.858	0.913
Texas (Total)	0.846	0.599	0.452	0.870	0.932	0.967	0.875
Mexico	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Year	Fe	Fw
1984	.023	.910 (using 1985 value)
1985	.074	.910
1986	.190	.789
1987	.078	.810
1988	.093	.883
1989	.131	.969
1984-1989	.117	.839

[1] Estimates as of 9/30/90 based on Allendorf and Utter (1979) and Pella and Milner (1987). P-(Fx-Fa)/(Fw-Fe) where P-proportion of western fish; Fx, Fe, and Fw are the Allele frequencies of peptidase (GL-2) in area in question, eastern fish, and western fish. Fe is Florida (Gulf Coast) and Fw is Mexico (Veracruz), respectively.

[2] Maximum value is 1.000 and minimum value is 0.000. Values in parenthesis ( ) are calculated values

Rejected Option E-2: Revise the allocation of Gulf group king mackerel to provide 70 percent of TAC to recreational fishermen and 30 percent to commercial fishermen. The revision is to be implemented when the TAC is increased so as not to decrease the commercial allocation.

Discussion:

a. Ecological: No change.

b. Socioeconomic: Implementation of Amendment 5 eliminated a provision that stated that recreational catch may be sold; thus, sale of mackerel became subject to state regulations.

c. Environmental: (See environmental discussion of Option E-1).

Because the sale of king mackerel by recreational fishermen may be expected to be reduced, the two percent transfer may no longer be appropriate. Implementing the revision on increase of TAC will not impose additional hardship on the commercial users. Texas and Louisiana laws prohibit the sale of fish taken by recreational fishermen. Alabama and Mississippi do not have separate residential recreational and commercial licenses; however, fishermen must possess a commercial license for sale.

Florida law requires that fishermen to be eligible for state permits to sell mackerel and other "restricted species" must have derived 25 percent of their total income or $5,000, whichever is less, from the sale of saltwater products. In order to estimate the sale of recreationally-caught king mackerel believed to be mostly from charter boats, the Florida Department of Natural Resources calculated the sale of king mackerel after the commercial quota was filled on January 3, 1991. This is the first year for which there were state quotas in Florida. Historically, fishing (commercially and recreationally) for king mackerel was suspended only when the federal quota was reached. From January 4, 1991, until July 1991, Florida landings are limited to the recreational bag limit of one fish per person per day. From January 4 through May, reported commercial landings of Gulf group king mackerel were 36,000 pounds (James E. McKenna, Jr. personal communication, 1991). Thus, Florida charterboat sales for that five-month period amounted to 0.85 percent of the TAC. The transfer of two percent from the recreational to the commercial allocation, therefore, seems appropriate.

Rejected Option E-3: Revise the TAC and allocations for Gulf group king mackerel to be separated into eastern and western subgroups. The new allocations are to become effective for the fishing year in which the stock assessment panel is able to provide ABC ranges for the separate subgroups. The separation is to be at the Florida-Alabama line based on allele frequencies. The revised allocations could be based on one of the following:

1. Maintain ratio of 32 percent for the commercial sector and 68 percent for the recreational sector until such time as the recreational bag limit allows 4 fish per person per day. Subsequent increases in TAC would accrue to the commercial sector after that level of the bag limit is attained; or

2. Reallocate using the ratio on the basis of some historic period of catch from Table 4; or

3. Reallocate for greatest economic benefits.

Discussion:

a. Ecological: No effect. ABC ranges are developed within guidelines to prevent overfishing.

b. Socioeconomic: There are various options for allocating between recreational and commercial fishermen. Actual catch data by migratory group for U.S. recreational and commercial fishermen are now available from 1979 through 1989 (Table 3). Catches were first restricted in 1983 when a hook-and-line commercial quota was reached and the fishery closed for king mackerel. Bag limits and commercial quotas for Atlantic and Gulf groups were implemented and catches were severely restricted in FY 1985. A commercial fishery for king mackerel developed off Louisiana in 1982. When the commercial quota was allocated to zones, the western zone was given 31 percent of the quota based on its greatest calendar year of landings (1982).

If separate ABCs and TACs for the two groups are to be implemented in a seasonal adjustment, an allocation must have been specified in a previous amendment. The Councils have tried to allocate fairly between recreational and commercial fishermen by basing the allocation ratio on some historic period of unregulated harvest. A variety of options are available as indicated in Tables 2, 3, and 4. Allocating for maximum economic benefits could unfairly displace some groups of current users of the resource.

c. Environmental: (See environmental discussion of Option E-1).

Rejected Option E-4: Allocate king mackerel caught between the Volusia-Flagler line and the Dade-Monroe line in Florida to the appropriate migratory group based on the best available scientific information on the proportions of each group in the catch from this mixing zone.

Discussion:

a. Ecological: Migratory patterns may have changed with a change in ratio of abundance since earlier tagging studies were made. NMFS proposes new tagging studies in South Florida in 1991 through 1993. When data become available, appropriate changes may be made by plan amendment. Currently, the stocks are being managed conservatively.

b. Socioeconomic: If the ratio of abundance has changed with the proportion of Atlantic group fish increasing, Atlantic fishermen may have lower quotas than may be appropriate. However, insufficient data are available to risk increasing TAC on depleted stocks of Gulf fish in the mixing zone by redesignating them as Atlantic group fish.

c. Environmental: (See environmental discussion of Option E-1).

Rejected Option E-5: No change. The Gulf king mackerel migratory group extends from Florida through Yucatan, Mexico.

Discussion:

a. Ecological: Studies using tag recovery and electrophoretic analysis of allele frequencies have convinced the Councils and their scientific advisors that two migratory groups of king mackerel exist in the Gulf of Mexico with a zone of mixing from Alabama through Texas. This was a part of Amendment 5. Some type of action is required to initiate the revision of management and to allocate fairly between users.

b. Socioeconomic: Allocation between recreational and commercial fishermen would remain unchanged.

c. Environmental: (See environmental discussion of Option E-1).

Table 2
(from Amendment 1)
Historic Catch by Migratory Group, 1975-1979[1] (Landings in Thousands of Pounds)
GULF GROUP

Year 1	Total Commercial	Net [2]	Hook and Line	Recreational[4]	Grand Total
1974-1975	4,888	3,174	1,714	12,781	17,669
1975-1976	6,359	4,465	1,894	12,781	19,140
1976-1977	8,332	5,770	2,562	12,781	21,113
1977-1978	4,434	2,425	2,009	12,781	17,215
1978-1979	3,668	1,990	1,678	12,781	16,449
Average Landings	5,536	3,565	1,971	12,781	18,317
Average Percent[3]	29.7	19.0	10.7	70.3	

[1] Season equals November 1st-October 31st for the Gulf Group.
[2] Net catch assumed to occur after January 1st each year.
[3] Average percent calculated on five-year average percent (not on percent of five-year average landings)
[4] Recreational catch is 1979-1980 average. East Florida divided as in stock assessment.

Table 3

(From 1991 Report of Mackerel Stock Assessment Panel)
King Mackerel Gulf Stock Catch Summary for Weight in Thousands of Pounds
(July - June Fishing Year)

The listings for East and West Gulf represent catch estimates derived by assuming a zone of mixing between these two hypothesized stocks. The assumed mixing zone ranges from Alabama through Texas with variable proportions of the catch attributed to each hypothesized stock as a function of distance along the U.S. Gulf of Mexico.

	East Gulf			West Gulf			U.S. Gulf			Mexico	Gulf		
Year	Com	Rec	Total	Com	Rec	Total	Com	Rec	Total	Com	Com	Rec	Tot
79[1]	4509	2270	6779	<0.5	2056	2057	4509	4326	8836	--	4509	4326	88
80	6154	9015	15168	<0.5	4695	4695	6154	13709	19863	--	6154	13709	198
81	5997	3856	9852	<0.5	4100	4100	5997	7956	13952	--	5997	7956	139
82	3921	2445	6366	837	1292	2129	4758	3738	8495	--	4758	3738	84
83	2634	1395	4029	348	756	1104	2982	2151	5134	--	2982	2151	51
84	2575	2886	5461	604	897	1500	3179	3783	6962	2831	6010	3783	97
85	2921	1674	4595	574	895	1469	3495	2569	6063	5301	8796	2569	113
86[2]	852	2269	3121	307	778	1084	1159	3046	4205	7425	8584	3046	116
87[3]	686	1497	2184	175	528	703	861	2025	2887	4661	5523	2025	75
88[4]	1103	3555	4658	302	582	884	1405	4137	5542	4945	6350	4137	104
89[5]	1373	2646	4018	433	473	906	1805	3119	4924	4945	8374	3119	114

[1]Fishing year 1979 begins on 1 July 1979 and ends on 30 June 1980.

[2]1986 FY: ABC = 1.2 - 2.9 million lbs; TAC = 2.9 million lbs.; Rec allocation = 1.97 million lbs. (bag=2/3), Com allocation = 0.93 million lbs., Purse = 0.06 million lbs. (E zone = 0.6, W zone = 0.27 million lbs.).
[3]1987 FY: ABC = 0.6 - 2.7 million lbs.; TAC = 2.2 million lbs., Rec allocation = 1.50 million lbs. (bag=2/3), Com allocation = 0.70 million lbs., (E zone = 0.48, W zone = 0.22 million lbs.).
[4]1988 FY: ABC = 0.5 - 4.3 million lbs.; TAC = 3.4 million lbs., Rec allocation = 2.31 million lbs. (bag=2/3), Com allocation = 1.09 million lbs., (E zone = 0.75, W zone = 0.34 million lbs.).
[5]1989 FY: ABC = 2.7 - 5.8 million lbs., TAC = 4.5 million lbs., Rec allocation = 2.89 million lbs. (bag=2/3), Com allocation = 1.36 million lbs., (E zone = 0.94, W zone = 0.42 million lbs.).

TABLE 4

Catch ratios derived from the above table for various combinations of years are listed below. A commercial fishery for king mackerel developed off Louisiana in 1982.

	Eastern Gulf	Western Gulf
Years	Comm/Rec % Ratio	Comm/Rec % Ratio
1979-1984	57-43	19-81
1979-1982	58-42	10-90
1979-1981	56-44	.01-99.99
1982-1984	58-42	37-63

F. Commercial Possession Limits for Atlantic Spanish mackerel

Preferred Option F-1: A new Section is added as follows:

12.6.5.2 Commercial Vessel Possession Limits

For the purpose of allocating commercial catches, Atlantic Spanish mackerel are separated into a northern zone (north of the Florida-Georgia line) and a southern zone (Florida east coast to the Dade-Monroe line). In the northern zone boats would be restricted to possession limits of 3,500 pounds of Spanish mackerel.

The southern zone possession limits are meant to be consistent with limits in state waters.

(a) April 1-November 30: 1,500 pounds per vessel per day.

(b) December 1 until 80 percent of adjusted quota is taken: (Vessel fishing days begin at 6:00 a.m. and extend until 6:00 a.m. the following day, and vessels must be unloaded by 6:00 p.m. of that following day.)

Monday, Wednesday, and Fridays: unlimited harvest.

Tuesdays and Thursdays: 1,500 pounds per vessel per day.

Saturdays and Sundays: 500 pounds per vessel per day.

(c) After 80 percent of adjusted quota is reached: 1000 pounds per vessel per day.

(d) When 100 percent of adjusted quota is reached: 500 pounds per vessel per day to the end of the fishing year (March 31). Adjusted quota compensates for estimated catches of 500 pounds per vessel per day to the end of the season.

(e) **The adjusted quota for Atlantic migratory group Spanish mackerel is 3.25 million pounds, and is implemented for the fishing year that commenced April 1, 1992. The adjusted allocation and the trip limits may be modified in accordance with the framework procedure. (Note: The revised mechanism for framework seasonal adjustments appears in its entirety in Appendix 1.)**

Discussion:

a. Ecological: Commercial net boats are capable of landing large quantities (1/2 million pounds) of Spanish mackerel in a day, thus, quickly exceeding a quota by a substantial amount. By spreading the same commercial catch over a longer period, the localized effect of heavy fishing pressure is lessened. Catches are more evenly distributed geographically.

b. Socioeconomic: The Councils previously considered possession limits in Amendment 5 but rejected them as being too cumbersome for regional management. Florida, where the net fishery exists, proposed internal trip limits to extend the period of the fishery and to distribute the catch more equitably among Florida commercial fishermen. A federal court decision has held that state implementation of trip limits is improper because they discriminate against Florida fishermen fishing in federal waters, thus, providing unequal rights protection. Florida seeks to re-establish these trip limits through joint federal regulation at the request of small and large boat net fishermen in order to protect the resource and allocate fairly. Possession limits in federal waters are intended to be consistent with state regulations.

The Councils have adopted these possession limits which were developed with, and accepted by, representatives of both the large and small boat commercial Spanish mackerel fishery. The April 1-November 30 period allows small boats to fish but still protects those fish which may remain on the winter grounds into April (the next fishing year) from a second quota being taken from the same winter group. The December 1 to 80 percent of adjusted quota allocation divides the peak of the season between large vessels (Monday, Wednesday, and Friday) and small boats on Tuesday and Thursday. There are potential distributional consequences of this action which are elaborated in the RIR. Limited catch of 500 pounds on weekends corresponds to Florida law to prevent conflict with recreational fishermen. The 1,000 pound trip limit after 80 percent of the adjusted quota is taken reserves some catch for small vessel harvesters and provides fish for the higher value market in the Lenten season although industry profitability may not necessarily increase in this situation.

In recent years, landings in the Mid-Atlantic area from April through August have increased to over 600,000 pounds and will accelerate the reaching of the adjusted quota. This will tend to reduce the allocation to the unlimited catch per trip period beginning December 1, which is the profitable season for the larger net boats. This is analyzed in the accompanying RIR.

The 500 pound daily limit after the adjusted quota is reached allows small vessels to continue fishing through March. Large mesh nets are used to take limited numbers of large Spanish mackerel which bring a relatively higher value during March. This amount of catch is estimated and subtracted from the quota to set the adjusted quota. In the 1991-1992 season, the federal quota was reached in the December, but fishing continued in Florida waters under a 500 pound trip limit. Preliminary estimates of those catches are 57,000, 124,000, and 116,000 pounds in December, January, and February, respectively. While it is difficult to project the rate of catch with the new possession limits, the Councils anticipate that the adjusted quota will extend through January. Then the reserve of 250,000 pounds (calculated at 125,000 per month) would allow continued fishing under the 500 pound trip limit. Thus, the adjusted quota for the 1992-1993 season is 3.5 million pounds less the 0.25 million pounds or 3.25 million pounds. Florida monitors the catches and would advise NMFS of catch statistics as the quotas are reached. (Other scenarios are depicted in the accompanying RIR).

c. Environmental: This issue is partly one of allocation, but it does have beneficial effects on the fishery by reducing pulse fishing on first available schools of fish.

Rejected Option F-2: For the purpose of allocating commercial catches separate Atlantic Spanish mackerel into a northern zone (north of the Florida-Georgia line) and a southern zone (Florida east coast to the Dade-Monroe line. In the northern zone, boats would be restricted to trip limits of 3,500 pounds of king and/or Spanish mackerel.

For the southern zone there were two additional options:

Rejected Option F-2a. The Florida Marine Fisheries Commission originally proposed for Spanish mackerel:

East Coast: 1,500 pounds from April 1-November 30, then unlimited harvest allowed until 50 percent of the quota is projected to be harvested, then 10,000 pounds until 75 percent of the quota is projected to be harvested, then 1,500 pounds until the adjusted quota is reached, then 500 pounds until March 31 or:

Rejected Option F-2b. The Organized Fishermen of Florida had proposed for east coast Spanish mackerel:

April 1-November 30: 2,500 pound trip limits;

December 1 until 50 percent of quota reached: unlimited daily catch;

50 percent to 75 percent of quota: unlimited catch per trip every other day only;

At 75 percent of quota: 1,500 pound trip limits until the adjusted quota is filled;

Weekend closures begin at 50 percent of quota;

After quota is reached go to 500 pounds daily trip limit (The projected total amount will have been figured in quota calculations);

April 1 until 75 percent of quota: 2,500 pounds trip limit at any time unlimited daily harvest is not allowed;

If daily projection shows less than 200,000 pounds remaining on any particular segment then next segment begins.

Discussion:

a. Ecological: Little impact except that reduced daily limits lessen the chance of exceeding the quota before a closure can be initiated.

b. Socioeconomic: Daily limits would extend the fishing season and distribute the catch more equitably among fishermen and among different geographic areas. The management is complicated, but there are relatively few commercial Spanish mackerel boats that are affected.

c. Environmental: These two rejected variations in establishing possession limits were modified to the preferred option in a compromise between the South Atlantic Council and representatives of the commercial fishermen. The environmental impact is the same as the preferred option. Changes made were more of a socioeconomic nature to comply with more traditional fishing patterns.

Rejected Option F-3: No change. No commercial trip (possession) limits for Atlantic Spanish mackerel.

Discussion:

a. Ecological: Because of the large capacity of the net fleet which is capable of taking one-half million pounds in a single day, a commercial quota (3.5 million pounds in 1991) can quickly be exceeded by a large amount. Overwintering mackerel that remain schooled into April become vulnerable to a second quota when the new fishing year begins April 1.

b. Socioeconomic: Small net boats may be at a disadvantage when larger vessels can quickly fill the quota. The Councils had previously rejected trip limits as cumbersome micromanagement. The state of Florida closely monitors catch from the local areas where the net fishery occurs. Therefore, with the state monitoring the catches, the Councils found it advantageous to allocate the commercial catch more fairly among users and distribute it over time. The possession limit option was selected.

c. Environmental: By reducing the likelihood of the fleet to exceed the commercial quota by intensive fishing, the preferred option has more beneficial effects than the status quo. The benefits are in maintaining healthy stocks in the fishery, allocating fairly among fishermen, and providing fresh product to consumers over a longer period of time.

G. Income Requirement for Commercial Permits

Preferred Option G-1: Section 12.6.4.1 A is revised in part as follows.

A. Commercial Permits

Annual permits are required of the owner or operator of boats fishing in the EEZ under the commercial quota on king and Spanish mackerel. These vessels are exempt from the recreational bag limit. To be eligible for a permit, the owner or operator must be able to show that at least 10 percent of his earned income was derived from commercial fishing, i.e., sale of catch, during one of three preceding calendar years. (Note: The procedure and requirements for commercial permits as amended appear in Appendix 2.)

Discussion:

a. Ecological: No change.

b. Socioeconomic: The limitation of only the previous calendar year to qualify for the income requirement has caused undue hardship on some individuals who would normally qualify as commercial fishermen. Some examples where long term commercial fishermen fail to qualify in one year are illness (self or family), loss and rebuilding of vessel, and call to military duty. By allowing a fisherman to qualify in one of the three preceding years, some hardship cases would be eliminated while following the intent that non-commercial fishermen be restricted to the bag limit. The requirement that permits must be issued only for a permit year of April through the following March is also deleted to simplify processing.

c. Environmental: The change is of a socioeconomic nature and is discussed more fully in the RIR.

Option G-2: No change. Annual permits are required of the owner or operator of boats fishing in the EEZ under the commercial quota on king and Spanish mackerel. These vessels are exempt from the recreational bag limit. To be eligible for a permit, the owner or operator must be able to show that at least 10 percent of his earned income was derived from commercial fishing, i.e., sale of catch, during the preceding calendar year.

Discussion:

a. Ecological: No change.

b. Socioeconomic: Amendment 1 states:

"The limitation of permits to commercial fishing vessels is not intended as economic distribution; rather it is to be a means of achieving an equitable reduction in catch by both recreational and commercial fishermen. The allocations are based on recent catch ratios. In order to prevent large numbers of recreational fishermen from fishing under the commercial permit system, not selling their catches, and causing TAC to be exceeded through this uncounted catch, the permit limitation to commercial fishermen has been added. The 10 percent of earned income from commercial fishing was judged by the Councils to be sufficient to include those who may be partially dependent on social security, retirement benefits, or investments. New entrants in the king mackerel fishery may establish eligibility with a record of income from other commercial fisheries and bag limit sales."

c. Environmental: The preferred option corrects a procedure that causes economic hardship to some permit applicants. It is discussed as a socioeconomic issue.

H. Control of Recreational Allocation

Preferred Option H-1:

Section 12.6.6.1 is revised:

12.6.6.1 King and Spanish Mackerel Bag Limits

The recreational allocation of mackerels will be controlled by bag limits for anglers per day with a one-day possession limit. Charter and head boats on multi-day trips may have two-day possession limits provided that two qualified captains are aboard and anglers have been provided with receipts for multi-day trips. Different bag limits may be set for anglers on charter or private recreational vessels. The bag limit is intended to reduce the recreational catch and distribute it fairly throughout the fishing year.

If, under the framework procedure for seasonal adjustments, the RD determines that a Council-proposed bag limit for an overfished group of Gulf king mackerel is expected to exceed the recreational allocation and rejects the proposal, the bag limit reverts to one fish per person per day.

Section 12.6.1.1.E. is also revised to reflect this change (see Appendix I).

Discussion:

a. Ecological: Total catch under a bag limit is subject to changes in availability of fish and effort, both of which may vary seasonally due to recruitment, economic conditions, weather, and other variable influences. Thus, setting an appropriate bag limit is a matter of trial and adjustment. Catch predictions may err in providing too much or too little catch. If limits are set too high, the recreational allocation may be exceeded and restoration of overfished stocks may be delayed. The annual recreational catch for Gulf king mackerel has exceeded its allocation each year since 1985 (Table 5). The measure is intended to prevent these overruns while allowing an appropriate bag limit throughout the year. Should the Council propose a bag limit that the Regional Director finds will exceed the allocations, he may reject it. The bag limit for that overfished Gulf king mackerel group instead of remaining unchanged, would revert to one fish for the next season. By adopting the no reversion to zero provision, the Councils will encourage states to set their bag limits consistent with the federal bag limits.

b. Socioeconomic: Allowing an appropriate bag limit to remain in effect through a fishing year provides equal opportunity and access to anglers in all geographic areas through which the fish may migrate. Early reversion of a bag limit to zero under the current management arrangement for migratory groups defined as being overfished has deprived anglers of opportunity to retain their catch in those areas where the fish occur in the latter part of the season. More specifically, anglers in South Florida have been deprived of a fishery in the winter and spring due to a zero bag limit for Gulf group king mackerel in the EEZ.

c. Environmental: The preferred option addresses a socioeconomic problem, the reversion of the recreational bag limit to zero in mid season, by allowing the bag limit implemented by the Regional Director to remain in effect through the season. There is a risk that high effort or an abundance of fish could cause the recreational allocation to be exceeded. This could be addressed by adjusting the bag limit the following season.

Rejected Option H-2: No change. On migratory groups which are defined as being overfished, the bag limit for that group will revert to zero when its quota is caught.

Discussion:

a. Ecological: The reversion to zero was added to limit catches from overfished stocks from exceeding TAC if bag limits were set too high. Even with this provision, projections of estimated catches must be made because actual catch data are in two-month waves reported after an additional two months. Overruns of catch occur most often from catches from state waters after the federal bag limit reverted to zero. For example, from January 4 to July 1 after closure of the 1990-1991 commercial quota, Florida Department of Natural Resources recorded sales of 37,000 pounds of king mackerel. Presumably, these were taken from state waters under the state's one fish bag limit by charterboats holding commercial permits.

b. Socioeconomic: Currently, the recreational quota is being exceeded, and portions of South Florida where all of the fish may be beyond state jurisdiction (when locally available and the EEZ is closed) are deprived of fishing opportunity.

c. Environmental: The socioeconomic problem of bag limit closure would remain unchanged. Overruns of the allocation by states allowing fishing after the closure of federal waters may continue.

Rejected Option H-3: The recreational bag limit for a stock defined as being overfished will be reduced by 50 percent when 75 percent of the recreational allocation is projected to be taken. The bag limit would not revert to zero.

Discussion:

a. Ecological: This would allow fishing to continue in the EEZ at a reduced level throughout the fishing year. TAC can still be exceeded, particularly if higher bag limits are allowed in state waters.

b. Socioeconomic: This would provide a more even distribution of fish and access to areas now deprived because of reversion of the bag limit to zero. Coordination with state regulations would be difficult.

c. Environmental: The effect is similar to Option H-1.

Rejected Option H-4: Suballocate the Gulf group king mackerel recreational allocation into equal six-month quotas. The bag limit is to revert to zero when the quota is filled.

Discussion:

a. Ecological: In the 1989-1990 season, the bag limit did not revert to zero until the end of May. Approximately 50 percent of the total catch was taken by the end of December (Table 6); thus, equal subquotas could be set for six-month periods, July-December and January-June.

b. Socioeconomic: This action could result in two closures for a migratory group in a 12-month period. If the Gulf group is divided into eastern and western groups, there could be four Gulf closures in 12 months.

c. Environmental: With this option there could be two closures instead of one. States which would adopt cooperative closures may find two openings and closures difficult to administer.

TABLE 5

Mackerel Catches Compared with Quotas
Pounds x 1000

Fishing Year	Commercial Quota	Commercial Catch (%)	Recreational Quota	Recreational Catch(%)	Total TAC	Total Catch(%)
Gulf Group King Mackerel						
1986	930	1159(125)	1970	3046(155)	2900	4205(145)
1987	700	861(123)	1500	2025(135)	2200	2887(131)
1988	1090	1405(129)	2310	4137(179)	3400	5542(163)
1989	1360	1883(138)	2890	3313(115)	4250	5196(122)
1990	1360	1655(122)	2890	4945(171)	4250	6600(155)
Atlantic Group King Mackerel(NC-FL)						
1986	3590	2823(79)	6090	5138(84)	9880	7961(81)
1987	3590	3430(96)	6090	3740(61)	9880	7170(74)
1988	2600	3065(118)	4400	4743(108)	7000	7808(112)
1989	3340	2626(78)	5660	3129(55)	9000	5756(64)
1990	3080	2619(85)	5220	3456(66)	8300	6075
Gulf Group Spanish Mackerel						
1987	1420	2505(176)	1080	3038(281)	2500	5543(222)
1988	2850	3848(135)	2150	1861(87)	5000	5710(114)
1989	2990	1803(60)	2260	1560(69)	5250	3673(70)
1990	2990	1998(67)	2260	1710(76)	5250	3708(71)
Atlantic Group Spanish Mackerel (NC-FL)						
1987	2360	3256(138)	740	1407(190)	3100	4663(150)
1988	3040	3197(105)	960	2442(254)	4000	5729(143)
1989	4560	3541(78)	1440	1275(89)	6000	4816(80)
1990	3140	2987(95)	1860	1828(98)	5000	4815(96)

Source: 1992 Report of the Mackerel Stock Assessment Panel

Rejected Option H-5: Applicants for charter boat permits for fishing for coastal pelagics in the EEZ must agree to conform to the more restrictive of federal or state of landing bag limits regardless of where fishing occurs.

Discussion:

a. Ecological: This type of permit control is used in the joint Coral FMP and Atlantic Bluefish FMP. According to the Marine Recreational Fishery Statistical Survey (MRFSS), 31,000 Gulf king mackerel were taken by charter boats in Florida waters in January and February 1991, after the bag limit in the EEZ reverted to zero. This option should be coupled with one of the previous options which reduce the bag limit to extend through a season or provide seasonal subquotas. The intent of this option is to keep the recreational catch within its allocation without the bag limit reverting to zero.

b. Socioeconomic: The beneficiaries of maintaining a Gulf king mackerel bag limit through the fishing year are the South Florida charterboats who have lost winter seasons and those off Texas who lose a June fishery due to closures.

c. Environmental: Seasonal closures would still occur but permitted charterboat operators would not be able to fish in open state waters. This would enhance recovery of overfished stocks but disrupt the income of charterboat fishermen.

Table 6

1989-1990 Recreational Catch of Gulf Group King Mackerel

Wave	Catch 1000 Fish	Cum. Catch, 1000 Fish (Quota = 298)	Cum. Percentage Catch	Cum. Percentage
July-August	44	44	11	15
September-October	104.4	148.4	37	48
November-December	61.6	210	52	70
January-February	40.8	250.8	62	84
March-April	88	338.8	84	114
May-June*	63.7	402.5	100	135

*Bag limit reverted to zero May 21.

I. Modifications of Fishing Years (Currently, April-March for Atlantic and Gulf Spanish Mackerels and Atlantic King Mackerel, and July-June for Gulf King Mackerel

Preferred Option I-1: Section 12.2 is revised as follows:

Section 12.2 Fishing Year

The fishing year for recreational allocations is the calendar year, January 1 through December 31. For all Spanish mackerel and Atlantic group king mackerel, the fishing year for commercial

allocations is April 1 through March 31. For Gulf group king mackerel, the fishing year for commercial allocations is July 1 through June 30.

For other species the fishing year for commercial allocations is the calendar year.

Discussion:

a. Ecological: The fishing year for the recreational allocations is revised to be the calendar year, January through December. Bag limits are to be set seasonally for the following calendar year and in accord with Option H-1 which provides that the bag limit will not revert to zero when the allocation is taken. There is no change in the commercial fishing years, and commercial quotas will continue to be monitored for those periods.

b. Socioeconomic: Currently, bag limits are recommended by the Councils in April but are implemented retroactively in July or August. This season the change in the Atlantic king mackerel bag limit did not become effective until September, though the fishing year began last April. By having all bag limits become effective for the following calendar year, NMFS will have sufficient time for implementation, the states will have the opportunity to adopt compatible regulations for state waters, and more importantly, recreational fishermen can come to expect any changes with the calendar year.

   Because Option H-1 establishes a bag limit for the entire fishing season, this change does not change the regional opportunity for access to fish due to seasonal migrations.

c. Environmental: This action is administrative and will have no impact on the environment if the bag limit does not revert to zero.

Rejected Option I-2: The recreational and commercial fishing year for Gulf and Atlantic groups of king and Spanish mackerels is to be May 1 through April 30. The winter boundary for Atlantic-Gulf king mackerel would change May 1.

Discussion:

a. Ecological: This period closely fits a biological season for the species. In May, the fish will have departed from their winter grounds where the commercial fishery predominantly occurs. April is a transitional month depending on the weather. Following a prolonged, cold winter, the fish may remain on the winter grounds well into April as in 1988 when 653,000 pounds of king mackerel were taken there in the first three weeks of April. In that instance, 25 percent of the next season's quota was taken from the same group of overwintering fish. The May 1 boundary change and fishing year would eliminate this problem.

   A uniform fishing year for all mackerel groups will reduce confusion for fishermen. Recreational catch statistics are tabulated in two-month waves, with March-April being the second wave. Thus, for statistical purposes, the wave is currently being divided equally into two fishing years; though this is unlikely to reflect actual catch.

   Seasonal adjustments are currently being implemented retroactively for three of the four mackerel groups. A change in schedule of the annual assessment would allow all adjustments to be implemented at the beginning of the fishing year.

   The Councils selected the fishing years to begin when the stocks are widely distributed, and no one geographic area would have exclusive access during the first half of the fishing year.

When Amendment 1 was being developed, the technical advisors suggested that April is a transitional period in the biological year, and mid-month would be an appropriate time for the boundary shift. However, for statistical purposes it was suggested the effective date be at the end of a month.

b. Socioeconomic: The scheduling of the fishing year has some allocation effects when an allowable recreational or commercial catch may not extend through a season. A fall opening is favorable to South Florida where a winter fishery would have first opportunity. A spring opening would be more beneficial to the areas of the Northern and Western Gulf and the Atlantic states where the fishery occurs in the warmer months. With this option, some provision should be made to provide for a winter recreational fishing opportunity off South Florida for king mackerel.

c. Environmental: A change in the commercial fishing year would affect geographical allocation by availability. The Councils believe the present commercial seasons are fair, but are reviewing stock identification and fishing years for future consideration for change as data become available. There is no effect on the habitat.

Rejected Option I-3: The recreational and commercial fishing year for all mackerel groups is April 1 through March 31.

Discussion:

a. Ecological: The results would be similar to the May-April fishing year except that there will continue to be occasions when winter schools will remain vulnerable to an April net fishery.

b. Socioeconomic: There would be greater access for the spring-summer-fall fishery and less for the winter fishery.

c. Environmental: There would be limited impact on the fishery itself. There is no effect on the habitat.

Rejected Option I-4: Recreational and commercial fishing year for Gulf king mackerel to be November-October.

Rationale: This option was originally considered in Amendment 1 but was rejected. South Florida would have a fall, winter, and spring season. The Louisiana commercial fishery would be directed at the large, overwintering individuals which have a lower value per pound and comprise the major brood stock for the Gulf group.

Socioeconomic: The commercial fishery in the Gulf would be limited to South Florida and overwintering fish off Louisiana. The recreational quota would be allocated mostly to South Florida with a short summer season in the Northern Gulf.

Environmental: A fall opening would limit commercial fishing to the fall and winter months when heavy net fishing begins on the compact schools. The quota could be quickly taken, and there would be no opportunity for the present summer fishing season.

Rejected Option I-5: No change. Gulf and Atlantic Spanish and Atlantic king mackerel would have a April-March fishing year. Gulf king mackerel would have a July-June fishing year.

Discussion:

a. Ecological: Pre-season adjustments are out of phase. Commercial fishery reopens in April some years on overwintering fish.

b. Socioeconomic: South Florida is deprived of its winter recreational season and the Northern Gulf of its spring season. Commercial fishery is closed for lucrative Lenten season.

c. Environmental: Retention of status quo would not affect the environment. The change of the recreational fishing year in the preferred option is administrative only in its effect.

Rejected Option I-6: The fishing year for all commercial mackerels is to be set for a fishing year of September through August.

Discussion:

a. Ecological: No effect.

b. Socioeconomic: The economic impact would result from first access to available fish during the early portion of the season before the allocation for a species is taken. In September mackerels are moving from the summer grounds to overwintering grounds. Fish are available in Florida and Louisiana. The Florida net fishery for Spanish mackerel begins in November or December and for king mackerel in December. The quota is usually filled about the end of December for eastern zone Gulf king mackerel with a July opening. The closure for western zone Gulf king mackerel (the Louisiana fishery) usually occurs in November with a July opening. A later opening in the western zone would extend the fishery into the schools of large individuals overwintering off Louisiana.

c. Ecological: There could be an impact on the stocks by taking older fish, but the effect is not known.

J. Minimum Size Limits

Preferred Option J-1: Section 12.6.7 Size Limits is revised as follows:

12.6.7.1 Spanish mackerel minimum size limit is 12 inches (30.5 cm) fork length. An undersized commercial catch of up to five percent by weight of the boat catch of Spanish mackerel is allowed.

12.6.7.2.1 Minimum size limit is 20 inches (50.8 cm.) fork length for king mackerel. An undersized commercial catch of up to five percent by weight of the boat catch of king mackerel is allowed.

12.6.7.2 Minimum size is 33 inches (83.8 cm) fork length for cobia.

Discussion:

a. Ecological: This action increases the minimum size limit for king mackerel from 12 inch fork length to 20 inch fork length as a means of enhancing yield, providing more spawners, and reducing the rate of the recreational catch. There is no change for Spanish mackerel and cobia except that reference to total length is deleted to prevent confusion. The tips of mackerel tails are brittle and easily broken in handling, so fork length measure only is preferred. Powers and

Parrack showed the distribution of the 1989-1990 recreational catch of king mackerel by age and size (Table 7). For example, a minimum size limit of 20 inches fork length in the 1989-1990 season could have resulted in a reduction in retained catch of about 38 percent. A large portion of the relatively high recreational harvest of small fish in the year of this analysis was taken in the shore mode of the MRFSS, thus occurring in state-regulated waters. Catch and release mortality is not known. Protection of smaller fish will enable more individuals to reach sexual maturity which begins at age two for some males and age three for some females. Most fish are mature and spawn the following year. An increase in the minimum size (now about 0.5 pounds) will also enhance yield per recruit.

There may also be some benefit from discouraging the highgrading of smaller-caught fish as subsequent larger individuals are landed.

b. Socioeconomic: A reduction in the rate of reaching the recreational allocation will allow a larger bag limit for recreational fishermen; because it reduces the likelihood of exceeding the allocation.

A minimum size limit set at 25-inch fork length or less would have little effect on the commercial fishery as the minimum mesh size of 4-3/4 inches excludes those fish. Small fish are not targeted by hook-and-line commercial fishermen because they are not profitable. Again, almost all are over 25 inches.

A minimum size limit of 25 inches which approximates the maximum yield per recruit was considered and rejected in the original FMP because of its possible adverse impact on the August recreational fishery off the Florida Panhandle. It was estimated that catch would be reduced by about 80 percent with the 25 inch minimum size limit. A minimum size limit of 20 inches would be more acceptable in that area and would still reduce landings by about 38 percent. A 20-inch king mackerel weighs about two pounds.

c. Environmental: The effect on the fishery of the increase in size of king mackerel caught and retained by fishermen would be that more fish would be allowed to reach maturity at age 3 (about 23 inches) instead of being taken at age 1. This will tend to slow harvest of recreational allocation where these smaller fish are now taken. The results are beneficial to the recovery of overfished stocks.

TABLE 7

GULF KING MACKEREL
RECREATIONAL CATCH BY SIZE AND AGE
IN 1989-1990

(Adapted from Powers and Parrack, 1991)

Age	Percent of Recreational Catch at Age	Approximate Length at Age (Fork Length in Inches)	Approximate Weight in Pounds
0	0.35	10	0.3
1	27.05	14	0.8
2	10.47	19	1.9
3	30.38	23	3.5
4	18.49	27	5.6

Rejected Option J-2: Increase the minimum size limit for king mackerel from 12-inch fork length (14-inch total length) to 20 inch fork length or the more stringent of state or federal size regulations.

Discussion:

a. Ecological: There is some interest in a larger minimum size limit in North Carolina, and this wording would allow its enforcement. The range of maximum yield per recruit is broad and is near 25 inch fork length.

b. Socioeconomic: Compatibility of state-federal regulations would enhance enforcement; however, differences in federal regulations within the EEZ would cause confusion. There may also be problems of preemption of state size limits with this concept.

c. Environmental: Minimum sizes greater than 20-inches would allow more fish to reach maturity. Higher yields can be attained at 24-inches. Both results would be beneficial to the fishery. The Councils, however, rejected the option because of confusion that might result from geographic variations in the size limit.

Rejected Option J-3: No change. Minimum size limit for king mackerel remains 12-inch fork length (14-inch total length).

Discussion:

a. Ecological: This size limit has minimal effect as very few king mackerel less than 12 inches are taken in the directed fishery. The measure was implemented to facilitate identification and enforcement of the 12-inch size limit on Spanish mackerel.

b. Socioeconomic: This measure has little social impact because few fish under this size are usually taken in the directed fishery. Because bag limits differ between Spanish and king mackerel, this action does not require additional ability for species identification.

c. Environmental: Status quo was rejected because the preferred option was judged to provide greater benefits to the fishery and users.

VI. Environmental Consequences

Environmental Consequences of proposed actions and alternatives have been discussed with each proposed action.

Physical Environment

The actions proposed in this amendment will have no impact on the physical environment. Gear traditionally used in this fishery (hook-and-line and run around gill-nets) has no adverse impact on the bottom substrate or other habitat. Continuing studies have provided no new information that further defines the relationship between stocks and habitat.

Fishing Resources

The proposed action is intended to protect coastal pelagic fish stocks from recruitment and growth overfishing while allocating allowable catch among fishermen.

Human Environment and Social Impact Assessment

The management of fisheries may directly affect the human environment. Social data on users in the mackerel fishery affected by this amendment are sparse. Most of the known impact is of an economic nature. A determination of the net impact on the users of the resource by the proposed action will better enable the Councils and the Regional Director to establish a more responsive management regime. This is considered in the attached regulatory impact review and initial regulatory flexibility analysis. The impact on fishery resource users in adjacent areas has been coordinated with the appropriate Council.

Effect on Endangered Species and Marine Mammals

NMFS conducted a consultation under Section 7 of the Endangered Species Act and prepared a biological opinion. It found that this amendment is not likely to jeopardize endangered species and marine mammals. However, gill activity could adversely affect recovery of sea turtles; though there is no evidence of this. Additional information is needed.

Effect on Wetlands

The proposed action has no effect on any flood plains, wetlands, trails, or rivers.

Vessel Safety

The proposal for implementation of daily commercial trip possession limits for Atlantic Spanish mackerel was discussed with representatives of the affected Coast Guard District and commercial fishermen. They believed that because some catch was allowed on all days during the restricted daily limit period, fishermen would not require alternative fishing opportunity to compensate for unsafe weather for fishing. It was felt that these possession limits posed fewer safety problems than the current derby fishing in which vessels tend to fish as hard as possible before the quota is taken.

Therefore, the proposed actions do not impose requirements for use of unsafe (or other) gear nor do they direct fishing effort to periods of adverse weather conditions.

Data collection

This proposed action does not contain a collection of information requirement and, therefore, is not subject to the Paperwork Reduction Act.

Scientific Data Needs

To monitor stocks to determine whether overfishing occurs, the SEFC of NMFS currently monitors catch by size (age) to estimate recruitment and acceptable biological catch. No additional collection of scientific data would be required by this amendment.

Federalism

This proposed action does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under E.O. 12612.

Coastal Zone Management Consistency

The Assistant Administrator has determined that this proposed action will be implemented in a manner that is consistent to the maximum extent practicable with the approved coastal zone management program of the Gulf, South Atlantic and Mid-Atlantic states. This determination has been admitted for review by these states under Section 307 of the Coastal Zone Management Act.

VII. Conclusion

Mitigation measures related to the proposed action: No significant environmental impacts are expected; therefore, no mitigating actions are proposed.

Unavoidable adverse effects with implementation of the proposed actions and any negative net economic benefits are discussed in the Regulatory Impact Review.

Irreversible and irretrievable commitment of resources involved with the proposed action government costs are not expected to change significantly, if at all, as a result of this action.

Recommendation

Finding of No Significant Environmental Impact

In view of the analysis presented in this document, I have determined that the proposed action in this amendment to the Fishery Management Plan for Coastal Migratory Coastal Pelagics would not significantly affect the quality of the human environment with specific reference to the criteria contained in NDM 02-10 implementing the National Environmental Policy Act. Accordingly, the preparation of a Supplemental Environmental Impact Statement for this proposed action is not necessary.

Approved: _____ _____
Assistant/Administrator for Fisheries Date

Responsible Agencies

Gulf of Mexico Fishery Management Council
Lincoln Center, Suite 331
5401 West Kennedy Boulevard
Tampa, Florida 33609
813-228-2815

South Atlantic Fishery Management Council
Southpark Building, Suite 306
1 Southpark Circle
Charleston, South Carolina 29407

List of Agencies and Persons Consulted

Gulf of Mexico and South Atlantic Fishery Management Councils
- Scientific and Statistical Committees
- Advisory Panels
- Stock Assessment Panel

Coastal Zone Management Programs

National Marine Fisheries Service
- Southeast Fisheries Center
- Fisheries Operations Branch - Southeast Regional Office

List of Preparers

Gulf of Mexico Fishery Management Council
- Terrance R. Leary, Biologist
- Antonio B. Lamberte, Ph.D., Economist

South Atlantic Fishery Management Council
- Steven A. Berkeley, Biologist
- John Gauvin, Economist

Date and Location of Public Hearings

GULF COUNCIL HEARINGS

Date	City	Time	Location
November 19, 1991	Port Aransas, Texas	7:00 p.m.	University of Texas
November 25, 1991	Key West, Florida	7:00 p.m.	Old City Hall
December 2, 1991	Thibodaux, Louisiana	7:00 p.m.	Nichols State Univ-Guidry Stadium Century Club Room
December 4, 1991	Biloxi, Mississippi	7:00 p.m.	Mississippi Beach Resort
December 5, 1991	Mobile, Alabama	7:00 p.m.	Radisson Admiral Semmes
December 11, 1991	Panama City, Florida	9:00 a.m.	NMFS, Panama City Lab
December 12, 1991	Tampa, Florida	7:00 p.m.	Ramada Airport Hotel

SOUTH ATLANTIC COUNCIL HEARINGS

Date	City	Time	Location
November 26, 1991	West Palm Beach, Florida	6:00 p.m.	Royce Hotel
December 9, 1991	Norfolk, Virginia	6:00 p.m.	Quality Inn Lake Wright
December 9, 1991	Cocoa Beach, Florida	6:00 p.m.	Cocoa Beach Hilton
December 10, 1991	Manteo, North Carolina	6:00 p.m.	North Carolina Aquarium on Roanoke Island
December 10, 1991	Jacksonville Beach, Florida	6:00 p.m.	Holiday Inn - Oceanfront
December 11, 1991	Brunswick, Georgia	6:00 p.m.	Glynn Mall Suites Hotel
December 11, 1991	Morehead City, North Carolina	6:00 p.m.	Carteret Community College
December 12, 1991	Wilmington, North Carolina	6:00 p.m.	New Hanover County Courthouse
December 13, 1991	Charleston, South Carolina	6:00 p.m.	South Carolina Wildlife and Marine Resources Department

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Beardsley, G.L. 1967. Age, growth, and reproduction of the dolphin. Coryphaena hippurus, in the Straits of Florida. Copeia 1967: .441-451.

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Powers, J.E., and N.C. Parrack, 1991. Ramifications of 1991 Mackerel Stock Assessment, NMFS-SEFC.

Stock Assessment Panel. 1992. 1992 Report of the Stock Assessment Panel. Gulf and South Atlantic Fishery Management Councils. Mimeo. 32 p.

Appendix I

Section 6.1.1: Mechanism for Determination of Framework Adjustments, as modified by this and previous amendments, is revised as follows:

Section 12.6.1.1

A. An assessment panel appointed by the Councils will normally reassess the condition of each stock or group of king and Spanish mackerel and cobia in alternate years for the purpose of providing for any needed preseason adjustment of TAC and other framework measures. However, in the event of changes in the stocks or fisheries, the Councils may request additional assessments as may be needed. The Councils, however, may make annual seasonal adjustments based on the most recent assessment.

The panel shall be composed of NMFS scientists, Council staff, Scientific and Statistical Committee members and other state, university, and private scientists as deemed appropriate by the Councils. The panel will address the following items for each stock:

1. Stock identity and distribution. This should include situations where there are groups of fish within a stock which are sufficiently different that they should be managed as separate units. If several possible stock divisions exist, the assessment panel should describe the likely alternatives.

2. MSY for each identified stock. If more than one possible stock division exists, MSY for each possible combination should be estimated.

3. Condition of the stock(s) or groups of fish within each stock which could be managed separately. When the panel is able to provide separate ABC ranges for the eastern and western groups of Gulf king mackerel, separated at the Alabama-Florida border, the ratio of the mix is to be calculated on allele frequencies. Allocations between recreational and commercial users are to remain unchanged or 68 to 32 percent. For each stock, this should include but not be limited to:

   a. Fishing mortality rate relative to F_{msy} or $F_{0.1}$.
   b. Abundance relative to an adequate spawning biomass.
   c. Trends in recruitment.
   d. Acceptable Biological Catch (ABC) which will result in long-term yield as near MSY as possible.
   e. Calculation of catch ratios based on catch statistics using procedures defined in the FMP.

4. Overfishing.

   a. A mackerel or cobia stock shall be considered overfished if the spawning potential ratio (SPR) is less than the target level percentage recommended by the assessment panel, approved by the Scientific and Statistical Committee (SSC), and adopted by the Councils.

      The target level percentage shall not be less than 20 percent. (Based on the recommendation of the assessment panel and approval by the SSC, the Councils and RD have approved a SPR of 30 percent for king and Spanish mackerels.)

   b. When a stock is overfished (as defined in a), the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment panel will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified SPR. The recovery period is <u>not to exceed 12 years for king mackerel beginning in 1985 and 7 years for Spanish mackerel beginning in 1987</u>.

   c. When a stock is not overfished [as defined in (a)], the act of overfishing is defined as a harvest

rate that if continued would lead to a state of the stock that would not at least allow a harvest of OY on a continuing basis, and the assessment panel will develop ABC ranges based upon OY (currently MSY).

5. Management options. If recreational or commercial fishermen have achieved or are expected to achieve their allocations, the assessment panel may delineate possible options for nonquota restrictions on harvest, including effective levels for such actions as:

   a. Bag limits
   b. Size limits
   c. Gear restrictions
   d. Vessel trip limits
   e. Closed season or areas, and
   f. Other options as requested by the Councils

6. Other biological questions as appropriate.

B. The assessment panel will prepare a written report with its recommendations for submission to the Councils, by such date as may be specified by the Councils. The report will contain the scientific basis for their recommendations and indicate the degree of reliability which the Council should place on the recommended stock divisions, levels of catch, and options for nonquota controls of the catch.

C. The Councils will consider the report and recommendations of the assessment panel and such public comments as are relevant to the assessment panel's submission. A public hearing will be held at a time and place where the Councils consider the panel's report. The Councils may convene the joint Advisory Panel and may convene the Scientific and Statistical Committee to provide advice prior to taking final action. After receiving public input, Councils will make findings on the need for changes.

D. If changes are needed in MSYs, TACs, quotas, bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, or initial requirement of permits for each stock of king or Spanish mackerel or cobia, the Councils will advise the Regional Director of the Southeast Region of the National Marine Fisheries Service (RD) in writing of their recommendations, accompanied by the assessment panel's report, relevant background material, and public comment.

   Recommendations with respect to the Atlantic groups of king and Spanish mackerel will be the responsibility of the South Atlantic Council, and those for the Gulf groups of king and Spanish mackerel will be the responsibility of the Gulf Council. This report shall be submitted by such date as may be specified by the Councils.

E. The RD will review the Councils' recommendations, supporting rationale, public comments, and other relevant information, and if he concurs with the recommendation, will draft regulations in accordance with the recommendations. He may also reject the recommendation, providing written reasons for rejection. In the event the RD rejects the recommendations, existing regulations shall remain in effect until resolved. However, if the RD finds that a proposed recreational bag limit for Gulf migratory group or groups of king mackerel is likely to exceed the allocation and rejects the Council's recommendation, the bag limit reverts to one fish per person per day.

F. If the RD concurs that the Councils' recommendations are consistent with the goals and objectives of the plan, the National Standards, and other applicable law, he shall implement the regulations by notice in the Federal Register prior to the appropriate fishing year or such dates as may be agreed upon with the Councils. A reasonable period for public comment shall be afforded, consistent with the urgency, if any, of the need to implement the management measure.

   Appropriate regulatory changes which may be implemented by the Regional Director by notice in the Federal Register include:

1. Adjustment of the point estimates of MSY for cobia, for Spanish mackerel within a range of 15.7 million pounds to 19.7 million pounds, and for king mackerel within a range of 21.9 million pounds to 35.2 million pounds.

2. Setting total allowable catches (TACs) for each stock or group of fish which should be managed separately, as identified in the FMP provided:

   a. No TAC may exceed the best point estimate of MSY by more than ten percent.
   b. No TAC may exceed the upper range of ABC if it results in overfishing as defined in Section 12.6.1.1, A.4.
   c. Downward adjustments of TAC of any amount are allowed in order to protect the stock and prevent overfishing.
   d. Reductions or increases in allocations as a result of changes in the TAC are to be as equitable as may be practical utilizing similar percentage changes to allocations for participants in a fishery. (Changes in bag limits cannot always accommodate the exact desired level of change.)

3. Adjusting user group allocations in response to changes in TACs according to the formula specified in the FMP.

   Implementing or modifying quotas, adjusted quotas, bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, or initial requirement of permits, as necessary to limit the catch of each user group to its allocation.

Appendix II

Permits

Section 12.6.4.1

A. Commercial Vessel Permits

Annual permits are required for vessels fishing under the commercial quota on king or Spanish mackerel. These vessels are exempt from the recreational bag limit. To be eligible for a commercial permit, the owner or operator of the vessel must be able to show he derived more than ten percent of his earned income from commercial fishing, i.e., the sale of his catch during one of three preceding calendar years.

An operator who is issued a permit must be aboard the vessel when it is operating under the permit. For a corporation to be eligible for a permit, a shareholder or officer of the corporation or the vessel operator must qualify.

Vessels fishing a group of fish for which commercial permits are issued and which do not possess a permit are presumed to be recreational boats and are subject to recreational bag limits.

Qualifying charterboats may obtain commercial permits to fish under the commercial quotas but must adhere to bag limits when under charter or when more than three persons are aboard.

Permits are transferable on the sale of vessel with new owner being responsible for changing name and address. The new owner or operator must be able to qualify.

Boats with permits must cease fishing for that group or zone for mackerel when its commercial quota is reached and the season closed. Charterboats with commercial permits may continue to fish under the bag limit.

A fee may be charged for the permit, but shall not exceed administrative costs incurred in issuing the permits. Fees are expected to be about $34.00.

The commercial vessel's official number is to be displayed on the port and starboard sides of the deck house or hull and on an appropriate weather deck so as to be clearly visible from enforcement vessels and aircraft. The number is to be in black Arabic numerals at least 18 inches in height for vessels over 65 feet in length and 10 inches in height for all other vessels.

12.6.4.1 B Charterboat Permits

Annual permits are required for charterboats fishing for coastal migratory pelagics for hire. Charterboats normally fish under bag limits but may also be eligible to obtain commercial permits to fish under the commercial quota when not under charter.

APPENDIX III

Allocations

12.6.3.1 King Mackerel Allocation

1. The TAC's for king mackerel have been divided between recreational and commercial fishermen based on catch ratios from 1975 to 1979.

2. The TAC for king mackerel in the Gulf group is to be allocated with 68 percent for the recreational fishermen and 32 percent for the commercial fishermen.

   When the Council's stock assessment panel is able to provide ABC ranges for separate eastern and western subgroups within the Gulf migratory group, the separation is to be at the Florida-Alabama border and is based on allele frequencies. The TACs for both subgroups of Gulf king mackerel are to continue to be allocated at 68 percent for recreational and 32 percent for commercial fishermen and are to be first implemented with the seasonal adjustment for that fishing year under the framework procedure.

3. Until separate ABC ranges and TACs for eastern and western Gulf subgroups can be developed, the commercial allocation for the Gulf migratory group is divided between eastern and western zones, with the separation to be the Florida-Alabama border and extending south. The allocation is divided with 69 percent of the commercial allocation for the eastern zone and 31 percent for the western zone.

4. For the Atlantic group of king mackerel, the TAC is allocated with 62.9 percent for recreational and 37.1 percent for commercial fishermen. No more than 0.4 million pounds may be harvested by purse seine.

12.6.3.3 Spanish Mackerel Allocation

1. Allocation of TAC for the Gulf migratory group of Spanish mackerel is to be divided between commercial and recreational fishermen based on the average ratio of the catch for the period 1979 through 1985. The ratio is to be 57 percent for commercial fishermen and 43 percent for recreational fishermen.

2. Allocation of TAC for the Atlantic group of Spanish mackerel is to be 50 percent for commercial fishermen and 50 percent for recreational fishermen.

APPENDIX IV

CONDITION OF THE STOCKS

(From the 1992 Report of the Mackerel Stock Assessment Panel)

Gulf Migratory Group King Mackerel

Over the time series from 1979 to 1990, U.S. landings from the Gulf group have ranged from 2.9 to 19.9 million pounds. Comparisons of annual landings are confounded by regulations implemented which restricted landings. The expected yield estimated by the Panel for the U.S. Gulf group of king mackerel in FY 91/92 is 7.1 million pounds.

The maximum fishing mortality rate was estimated for the directed fishery for age 3 fish, and including bycatch (age 0 fish), and was 0.31. This value for the directed fishery is less than that since the advent of regulations in 1985. The estimated F of .31 at age 3 is higher than the target of $F_{30\ percent\ SPR}$ (.19).

For the majority of the available time series, observed SPR (spawning potential ratio) has generally been less than 18 percent of maximum spawning potential. Realized or cohort specific SPR ranged from 6 percent-18 percent during the period from 1979-1990. Over the past few years SPR has increased, indicating recovery. However, over the past ten years, SPR has been reduced 20 to 30 percent by trawl bycatch.

The panel recommends that this stock should be considered overfished when realized SPR is less than 30 percent relative to maximum spawning potential. The current SPR is 19 percent. While the stock is still considered overfished, estimated SPR is higher than that estimated for the previous year in the previous assessment. Overage of catches in the past year and in the future will continue to reduce the ABC potential for this stock. Note that the most recent rates of fishing have been above the $F_{30\ percent\ SPR}$ criterion.

Atlantic Migratory Group King Mackerel

Catches have remained relatively stable since 1981. Catch estimates for 1979 and 1980 should be given less reliance because of initial estimation procedures in the MRFSS. Total yield varied between 5.8 and 9.4 million pounds during the period FY 1981 through FY 1990. Comparisons of annual landings are confounded by regulations implemented which restricted landings. The panel estimate of expected yield from this group during FY 91/92 is 6.4 million pounds.

Estimates of catch-at-age indicate that recruitment in recent years was higher than estimated early to mid-1980 levels. These year classes are beginning to enter the fishery in significant numbers as shown by VPA results and the basic catch-at-age data.

There appears to be an adequate spawning biomass present which should continue to increase in the future if increases in fishing mortality rates do not occur. SPR is estimated to generally be in excess of 30 percent of maximum spawning potential between fishing years 1981 and 1990. SPR ranged from 33 percent to 47 percent during this period.

The panel believes the Atlantic migratory group of king mackerel is not overfished because the fishing mortality rate is less than $F_{30\ percent\ SPR}$ and the spawning stock appears to be adequate. Presently, the SPR level is 47 percent.

Gulf Migratory Group Spanish Mackerel

Yields of Spanish mackerel from U.S. catches have ranged from 3.7 to 7.2 million pounds between FY 84/85 and 90/91. The expected U.S. yield for this group in FY 91/92 for both the recreational and commercial fisheries is 5.7 million pounds.

Since 1984, SPR has ranged from 20 to 29.7 percent of maximum spawning potential. The current rate of fishing is estimated to be less than $F_{30\ percent\ SPR}$. The SPR is estimated to be below 30 percent of maximum spawning potential. Presently, it is 29 percent, which is close to the 30 percent criterion. However, the stock has not recovered to the point where the panel feels the risk of recruitment overfishing is no longer a concern and, thus the Gulf group should be considered overfished.

Atlantic Migratory Group Spanish Mackerel

As with the Gulf group, the spawning biomass of the Atlantic Migratory Group of Spanish mackerel has been reduced to levels that are less than occurred in the 1970s and less than that which will produce maximum sustainable yields. However, fishing mortalities in the most recent years appear to be less than in 1984. The commercial quota had regularly been met within the first fishing month of each fishing year. The yield from this group has ranged from 3.5 to 6.3 million pounds between FY 1984 and 1990. The expected yield from this group in FY 91/92 is 6.2 million pounds.

We estimate that there have been recent increases in the spawning biomass which are expected to speed the stock toward recovery. SPR increased to close to 30 percent in 1990.

The estimated fishing mortality rate is less than the $F_{30\ percent\ SPR}$ rate and the SPR is near 30 percent when calculated using the weighted method (weighted by cohort strength). When the unweighted method is used to calculate realized SPR the level is greater than 30 percent. As such, Atlantic Spanish mackerel may be near its MSY level and longer overfished.

COBIA

Preliminary estimates from the Coastal Pelagic Management Plan set Maximum Sustainable Yield (MSY) at 1 million lbs. This estimate was based on the historic commercial fishery and did not recognize the magnitude of the recreational fishery. Commercial landings in the Gulf have been increasing while commercial landings in the Atlantic have remained relatively stable. Recreational landings appear to be more variable. Recreational catch estimates will tend to fluctuate and have large confidence limits due to the nature of the fishery as well as estimation procedures. Atlantic combined landings have remained relatively constant at approximately 0.9 million pounds, while Gulf catches have remained constant at approximately 1.3 million pounds. The combined catch of 2.2 million pounds far exceeds initial estimates of MSY, but have remained stable for greater than 1 generation period. Initial MYS estimates may have been low, as stable catches in excess of MSY are unlikely. The average catch from 1984-1991 appears to be stable and sustainable; therefore, the panel recommends replacement of MSY with 2.2 million pounds.

As limited size data are available and age at size is highly variable, cohorts are not clearly defined, and parameters are estimated with high uncertainty. A catch curve analysis was used to estimate instantaneous total mortality rate. Instantaneous fishing mortality rate for cobia in the U.S. Atlantic and Gulf was estimated at 0.15 using an estimated natural mortality rate of 0.4. Estimates of fishing mortality indicate the cobia fishery is operating at a level lower than $F_{30\ percent\ SPR}$ which was estimated at 0.4. Cobia are generally fished under a length limit that allows reproduction prior to recruitment to the fishery. This combined with restrictive bag limits appears to be acting to maintain F at a level which has prevented overfishing. Although current fishing mortality is well below $F_{30\ percent\ SPR}$ the panel does not recommend changes in regulations due to the uncertainty in the estimated parameters.

Dolphin

Commercial landings in the Atlantic have nearly tripled in weight and numbers since 1984 while Gulf catches have remained relatively stable. The commercial catch accounts for roughly 10 percent of the total landings, but is increasing in both the Atlantic and Gulf. Much of the commercial catch may be derived from recreational anglers that sell their catch. The entry of a new directed long line fishery in the Gulf was noted. Recreational landings appear to be more variable but have also generally increased since 1984. Atlantic combined landings have remained relatively constant at under 1 million pounds, except for peaks in 1985 and 1989. Gulf catches have fluctuated form 1.2 to 1.8 million pounds.

Dolphin are highly migratory, widely distributed, fast growing, short lived fish; and little is known about the stock structure. Thus, cohorts are not clearly defined. A catch curve analysis was used to estimate fishing mortality. Due to uncertainty in estimating natural mortality, fishing mortality was estimated assuming that M = 0.1. Under this condition, estimates of F do not exceed $F_{30\ percent\ SPR}$. Fluctuations in catch are expected, as population levels for dolphin are driven by recruitment variability.

REGULATORY IMPACT REVIEW

for

AMENDMENT 6

to

The Fishery Management Plan

for

Coastal Migratory Pelagics

in

The Gulf of Mexico

and

South Atlantic

Prepared by
Gulf of Mexico Fishery Management Council,
South Atlantic Fishery Management Council,
and
National Marine Fisheries Service

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INTRODUCTION

Executive Order (E.O.) 12291 "Federal Regulations" establishes guidelines for promulgating new regulations and reviewing existing regulations. Under these guidelines each agency, to the extent permitted by law, is expected to comply with the following requirements: (1) administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action; (2) regulatory action shall not be undertaken unless the potential benefit to society for the regulation outweighs the potential costs to society; (3) regulatory objectives shall be chosen to maximize the net benefits to society; (4) among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and (5) agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefit to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future.

In compliance with E. O. 12291, the Department of Commerce (DOC) and the National Oceanic and Atmospheric Administration (NOAA) have determined that this proposed amendment to the Fishery Management Plan for Coastal Migratory Pelagics in the Gulf of Mexico and South Atlantic reflect important DOC/NOAA policy concerns and are the object of considerable public interest. In such a case, DOC/NOAA require the preparation of a Regulatory Impact Review (RIR). The RIR provides a comprehensive review of the level and incidence of impact associated with the proposed or final regulatory actions. The 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 problems. The purpose of the 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. Furthermore, the RIR serves as the basis for determining whether any proposed regulations are "major" under the criteria provided in E.O. 11291 and whether the proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act of 1980 (RFA).

This RIR analyzes the probable impacts that the proposed alternatives for the plan amendment would have on the commercial and recreational mackerel fisheries in the Gulf of Mexico and South Atlantic.

COASTAL MIGRATORY PELAGICS PLAN

The Fishery Management Plan for the Coastal Migratory Pelagic Resources of the Gulf of Mexico and the South Atlantic (FMP) was prepared jointly by the Gulf of Mexico and South Atlantic Fishery Management Councils (Councils). The Assistant Administrator for Fisheries, NOAA (Assistant Administrator) approved the FMP on April 1, 1982, and the Secretary of Commerce (Secretary) implemented final regulations on February 4, 1983, under the authority of the Magnuson Fishery Conservation and Management Act, as amended (Magnuson Act). Amendment 1 to the FMP was prepared jointly by the Councils, approved on July 26, 1985 by the Regional Director, NMFS, and implemented September 22, 1985. Amendment 2 was submitted on April 1, 1987 and implemented in July, 1987. Amendment 3 was submitted on March 14, 1989 and approved measures were implemented on August 14, 1989; disapproved measures were resubmitted on January 15, 1990 and implemented on April 13, 1990. Amendment 4 was submitted on May 22, 1989 and was implemented on October

19,1989. Amendment 5 was submitted on March 19, 1990 and implemented August 20, 1990.

The FMP manages king and Spanish mackerel off coastal states in the Atlantic south of the New York/Connecticut border and throughout the U.S. Gulf of Mexico. Cobia is managed off southeastern states from the Virginia/North Carolina border to the U.S./Mexico border. The remaining coastal migratory pelagic fishes (cero, dolphin, little tunny, and in the Gulf only, bluefish) are currently not managed. Within the mackerel stocks, Gulf of Mexico and Atlantic migratory groups are distinguished for both species. Amendments 1 and 2 provide for annual assessments and adjustment of acceptable biological catch (ABC), total allowable catch (TAC), and bag limits for king and Spanish mackerels.

PROBLEMS AND ISSUES

The general problems in the fishery are enumerated in Section IV of the amendment document. The current proposed amendment attempts to address the following issues:

A. Identification of additional problems and an objective for the FMP.
B. Rebuilding overfished stocks within a specific period.
C. Frequency of assessments and adjustments.
D. Framework seasonal adjustment actions.
E. Stock identification and allocation of Gulf migratory group king mackerel.
F. Commercial possession limits for Atlantic Spanish mackerel
G. Income requirement for commercial permits.
H. Control of recreational allocation.
I. Modifications of fishing years.
J. Minimum size limits.

OBJECTIVES

The general management objectives are enumerated in Section V of the amendment document. The major change introduced by this amendment on objectives of the fishery is optimization of the economic benefits of the coastal pelagic fisheries.

METHODOLOGY AND FRAMEWORK FOR ANALYSIS

The alternatives considered are described below. Ideally, the present values of expected net yield streams over time associated with the different alternatives would be compared in evaluating impacts. Net yield streams in the present context mean producer and consumer surpluses in the commercial sector, recreational consumer surplus, and profitability in the for-hire sector of the coastal migratory pelagic fishery. However, such information is not available. Moreover, some of the issues considered in this amendment cannot be quantified. The approach taken in analyzing the effects of each alternative is essentially qualitative, and merely attempts to delineate the likely direction of effects on fishery participants. The impacts of each alternative are evaluated relative to the status quo, and where feasible compared with each other. Although the impact analysis is conducted from a national perspective, some attention is also given to the distributional/regional consequences of the proposed alternatives. A summary of expected net effects is provided at the end of the RIR.

IMPACTS OF ALTERNATIVE ACTIONS

A. Identification of Additional Problems in the Fishery and an Objective for the FMP

1. Additional Problems

1.1. Inconsistencies in state and federal regulations make management and enforcement difficult and can result in fishing the resource beyond the allocation.

1.2. The extent of mixing and the appropriate boundaries between some migratory groups are uncertain. This complicates management and could result in allocation of landings to the wrong group, thus affecting ABC estimates for both groups.

1.3. Excessive effort and low quotas have resulted in closures which deprive some traditional fisheries of access to the resource and which precludes access to some valuable markets.

1.4. Bycatch needs to be quantified better.

1.5. Violations of state and federal regulations continue.

1.6. There may be a problem of localized depletion of dolphin due to heavy localized fishing pressure.

The first three are modifications of problems already identified in the FMP, as amended. The first one explicitly includes in the previously identified problem its associated enforcement problem. This explicit recognition places in perspective both the enforcement mechanism and the structure of the regulations that provide leeways for rule violations to be perpetrated. The second problem has special implications on the setting of TAC for both the Gulf and South Atlantic groups of king mackerel. The Gulf group is considered overfished while the Atlantic group is not. At least for the past four years, the quota for the Gulf group has been filled and the fishery has been closed for both commercial and recreational sectors. The TAC for the South Atlantic group, on the other hand, has not been filled for the same time period. If the delineation of boundary for the Atlantic and Gulf groups of king mackerel had resulted into low TACs for the Gulf group or an earlier closure of the fishery, economic losses must have been borne by the various fishing groups targeting such migratory stock. The extent of the problem and economic losses resulting therefrom is not precisely known. It may only be noted that in its most recent report, the mackerel Stock Assessment Panel estimated that 5 to 25 percent of fish along the Atlantic coast of Florida in the winter belongs to the Gulf migratory group (Stock Assessment Panel Report, 1992). Earlier assessment estimated such percentage to be about 30 percent. The third problem is a natural offshoot of any quota regulation under an open access management system. Among the various coastal migratory pelagics currently managed under the plan, only king and Spanish mackerels are subject to quota management. In several instances, quota management of these species has resulted in closures of the fishery. In particular, early closures have characterized the commercial and recreational segments of the Gulf king mackerel fishery and the commercial segment of the Atlantic Spanish mackerel. Recent increases in the TACs for these species have minimally alleviated the problem. Explicit recognition of these problems has no socioeconomic impacts, but it does open avenues for exploring alternative ways to resolve the problem. This recognition has particular importance for the Atlantic group of Spanish mackerel which has recently been formally considered as no longer overfished (Stock Assessment Panel Report, 1992).

Bycatch of mackerel in other fisheries, particularly in the shrimp fishery has both stock and socioeconomic implications. Bycatch has been included in stock assessments, at least for the Gulf

migratory groups, but better estimates thereof, particularly for the South Atlantic need to be generated in order to more accurately determine the extent of the problem relative to the speed of rebuilding overfished mackerel stocks.

The fifth problem is partly a function of inconsistencies in state and federal regulations. Its recognition as a distinct problem in the fishery recognizes the need to improve enforcement and to promote better compliance.

The extent of the sixth problem is not known, but its recognition as a problem necessitates investigating the status of the stock and the fishery dependent on it.

2. Additional Objective

2.1. Optimize the economic benefits of the coastal pelagic fisheries.

Optimizing economic benefits entails both the optimal use of the resource and optimal allocation of the resource among competing user groups. Optimal use of the resource in this particular instance means full use of the resource while maintaining the reproductive capacity of the stock; that is, maintaining harvest at levels that maximize economic yield. Optimal allocation among competing user groups means allocating the mackerel stock to various users to achieve maximum economic benefit at the margin; that is, allocating the mackerel stock in such a way that the value of the last fish to each user group is equalized. Over the long run, this objective means maintaining a positive economic rent for the resource. Methods to achieve this objective oftentimes present concerns regarding the equity feature of the proposed measures.

B. Rebuilding Overfished Stocks Within a Specific Period

Preferred Option B-1: **When a stock is overfished, the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed 12 years for king mackerel beginning in 1985 and 7 years for Spanish mackerel beginning in 1987.**

Rejected Option B-2: **No change.**

Rejected Option B-3: **When a stock is overfished, the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed one and one-half generation times for that species. The recovery period begins when the management program is initiated on the overfished stock.**

Rejected Option B-4: When a stock is overfished, the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges based on a fishing mortality rate that will achieve and maintain at least the minimum specified spawning potential ratio (currently set at 30 percent). The recovery period is not to exceed one generation time for that species. The recovery period begins when the management program is initiated on the overfished stock.

Rejected Option B-5: Specify that the recovery period for overfished stocks be no longer than _____ years.

When a stock is overfished, the act of overfishing is defined as harvesting at a rate that is not consistent with programs to rebuild the stock to the target level percentage, and the assessment group will develop ABC ranges for recovery periods not to exceed ____ years.

The Stock Assessment Panel determined that generation time in the absence of fishing provided a maximum value or ceiling for recovery period that was dictated by the life history of the stock in the unexploited condition. Estimates of generation time used age specific estimates of natural mortality, fecundity, and a maturity schedule. Generation times were estimated to be 10 years for king mackerel, 5 years for Spanish mackerel, and 7 years for cobia (Stock Assessment Panel Report, 1992). For practically all options, the starting dates of the recovery period are 1985 for king mackerel and 1987 for Spanish mackerel. Table R1 below lists the recovery period for each option, both in number of years and as a multiple of the stock's generation time. Also included under each option is the remaining period from 1992 onward for achieving the target SPR.

Table R1

Comparison of Various Options for the Period of Stock Recovery

Management Option	Number of Years	Multiple of Generation Time	Remaining Years
King Mackerel			
Preferred Option B-1	12	1.2	5
Rejected Option B-2	Not provided	Not provided	Not provided
Rejected Option B-3	15	1.5	8
Rejected Option B-4	10	1	3
Rejected Option B-5	No chosen period	No chosen period	No chosen period
Spanish Mackerel			
Preferred Option B-1	7	1.4	2
Rejected Option B-2	Not provided	Not provided	Not provided
Rejected Option B-3	7.5	1.5	2.5
Rejected Option B-4	5	1	0
Rejected Option B-5	No chosen period	No chosen period	No chosen period

The various options by themselves do not have direct impacts on the fishery participants. However, the options set potential limits on the type of regulatory measures, particularly the TAC level, that may be established to achieve the stock rebuilding target for an overfished species. Implicit in all five options is the objective of balancing short-term losses with long-term gains. Depending on the initial SPR level of the subject species, the shorter the recovery period chosen, the larger will be the short-term costs to the various user groups. Gains, however, start to accrue at an earlier date.

Of the four major species in the management plan, the Gulf group of king mackerel (SPR= 19%) and Spanish mackerel (SPR = 29%) are formally declared as overfished. The latter stock though is very near the 30 percent target level for both species. Both the Atlantic king and Spanish mackerel are considered not to be overfished. Given such conditions, only the choice of recovery period for Gulf king mackerel has potential socioeconomic effects in the short run. In terms of the remaining years within which the 30 percent SPR should be achieved, the preferred option (5 years) falls in the middle of the other options (3 and 8 years). The second option does not specify a recovery period while the fifth option is not very specific on the recovery period. Noting that the SPR for Gulf king mackerel increased by 58 percent within the last year and is now estimated to be 19 percent, it would appear that none of the options would be so constraining as to require very restrictive measures. However, if the SPR level falls or its increase slows down substantially within a year or two from now, more short-term adverse impacts on user groups will be expected under the fourth option than under any of the others.

C. Frequency of Assessments and Adjustments

Preferred Option C-1: **Biennial stock assessments and preseason adjustments – An assessment group appointed by the Councils will normally reassess the condition of each stock of king and Spanish mackerel and cobia in alternate years for the purpose of providing for any needed preseason adjustment of TAC and other framework measures. However, in the event of changes in the stocks or fisheries, the Councils may request additional assessments as may be needed. The Councils, however, may continue to make annual seasonal adjustments within the parameters of the most recent stock assessment. The assessment group shall be composed of NMFS scientists, Council staff, Scientific and Statistical Committee members and other state, university and private scientists as deemed appropriate by the Councils. (See Appendix 1 of the amendment document for a more complete statement of the framework adjustment mechanism)**

Rejected Option C-2: **No change: Annual stock assessment and preseason adjustments – An assessment group appointed by the Councils will reassess condition of each stock of king and Spanish mackerel and cobia in the management unit on an annual basis.**

Under the preferred option, changes in TACs for king and Spanish mackerels and the supporting studies for such changes will be considered on a biennial rather than on annual basis as currently done.

Stock assessments have been the major driving force in management changes for the mackerel fishery as well as for many fisheries in the Gulf EEZ. The current framework procedure in the fishery plan for coastal migratory pelagics provides for an annual stock assessment. The stock assessment, as reviewed by the stock assessment panel, provides the sole basis for establishing first the ABC and then the TAC. The TAC is decided by the Council and submitted to the Secretary of Commerce for approval and implementation. A change to a biennial stock assessment will free up Council and analysts time

and costs associated with the annual exercise. In particular, SEFC personnel will have the time to do comprehensive assessments for other species, such as reef fish. In addition, the measures set under TAC remain in place for a two-year period, and thus may be adequately evaluated for their effectiveness. An annual setting of TAC following a stock assessment is estimated to cost the Federal government around $30,000 through meetings, travel, calculation of ABCs, and preparation and reviewing of all documents. Fishermen and other interested parties also expend some amounts through attendance of meetings of the Council and its associated committees. These will be the direct cost savings from the change in the frequency of stock assessments and accompanying changes in management measures. In addition, a longer period without rule changes enhances public compliance and state actions for compatible rules.

Since the stock assessment is the major source of changes in management, it provides both commercial and recreational resource users avenues for taking part in fishery management decisions. Reducing the frequency of stock assessments to once every two years concomitantly reduces the resource users' opportunity to directly impact management decisions. This will have minimal impacts on the segments of the fisheries targeting species that are not overfished or whose TACs have not been filled for a number of years, such as Gulf Spanish mackerel and Atlantic king mackerel. But for fisheries experiencing closures such as the Gulf king mackerel and Atlantic Spanish mackerel, this could result in some foregone benefits through increases in TACs. This latter may have particular relevance to Atlantic Spanish mackerel. The stock is no longer considered overfished but as recent as the last fishing season, the commercial fishery was closed for several months. However, annual changes in management measures could also negatively impact the various user groups, at least in the short run, through reductions in TACs. This may have particular relevance to the Gulf king mackerel fishery. Recently, the TAC for this fishery has been significantly increased. If there is a consequent drop in the SPR for this stock, the TAC may be subsequently reduced. For fisheries experiencing closures, the planning horizon would be lengthened under the preferred option, and thus some stability in catch expectations would be achieved. This condition would in turn give to those affected harvesters some flexibility in adjusting their operations to match their expected harvest. To some extent, a relatively known harvest over a two-year period would tend to dampen fluctuations in ex-vessel prices of mackerel, and would also assure local fish houses of some relatively steady supply of fish. In order to avoid frequent seasonal adjustments that could only affect the mentioned stability a relatively good projection of stock status is needed for setting a two-year quota.

Over the short run, this option is likely to reduce public and private cost. Over the long run, this option introduces a certain level of stability in the fishery. This stability, however, may not be totally beneficial to resource users under an open access system of management. In sum, a biennial (in contrast to annual) stock assessment is expected to result in benefits to resource users.

D. Framework Seasonal Adjustment Actions

Preferred Option D-1: Additional Framework Options - If changes are needed in MSYs, TACs, quotas, bag limits, size limits, vessel trip limits, closed seasons or areas, gear restrictions, or initial permits for each stock of king or Spanish mackerel or cobia, the Councils will advise the Regional Director of the Southeast Region of the National Marine Fisheries Service (RD) in writing of their recommendations, accompanied by the assessment group's report, relevant background material and public comment.

Recommendations with respect to the Atlantic groups of king and Spanish mackerel will be the responsibility of the South Atlantic Council, and those for the Gulf groups of king and Spanish mackerel will be the responsibility of the Gulf Council. This report shall be submitted each year by such date as may be specified by the Councils.

Rejected Option D-2: **No change. Seasonal adjustments are limited to MSYs, TACs, quotas, bag limits, and permits.**

Option D-1 simply adds to Option D-2 more management measures that can be included in the modified Notice of Action. Currently, the proposed additional options may only be adopted through plan amendment which normally takes a longer time to process for implementation. While the inclusion of these additional measures may be cost effective in formulating regulations and may allow more promptness in addressing problems with the stock, it nonetheless provides potentials to render more inefficient the commercial fishery in particular. There would also ensue distributional effects: vessel trip limits would generally favor smaller boats, gear restrictions would indirectly promote one gear type by restricting the use of others, and season/area closures may adversely affect one area or user group more than others. Size limits may have minimal effects on the revenues of the commercial sector, but could be an important factor affecting the overall benefits generated in the recreational sector. Although catch and release practice generates recreational value, a successful trip is generally associated with keeping the bag limit. In this context, the extent of negative effects on the recreational sector will depend on the established size limit. It is, however, possible that given a bag limit, the benefits from a higher size limit generated through catch/release practice and more angling trips could outweigh the benefit reductions through unsuccessful trips. Long-term analysis of the impacts of size limit will have to consider also the induced increase in release mortality. Evaluation of specific impacts will be conducted when adopting through framework adjustment any of the additional management measures.

E. Stock Identification and Allocation of Gulf Migratory Group King Mackerel

Preferred Option E-1: **When the Council's stock assessment panel is able to provide ABC ranges for separate subgroups within the Gulf migratory group, the separation is to be at the Florida-Alabama border and based on allele frequencies. The TACs for both subgroups of Gulf king mackerel are to continue to be allocated at 68 percent for recreational and 32 percent for commercial fishermen and are to be first implemented with the seasonal adjustment for that fishing year.**

Rejected Option E-2: **Revise the allocation of Gulf group king mackerel to provide 70 percent of TAC to recreational fishermen and 30 percent to commercial fishermen. The revision is to be implemented when the TAC is increased so as not to decrease the commercial allocation.**

Rejected Option E-3: Revise the TAC and allocations for Gulf group king mackerel to be separated into eastern and western subgroups. The new allocations are to become effective for the fishing year in which the stock assessment panel is able to provide ABC ranges for the separate subgroups. The separation is to be at the Florida-Alabama line based on allele frequencies. The revised allocations could be based on one of the following:

1. **Maintain ratio of 32 percent for the commercial sector and 68 percent for the recreational sector until such time as the recreational bag limit allows 4 fish per person per day. Subsequent increases in TAC would accrue to the commercial sector after that level of bag limit is attained; or**

2. **Reallocate using ratio on the basis of some historic period of catch; or**

3. **Reallocate for greatest economic benefits.**

Rejected Option E-4: Allocate king mackerel caught between the Volusia - Flagler line and the Dade - Monroe line in Florida to the appropriate migratory group based on best available scientific information on the proportions of each group in the catch from this mixing zone.

Rejected Option E-5: No change, the Gulf king mackerel migratory group extends from Florida through Yucatan, Mexico.

This set of options attempts to address two major issues, namely separation of the Gulf group of king mackerel into eastern and western Gulf for purposes of setting TACs, and allocation of king mackerel between commercial and recreational sectors. The options are not necessarily comparable as some options address only one of these two issues. In fact the fourth option addresses an entirely different issue which is that of apportioning king mackerel caught in eastern Florida between the Gulf group and Atlantic group.

If a stock separation has to be made, the preferred dividing line will the Florida-Alabama border. The dividing line is embodied in Option E-1 and Option E-3, the two options that address the stock separation issue. This dividing line coincides with the current division line for the allocation of the commercial Gulf king mackerel quota. The current allocation of commercial quota is 69 percent eastern zone and 31 percent western zone. For the 1992/1993 fishing season, given a TAC of 7.8 MP and commercial allocation of 2.5 MP, this allocation translates to 1.73 MP for the eastern zone and 0.77 MP for the western zone. The recreational quota is not divided into several geographical zones, although the eastern zone has historically accounted for most of the recreational catches; for example, in the 1991/1992 fishing season 89 percent of recreational quota was taken in the eastern zone (i.e., western Florida). A significant amount of recreational catch (0.63 MP) was also taken in the eastern zone after the recreational fishery in the EEZ closed for the season mainly because the fishery remained open in state waters. If separate TACs that would be instituted for the two zones resulted in quota reduction for both the commercial and recreational fishermen in the two zones, significant adverse economic impact would ensue therefrom. Closure of both the commercial and recreational segments of the Gulf king mackerel fishery has characterized the fishery for several years now. This is a strong indication of the high level of demand for king mackerel from both user groups. These adverse impacts

may be expected to be short term in nature if stock separation proves to be the prudent approach to conserve the resource. Quantitative estimates of impacts will be provided when various TACs are instituted.

The allocation issue is addressed in Options E-1 through E-3. Under the preferred option (Option E-1), the allocation continues to be 32 percent commercial and 68 percent recreational. This allocation was based on proportional commercial and recreational catches for the period 1975-1979. Recreational catches for the period was assumed to equal the 1979-1980 average catches which were then the only available information on recreational catches. The calculated commercial/recreational proportion was 30:70, but in the allocation 2 percentage points were subtracted from the recreational sector and added to the commercial allocation due to sales of some recreationally caught king mackerel. Option E-2 would bring the allocation to the calculated 30/70 proportion. Although Amendment 5 eliminated the provision that recreationally caught mackerel may be sold while the commercial fishery is open, sales of recreationally caught fish from charter boats are believed to still occur. Given this situation, Option E-2 would defeat the original purpose of reallocating 2 percentage points to the commercial sector. Using the 1992/1993 TAC, Option E-2 would mean that the commercial sector would be allocated 2.34 MP instead of 2.5 MP. Using the 1991 average king mackerel price of about $1.07 per pound and estimated price flexibility (Prochaska, 1978), the commercial sector would forego ex-vessel revenues of about $169,000. This scenario fits well the situation under Option E-2 considering the fact that the 1992/1993 TAC reflects a 2.05 MP increase from the previous year's TAC. Although the commercial sector would still be allocated a higher quota relative to the previous year, it would be foregoing revenues under Option E-2 relative to the status quo or Option E-1. Fishing costs are unlikely to change under Option E-2 relative to the status quo so that profitability of the commercial sector would also be lower under this option.

The magnitude of impacts of Options E-1 and E-3 would depend on the TAC established for the two identified zones. The direction of effects cannot be determined conclusively although some insights can be gained by examining historical catches. For the last three fishing years (1989/1990 through 1991/1992) catches in the eastern zone (i.e., western Florida) were distributed, on average, into 71 percent for recreational and 29 percent for commercial. The corresponding catch distribution for the western zone was 52 percent recreational and 48 percent commercial. Whatever the TAC established for each of the two zones, Options E-1 and E-3(1) would be slightly favorable to the commercial sector in the eastern zone and highly favorable to the recreational sector in the western zone. Under Option E-1 and assuming that the TAC for the respective zones approximates average catches for the last three years, anglers in the eastern zone would forego 0.12 MP in catches but those in the western zone would gain 0.21 MP, or a total gain of 0.09 MP for the recreational sector. Gains in the re-allocation to the recreational sector would be losses to the commercial sector. It appears from the depicted scenario that maintaining about the same percentage commercial/recreational allocation when a separate TAC for each zone is established would tend to slightly favor recreational anglers especially those in the western zone. However, if the condition under Option E-3(1) is met, i.e., the TAC allows a 4-fish bag limit for the recreational sector, the commercial sector will gain in terms of allocated catch and most likely also in terms of profitability. Option E-3(2) may also favor the commercial sector in the allocation of TAC although this would be highly dependent on the period chosen for the allocation. Whether economic benefit to the mackerel fishery is enhanced through the mentioned allocation options (Options E-1, E-3(1), and E-3(2)) cannot be ascertained.

Option E-3(3) offers more potential of directly addressing the identified objective of optimizing

economic benefits of the coastal pelagic fisheries. In this particular case, the choice of allocation serves as the vehicle to achieve the intended objective of maximizing economic benefits from the fisheries, but the appropriate framework for commercial/recreational allocation still needs to be developed or at least some consensus among social scientists about the appropriate allocation framework needs to be reached (see Report of the Socioeconomic Panel, 1992). Moreover, models within the chosen allocation framework have to be empirically estimated. In addition, the social consequences of any chosen re-allocation have to be determined.

F. Commercial Possession Limits for Atlantic Spanish Mackerel

Preferred Option F-1: For the purpose of allocating commercial catches, Atlantic Spanish mackerel are separated into a northern zone (north of the Florida-Georgia line) and a southern zone (Florida east coast to the Dade - Monroe line). In the northern zone boats would be restricted to possession limits of 3,500 pounds of Spanish mackerel.

(a) **April 1 - November 30: 1,500 lbs. per vessel per day.**

(b) **December 1 until 80 percent of adjusted quota is taken: (Vessel fishing days begin at 6:00 A.M. and extend until 6:00 A.M. the following day, and vessels must be unloaded by 6:00 P.M. of that following day.)**

Mondays, Wednesdays, and Fridays: unlimited harvest.

Tuesdays and Thursdays: 1,500 lbs. per vessel per day.

Saturdays and Sundays: 500 lbs. per vessel per day.

(c) **After 80 percent of adjusted quota is reached: 1,000 lbs. per vessel per day.**

(d) **When 100 percent of adjusted quota is reached: 500 lbs. per vessel per day. Adjusted quota compensates for estimated catches of 500 lbs. per vessel per day.**

(e) **The adjusted quota for Atlantic migratory group Spanish mackerel is 3.25 million pounds, and is implemented for the fishing year that commenced April 1, 1992. The adjusted allocation and the trip limits may be modified in accordance with the framework procedure.**

Rejected Option F-2: For the purpose of allocating commercial catches, Atlantic Spanish mackerel are separated into a northern zone (north of the Florida-Georgia line) and a southern zone (Florida east coast to the Dade - Monroe line). In the northern zone boats would be restricted to trip limits of 3,500 pounds of king and/or Spanish mackerel.

For the southern zone there were 2 options:

Rejected Option F-2a: The Florida Marine Fisheries Commission originally proposed for Spanish mackerel:

> **East Coast: 1,500 pounds from April 1 - November 30, then unlimited harvest allowed until 50 percent of the quota is projected to be harvested, then 10,000 pounds until 75 percent of the quota is projected to be harvested, then 1,500 pounds until the total quota is reached, then 500 pounds until March 31 or:**

Rejected Option F-2b: The Organized Fishermen of Florida had proposed for east coast Spanish mackerel:

> **April 1 - November 30: 2,500 pound trip limits;**
>
> **December 1 until 50 percent of quota reached: unlimited daily catch;**
>
> **50 percent to 75 percent of quota: unlimited catch per trip every other day only;**
>
> **At 75 percent of quota: 1,500 pound trip limits until quota filled;**
>
> **Weekend closures begin at 50 percent of quota;**
>
> **After quota is reached go to 500 pound daily trip limit (The projected total amount will have been figured in quota calculations);**
>
> **April 1 until 75 percent of quota: 2,500 pound trip limit at any time unlimited daily harvest is not allowed;**
>
> **If daily projection shows less than 200,000 pounds remaining on any particular segment then next segment begins.**

Rejected Option F-3: No change. No commercial trip limits for Atlantic Spanish mackerel.

Option F-1

Southern Zone

The preferred option for commercial trip limits has three objectives. The first is to increase control on harvesting power in order to reduce the probability that commercial quota for south Atlantic Spanish mackerel will be exceeded. The second objective is to slow the pace of landings and to extend the fishing year. The third objective is to change the distribution of landings such that smaller boats in Florida catch more of the available commercial quota than they have caught in recent years so that conflicts among fishermen are reduced.

Regarding potential TAC overages, it has been estimated that the existing fishing fleet in Florida can catch as much as 400,000 lb of Atlantic Spanish mackerel in a single day (Muller et al., 1990). Despite

the fact that the existing catch reporting system in Florida has a reporting lag of only one day, the potential for TAC overages appears to be significant with this large single day catch capacity. According to one source, the combined conditions of weather and fish availability that might allow large scale mackerel boats to harvest at full capacity have not occurred in recent years and this may explain why large overages have not occurred in recent years (McKenna, 1991).

The proposed trip limit is expected to decrease the potential for exceeding TAC because Spanish mackerel landings that normally occur after the peak landings months are deducted from the quota from the outset. In addition, a trigger mechanism to begin a 1,000 lb per trip limit once 80% of the adjusted quota has been taken will also help to prevent quota overages. The 1,000 lb trip limit will probably not allow the large scale boats to continue to target Spanish mackerel in the south Atlantic, and this will decrease the daily harvest capacity significantly, controlling the pace of landings. Thus the preferred option for trip limits is expected to be effective for preventing quota overages that would have resulted from Florida landings.

Benefits associated with preventing commercial fishermen from exceeding the Spanish mackerel TAC are an increased adherence to the rebuilding schedule for Spanish mackerel which is expected to increase total yields from the fishery over present TAC levels. Maximum sustainable yield for the Atlantic Spanish mackerel fishery is between 7 and 8 million lb. Because available data on recreational catch show that the recreational sector has not captured its allotted quota in recent years (roughly 1.2 million, 80,000, and 1.3 million pounds short of its quota in fishing years 1991-92, 1990-91, and 1989-90 respectively), the negative biological effects of exceeding the commercial quota are not necessarily detrimental to stock recovery under the prescribed rebuilding plan. For instance, in the 1991-92 fishing year, commercial catch exceeded the commercial quota of 3.5 million lb by roughly 800,000 pounds, but the recreational sector fell short of its allocation by 1.2 million pounds, hence 6.6 million pounds of a 7 million TAC for all sectors was landed and the recovery plan for that year was not compromised.

Preventing commercial overages might hasten stock recovery if, as one would expect intuitively, harvesting less than the prescribed schedule in fact speeds recovery over the projected rebuilding path. The economic or biological benefits of trading present catch for future catch cannot be described systematically, however, in part because time periods for stock recovery at various ABC levels are not available from the stock assessment. Thus the overall benefits from holding the commercial sector to its allotted quota even when a shortfall on the part of the recreational sector more than compensates the overage cannot be demonstrated at this time.

In the last four fishing years, larger boats have taken between roughly 61% and 85% of the commercial catch of Spanish mackerel in Florida (Table R2). The percentages of Florida catch going to large and small vessels found in Table R2 were derived in the following manner. Florida Department of Natural Resources trip ticket data were sorted such that any vessel in a given year that landed 10,000 pounds of Atlantic Spanish mackerel on a trip was considered to be in the large vessel category and all of that vessel's Spanish mackerel landings for the year were added into the monthly aggregate for large vessels. Spanish mackerel catch from vessels not landing a trip of 10,000 pounds or greater were tallied in the small vessel category in the same manner (McKenna, 1992). This separation of catch into large and small vessel landings was performed for years when Florida trip ticket data were available, and data from edited and non-edited trip ticket files were used for the 1991-1992 fishing year (see Appendix R1 for data breakdown). Although the criterion used for determining which vessels are large vessels for the purposes of this analysis is certainly not the only way to determine the percentage of Florida Spanish

mackerel landings attributable to large vessels, it is considered to be a reasonable way to estimate large boat catch because smaller vessels apparently do not have the hold capacity to land anywhere near 10,000 pounds (Dr. J. McKenna, Florida Department of Natural Resources, personal communication).

Different analyses have used alternative criteria for differentiating between large and small vessels. One analysis relied on depth of net, stipulating that large vessels use gill nets of 300 meshes or greater depth, enabling those vessels to fish deeper waters before the fish are available to smaller boats. That analysis reports that there are approximately 14 large Spanish mackerel vessels that operate on the east coast of Florida, and there are between roughly 60 and 150 small boats active in the small boat Spanish mackerel fishery in Florida (Palmer, 1990). A derivation of the number of boats contributing to large and small boat landings is not available from this analysis because available data are aggregated by month. Further, gear or vessel specific criteria were not used with the trip ticket database because that information is not found in the trip ticket system. It is important to note that large boats by either definition are unable to operate at either the 1,500 pound trip limit prior to December or the 1,000 and 500 pound trip limits after eighty percent of the adjusted commercial quota has been taken because the costs of operating large scale gear requiring as many as four crew members would not be compensated by the revenue from the trip (Roger Newton, Bayside Shellfish, Apalachicola, Florida, personal communication).

Under the proposed trip limits, the percentage of Florida Spanish mackerel catch that will be taken by large boats is estimated to be approximately between 31% and 42% of the total Florida commercial catch (Mark Godcharles, Southeast Regional Office, NMFS, personal communication. Note: Godcharles' calculation for this estimation can be found in Appendix R2. The 31-42% range is based on different projection scenarios with different assumptions about bycatch and catch before December 1). This is a significant percentage decrease from the last fishing year where large boats took roughly 67% and an even greater decrease from years prior to that where large boats took as much as 85% (Table R2.). The reason it is important to evaluate the effects of the proposed trip limits in terms of changes in percentage of Florida catch to small and large boat groups rather than in absolute terms is because TAC's have varied over the period, and in some years commercial TAC has been exceeded. Percentage of catch per group is appropriate because the proposed trip limits have an allocation objective and evaluating changes in absolute terms would involve implicit judgments of which group was responsible for TAC overages in the past.

This estimate of large boat catch in Florida under the proposed trip limits was developed in the following manner. Catch prior to December 1 in recent years has approached 2 million pounds (1.99 million lb in 1991-92 and 1.82 million lb in 1990-91 fishing year). This catch has come mostly from states north of Florida, with a relatively small amount of catch coming out of Florida. Starting December 1st, catch in states north of Florida is negligible. If the commercial fishery is to remain within the 3.5 million pound quota, then this leaves 1.25 million lb of Spanish mackerel remaining when the unlimited catch per trip portion of the fishery begins in December because 250,000 pounds of quota is now going to be deducted up front for the 500 pound trip limit catch that normally occurs after the TAC is met. The unlimited catch per trip season (essentially the large boat season) that begins in December continues until 80% of the adjusted quota is landed. That will occur when approximately another 605,000 pounds of Spanish mackerel are landed (see Appendix R2), given that states north of Florida continue to take approximately 2 million pounds before the end of November.

After 80% of the adjusted quota has been landed, the fishery is limited to 1,000 pounds per trip and 500

pounds after the adjusted TAC is met, and it is not feasible for large boats to operate under these small trip limits. Assuming landings prior to December 1, mostly from states north of Florida do not expand above 2 million pounds, then large boats in Florida could take at the most 605,000 pounds during the unlimited catch per trip season or roughly 30% of the Florida Spanish mackerel catch that is likely to occur that year. This amounts to roughly half of their relative percentage of Florida Spanish mackerel using 1991-92 as a base year, although it is important to remember that commercial TAC was exceeded that year. If the number of large boats in the fishery is as large as 14, then this would mean that each boat would take approximately 43,000 pounds (if landings are distributed evenly among participants) of Spanish Mackerel from the Florida east coast fishery. This amounts to between one and four trips depending on fishing conditions and other factors.

The magnitude of percentage reduction of catch to large boats will ultimately depend on total catch in all states (mostly states north of Florida) from April 1 through November 30 and how and when that catch is deducted from the commercial quota, as well as other factors. Under certain conditions, large boats could continue to take about half of the Florida Spanish mackerel catch if one of two possible outcomes occurs. The first is that catch in states north of Florida is not as large as it has been in the last two years because Spanish mackerel are not as locally abundant or are not as attractive a target. Although possible, this outcome does not appear to be likely because catch in states north of Florida has been increasing steadily in recent years (Appendix R3). The other possibility is that, as occurred last year, the reporting system for Spanish mackerel catch in states north of Florida and particularly in Mid Atlantic states does not report all of its catch until late in the fishing year. This would mean that the estimated catch at the beginning of the unlimited fishing season in December might be about 1.5 million pounds, and there would be a balance of approximately 2 million pounds (1.75 million as adjusted quota), meaning the unlimited harvest period would be closed at 1.4 million pounds, instead of 605,000. Should this latter outcome occur, the commercial quota for Spanish mackerel will likely be exceeded again this year, and if the recreational sector does meet its quota this year, then overall TAC will be exceeded.

Changes in Net Benefits Under Proposed Trip Limits

Since the inception of TAC management for mackerels in the south Atlantic, the fishery for Atlantic Spanish mackerel in Florida has displayed some signs of the typical economic effects of TAC management. These effects are a rapid pace of landings apparently driven more from competition than from market demand, the majority of landings compressed into a small portion of the fishing year, an increase in fleet capacity until the standing harvest capacity is greater than that needed to take the TAC, and a change in seasonal price pattern resulting from changes in historical landings pattern, in particular December price tends to be depressed while prices in other months tend to be higher. In addition, there is anecdotal evidence of decreased product quality from poor handling of fish on some trips. Some fish dealers also report that a loss of product continuity from the compressed fishing season under TAC management has occurred as buyers have reportedly looked for other species or imported fish to replace the niche in the fresh fish market that Spanish mackerel once occupied.

The effects of extremely competitive fishing, or what are often called "fishing derbies", tend to redistribute net producer benefits to those with the most efficient gear. Signs of derby fishing have been observed in many U.S. fisheries, the classic example being the fishery in the North Pacific for halibut where the entire directed annual catch of halibut takes place in a few hours. In the extreme case, derby fishing likely decreases net benefits from the fishery, particularly when excess capacity is large enough

to tie up far more scarce capital goods such as fishing boats and gear than are necessary to harvest the TAC. Net benefits from the fishery are also diminished when product quality decreases or product continuity is lost. Most of the negative aspects of competitive fishing outside of the extreme case result from conflict among fishermen and negative employment and distribution of income effects. In a purely economic sense ignoring negative employment and distributional effects, however, derby fishing outside of the extreme case is not necessarily bad for society as long as fishing is kept within biologically sound levels because it delivers a product to consumers at attractive prices.

In pure economic terms, large capacity gear may produce significant net benefits to fishermen using that gear and to consumers, despite the fact that prices are lower than if smaller scale boats and gear were used. In this way, giving more Spanish mackerel catch to smaller boats probably involves some efficiency losses and hence some net losses of consumer and producer benefits. Although current cost and earnings information is not available to describe the magnitude of these losses, few would argue that large net gear is not more efficient than smaller net gear and hook and line gear used by smaller boats. It is sometimes argued that large boats receive a lower price per pound for Spanish mackerel than smaller boats, thus creating, it is thought, less benefit from a pound of mackerel than the benefit small boats would generate from that same pound of mackerel. That argument, however, ignores the fact that costs associated with catching a pound of Spanish mackerel on average are probably considerably lower for large boats than for small boats. If cost savings more than compensate for per unit revenue differences, then net profits to producers with large vessels should be larger, thus aggregate producer benefits are larger with large scale gear than with smaller scale gear, all other factors held equal.

Empirical analysis to confirm that prices to large vessels are really lower is not available. Available evidence on seasonal prices to large and small boats (Memo on Spanish mackerel price differences, Fishery Dependent Data Group, Southeast Fisheries Center, NMFS 1991) does not isolate the potential effects of fluctuations in quantity landed during the period when exvessel prices were monitored. Hence prices to large vessels may not be lower on average than those to smaller boats, suggesting further that producer surplus created by large vessels in the fishery may be larger than the producer surplus created by smaller boats for the same quantity of mackerel.

There is little doubt that management which would affect the economics of the fishery directly such as management under individual transferable quotas (ITQs) would bring about greater economic benefits than input control schemes such as trip limits, or competitive fishing under no action. An ITQ program would allow fishermen to respond directly to market signals to avoid low exvessel prices from flooded markets. ITQs would also address over-capacity problems in the fishery directly by allowing those with the highest-valued use of the fishery to buy out others.

Economic Benefits of the Proposed Trip Limits Outside of Efficiency Considerations

The proposed trip limits will allocate more Spanish mackerel to smaller vessels than was the case under no action. This may effectively slow down the pace of landings and avoid supply gluts to some degree. In the short run, this may benefit small boat fishermen because prices they receive during the time of the year when large boats normally dominate the catch may be higher than before. As was mentioned before, however, prices and hence revenue are only one of the determinants of net producer benefits, and if aggregate fishing cost increases with the loss of efficiency outstrip gains in revenues, then decreases in net producer benefit will result.

Another important economic consideration is employment. With present unemployment levels higher than at anytime in the recent past, one benefit of allocating more fish to smaller scale vessels may be that more individuals are employed in the harvesting sector of the fishery. In the long run, however, and in the event that a full employment economy returns in the near future, sacrificing efficiency for employment usually means that imported fish will become more attractive in terms of price to wholesalers than domestic fish, and this can have greater adverse effects in the long run.

One final benefit indirectly attributable to the proposed trip limits is that the limit will encourage small scale vessels to persist in the fishery which they might not have been able to do in the long run under no action. This may be beneficial if a property rights management scheme such as ITQs is introduced into the fishery in the near future. ITQs would allow the workings of an efficient market to determine harvest strategies. We do not know for sure how much of the motivation for fishermen who switched to large scale gears was for true gains in efficiency or because of competition for fish under derby fishing conditions. Some Spanish mackerel fishermen have reportedly stated that if their fishery were managed under ITQs or any system that removed the race for the fish element of the fishery, then they would decrease the size of the nets they use and land smaller trips. Preserving smaller scale operators in the fishery may allow these individuals to be efficient harvesters if an ITQ system is developed for the fishery in the future.

Other Considerations

The proposed trip limits under the preferred option will probably be most beneficial in terms of easing the negative distributional effects of derby fishing and attendant conflicts among commercial fishermen who count on the resource. In terms of conflict reduction, the distribution of fish under the proposed trip limits is certainly more fair than it has been in years when the relatively small number of large boats in Florida have taken as much as 90% of the Florida Spanish mackerel catch.

Northern Zone

The proposed trip limits for south Atlantic states north of Florida are a partial adoption of North Carolina's state regulations for federal waters. North Carolina's trip limits presently limit trips to 3,500 lb of king or Spanish mackerel. Because king and Spanish mackerel are not targeted together on trips, effectively the proposed trip limits in the northern zone are an adoption of North Carolina's state regulations. North Carolina is the only state with the jurisdiction of the South Atlantic Council besides Florida that has a significant commercial harvest of Spanish mackerel and there is no evidence of any negative effects of competitive fishing in North Carolina at this time. In Mid-Atlantic states with significant Spanish mackerel fisheries, such as Virginia, Spanish mackerel are mostly caught in state waters. Existing trip limits in North Carolina do not appear to impact many trips because most boats fishing Spanish mackerel use smaller scale gear than is used by large boats in Florida.

One potentially negative aspect to this trip limit is that the development of more efficient gears that could be effective north of Florida might be discouraged. On the other hand, the framework procedure in this amendment for regulatory adjustments no longer requiring plan amendments is expected to allow for fairly easy adjustments in the trip limits if there is reason to do so. Hence there are no significant negative effects of the proposed trip limits on the fishery as it is prosecuted north of Florida. One benefit from the proposed trip limit north of Florida is that state and federal regulations will be now be compatible and this is valuable for reducing conflicts and improving enforcement.

Options F2a+b

Southern Zone

Options F2a and F2b involve alternative trip limit schemes. Neither the Florida Marine Fisheries Commission (FMFC) proposal nor the proposal by the Organized Fishermen of Florida (OFF) would likely result in a distribution of landings between large and small vessels that is significantly different from the preferred alternative, and hence these alternative trip limits would entail the same loss of efficiency and consumer and producer benefits that are expected from the preferred alternative.

Both the FMFC and the OFF proposals involve restricting unlimited fishing once 50% of the commercial TAC has been landed, after the unlimited fishing season begins in December. In both cases, given that states north of Florida and the Florida small boat harvest under the 1,500 pound trip limits is expected to amount to approximately 2 million pounds prior to the beginning of end of December, 50% of the commercial quota will already have been taken so there is no real effect to the first stage of unlimited harvest in either proposal.

For the Florida Marine Fisheries Commission proposal, large boats would be forced to fish under 10,000 trip limits until 75 percent of the quota is met. That would allow large boats to land 625,000 pounds if they landed all of the December portion of the trip limit scheme. Large boats would be slightly better off in terms of the quantity of mackerel available during the large boat season compared to the preferred alternative but would encounter greater losses in terms of increased fishing costs fishing under the 10,000 pound trip limit than they would under the preferred alternative or the OFF proposal. The OFF proposal would only restrict them to fishing on Monday, Wednesday, and Friday until 75 percent of the TAC was met. This would also translate into about a 20,000 pound increase (625,000 - 605,000 based on the low catch scenario) in available Spanish mackerel quota over the preferred alternative. One potential benefit of the OFF proposal would be that a few large boats might be able to fish under the 2,500 pound trip limit prior to the end of November. Overall, however, neither trip limit is expected to change the allocation between large and small boats significantly, and hence offer about the same implications in terms of net economic benefit losses.

Northern Zone

The only departure from the preferred option for the states north of Florida is that Spanish and king mackerel would be counted for the federal trip limit as is the case for state regulations in North Carolina. As was pointed out earlier, however, Spanish and king mackerel are not commonly caught by commercial fishermen in North Carolina on the same trip, so the Spanish mackerel trip limit in the preferred option is essentially the same.

F3. No Action

No action could lead to a situation where the overall Spanish mackerel TAC may be exceeded. This was discussed above where the commercial quota overrun exceeds the recreational quota underrun. Recent court decisions have rejected attempts to control Spanish mackerel landings via state landings laws. This means that state-promulgated attempts to control the fishery will not work because fishermen can claim that they were fishing exclusively in federal waters. Given that the fleet can land as much

as 400,000 lb in a single day, this puts an unnecessary burden on the quota tracking system and makes the prospects of closing the fishery when it should be closed somewhat remote.

Regarding net economic benefits from the fishery, no action is probably preferable to the preferred alternative for the reasons pointed out above. Over time, however, derby fishing conditions in Florida and increased entry into the fishery when fishing is profitable could aggravate overcapitalization problems and this will serve to decrease net benefits from the fishery. In the long run, a market-driven management system such as ITQs is preferable to either trip limits or no action, despite the fact that implementation, monitoring, and enforcement costs would likely be large in this fishery.

No action forfeits the employment benefits of allocating more fish to smaller boats described before. In addition, the benefits of decreasing conflicts between harvesters would be sacrificed under no action.

Table R2

Historical and Projected Florida East Coast Spanish Mackerel Landings by Large and Small Scale Vessels in Millions of Pounds (FDNR: 2/25/92; SER011/MFG:8/04/92)

Fishing Year	Florida			Northern Area[2]	Mid-Atlantic[3]	Total	Quota
	Large Boat[1]	Small Boat	Total				
1988/89	2.36 (85%)	0.40 (15%)	2.76	0.44		3.20	3.04
1989/90	2.41 (82%)	0.54 (18%)	2.95	0.59		3.54	3.24
1990/91	1.29 (61%)	0.84 (39%)	2.14	0.84	0.55	3.53	3.14
1991/92[4]	1.45 (67%)	0.72 (33%)	2.85	0.86	0.67	4.37	3.50
1992/93 Projections:							
[5]	0.61 (31%)	1.37 (69%)	1.98	0.86	0.67	3.51	3.50
[6]	0.83 (42%)	1.14 (58%)	1.97	0.86	0.67	3.51	3.50
[7]	0.79 (40%)	1.19 (60%)	1.97	0.86	0..67	3.51	3.50
[8]	0.75 (38%)	1.23 (62%)	1.97	0.86	0.67	3.51	3.50

[1] A large boat is a vessel that landed 10,000 pounds or more of Spanish mackerel from at least one trip during the fishing year. Small boats are all other vessels landing Spanish mackerel.

[2] North Carolina, South Carolina, Georgia.

[3] Virginia, New York, New Jersey, Maryland, Delaware, and Pennsylvania were included in the management area under Amendment 5 (September 1990).

[4] Incomplete data. Federal judge enjoins Florida from enforcing state trip limits on commercial catches taken in the EEZ

[5] Low projection 1 - no adjustment for bycatch and directed harvest during other months and trip limit stages. Based solely on 1991/92 landing estimates.

[6] Low projection 2 - adjusted for bycatch and directed harvest during other months and trip limit stages. Based on lowest monthly catches by Florida big/small net vessels from 1990/91 and 1991/92 catch estimates.

[7] Mean projection - adjusted for bycatch and directed harvest during other months and trip limit stages. Based on mean monthly catches by Florida big/small net vessels from 1990/91 and 1991/92 catch estimates.

[8] High projection - adjusted for bycatch and directed harvest during other months and trip limit stages. Based on highest monthly catches by Florida big/small net vessels from 1990/91 and 1991/92 catch estimates.

G. Income Requirement for Commercial Permits

Preferred Option G-1: Commercial permits: Annual permits are required of the owner or operator of boats fishing in the EEZ under the commercial quota on king and Spanish mackerel. These vessels are exempt from the recreational bag limit. To be eligible for a permit the owner or operator must be able to show that at least 10 percent of his earned income was derived from commercial fishing, i.e., sale of catch, during one of three preceding calendar years.

Rejected Option G-2: No change: Annual permits are required of the owner or operator of boats fishing in the EEZ under the commercial quota on king and Spanish mackerel. These vessels are exempt from the recreational bag limit. To be eligible for a permit the owner or operator must be able to show that at least 10 percent of his earned income was derived from commercial fishing, i.e., sale of catch, during the preceding calendar year.

The underlined phrases are the only difference between the two options. Permits issued for the 1991/1992 season totaled 3,069 of which 1,623 were commercial, 938 charter and 549 both commercial and charter permits. These permit holders have qualified for the current year on the basis of their 1991 commercial fishing income. Under the preferred option, all these permit holders would qualify for permit at least in the next two succeeding years even if they do not derive income from commercial fishing this year and the next. From a social standpoint the preferred option offers the advantage of accommodating hardship conditions, i.e., boat sinking, sickness, etc., in maintaining commercial access to the fishery, particularly those that are significantly dependent on commercial fishing or those that cannot find ready employment in other industries. From the standpoint of economic efficiency for the industry, the two options do not significantly differ particularly that the percent income requirement or the required income base is not that restrictive under either option. Under the preferred option, however, individual fishermen are afforded more flexibility of improving their individual economic position by mixing their economic activities, especially between fishing and non-fishing. The industry is not necessarily made efficient in this way as less efficient fishing operations are, to some extent, promoted.

H. Control of Recreational Allocation

Preferred Option H-1: The recreational allocation of mackerels will be controlled by bag limits for anglers per day with a one-day possession limit. Charter and head boats on multi-day trips may have two-day possession limits provided that two qualified captains are aboard and anglers have been provided with receipts for multi-day trips. Different bag limits may be set for anglers on charter or private recreation vessels. The bag limit is intended to reduce the recreational catch and distribute fairly throughout the fishing year.

If under the framework procedure for seasonal adjustments the RD determines that a Council-proposed bag limit for an overfished group of Gulf king mackerel is expected to exceed the recreational allocation, the bag limit reverts to one fish per person per day.

Rejected Option H-2: No change. On migratory groups which are defined as being overfished the bag limit for that group will revert to zero when its quota is caught.

Rejected Option H-3: The recreational bag limit for a stock defined as being overfished will be reduced by 50 percent when 75 percent of the recreational allocation is projected to be taken. The bag limit would not revert to zero.

Rejected Option H-4: Suballocate the Gulf group king mackerel recreational quota into equal six-month quotas. The bag limit is to revert to zero when the quota is filled.

Rejected Option H-5: Applicants for charter boat permits for fishing for coastal pelagics in the EEZ must agree to conform to the more restrictive of federal or state of landing bag limits regardless of where fishing occurs.

TACs have been set for king and Spanish mackerel, and these are allocated between commercial and recreational sectors. In the case of Gulf king mackerel, the commercial quota is subdivided between the eastern and western areas of the Gulf. When these various quotas are taken, the respective commercial and recreational fisheries in the EEZ are closed for fishing. However, certain state waters remain open for recreational fishing. In addition to quotas, the recreational fisheries are also subject to bag limits on a per person per day basis.

These options mainly focus on allocation of the recreational quota among various recreational users, and do not directly address allocation problems between the commercial and recreational sectors. The distributional/regional impacts of these options are likely to be felt in fisheries experiencing early closures. Lately only the Gulf king mackerel fishery, among the recreational mackerel fisheries, has experienced early closures although recreational catches have continued to be landed during this time due to non-closure of some state waters. The major change Option H-1 (preferred option) or Option H-3 would introduce to the current practice (Option H-2) is the provision that the recreational bag limit would not revert to zero when the recreational allocation is taken. In effect, the recreational sector will be mainly managed through bag limits, and the main use of a recreational quota or allocation is in the calculation of the appropriate bag limit. The only difference between Options H-1 and H-3 pertains to the procedure of setting the bag limits in order to constrain recreational harvest to the sector's allocation. Those currently enjoying the privilege of catching mackerel during the EEZ closure would be minimally affected by these two options. Non-reversion to zero of bag limits would benefit those prevented from recreationally fishing for mackerel in the EEZ, such as anglers and for-hire fishing businesses in South Florida during winter and the Texas for-hire boats in the early summer period. Option H-4 addresses the concern of certain segments in the recreational sector that they are deprived of some benefits from the resource due to the closure at the time when mackerel occur in their areas. Using historical catch statistics, it is possible to design two six-month periods so that fisheries currently experiencing early closures would not close. However, fishing effort is also likely to change so that it would not be possible to totally avoid closures within the chosen six-month period. Option H-5 is an attempt to effectively restrict the recreational sector from exceeding its quota, considering the fact that many recreational catches after the EEZ closed are made through charter boats. If the more restrictive provision means zero bag limits at certain times of the year, the charter boat sector would be definitely adversely affected at least in the short run. If the more restrictive provision merely stipulates lower bag limits but leaves both state and EEZ waters open for fishing, the charter boat sector may possibly generate more profits (relative to the status quo) under this option.

Recreational anglers derive benefits from both kept and caught/released mackerel. Milon (1992) stressed the importance of these two sources of anglers' benefits. In addition to anglers' benefits, the

profitability of the for-hire sector needs to be factored in when determining the benefit changes due to certain regulations. For the Gulf king mackerel fishery which has been experiencing closures for a given quota, some positive benefits in the recreational sector continued to accrue even during the closure period due catch and release practice. The fishing season would appear to be longer under Option H-4 than under Option H-2 (status quo). However, there is a strong possibility that for the Gulf king mackerel fishery, Option H-4 would result in two closures for one fishing year. In the red drum fishery, it has been determined that the recreational sector loses more than it gains from an equal change in their catch; that is, a catch reduction results in losses greater than the gains from an equal catch increase (Green, 1990). Given this condition, higher bag limits with two closures in a fishing year would not give as much benefits than lower bag limits without closure as in Option H-1 or Option H-3.

The fishing season would be longer under either Options H-1 or H-3 than under either Option H-2 (status quo) or Option H-4 although it is very likely that the associated bag limit would be lower under the two former options. A longer season would generate more economic benefits than a shorter one even if the associated bag limit is lower (Socioeconomic Panel Report, 1992). There are three possible sources of greater benefits being associated with a longer season. First, there will be more angling trips; second, each trip will be associated with higher valued fish for the reason that the marginal value of each caught fish diminishes with additional fish caught. Although on a per trip basis, the higher bag limit affords higher overall benefits, there will be fewer such trips. Raulerson (1992) compared a one-fish bag without closure versus a two-fish bag limit with an effective closure for a given quota of Gulf king mackerel and concluded that approximately 560 thousand "successful" trips would be associated with the one-fish bag limit and 370 thousand with the two-fish bag limit. In this case, the increase in the number of trips and associated consumer surplus would exceed the consumer surplus foregone by reducing the bag limit from two fish to one. The third potential source of increased benefits is the consumer surplus derived from a catch and release practice. It is very likely that a longer season with lower bag limit would be associated with more catch and release than a shorter season with higher bag limit. In principle, a lower bag limit would increase the probability of catch and release. Given the relatively high trip success elasticity of released catch estimated at 1.30 (Milon, 1991), more fishing trips would be induced under the circumstance. In sum, Options H-1 and H-3 can be expected to generate higher consumer surplus than either Option H-2 or H-4. It is not readily apparent which of the two options, viz., Option H-1 and Option H-3, would provide more benefits. It is, however, relatively clear that enforcement would be more difficult under Option H-3.

The direction of effects of Option H-1 or Option H-3 on the profitability of the for-hire sector is not clear. A longer season would enable this sector to operate longer, and thus offer more trips. But the prospect of a lower bag limit may reduce the marketability of a fishing trip. Considering, however, that either Option H-1 or Option H-3 would open up markets in areas generally closed under the status quo, the profitability issue in the for-hire sector may merely involve re-allocation of profits from one segment of the industry to another. No general conclusion can be arrived in this regard.

Although maintaining an open season for the recreational sector under either Option H-1 or Option H-3 does not necessarily mean exceeding the recreational sector's allocation, one might expect that for the Gulf king mackerel fishery the recreational allocation could be exceeded. The impact of exceeding the recreational quota on the recovery of the stock is not precisely known, although current information whereby the recreational quota has been exceeded appears to imply that stock recovery is not severely impeded. Given the condition that excess catch would not materially increase, maintaining an open recreational fishery year round has the potential of creating more economic benefits to the fishery.

I. Modifications of Fishing Years (Currently, April-March for Atlantic and Gulf Spanish Mackerels and Atlantic King Mackerel, and July-June for Gulf King Mackerel)

Preferred Option I-1: The fishing year for the recreational allocations is the calendar year, January 1 through December 31. For all Spanish mackerel and Atlantic group king mackerel the fishing year for commercial allocations is April 1 through March 31. For Gulf group king mackerel the fishing year for commercial allocations is July 1 through June 30. For other species, the fishing year for commercial allocations is the calendar year.

Rejected Option I-2: The recreational and commercial fishing year for Gulf and Atlantic groups of king and Spanish mackerels is May 1 through April 30. The winter boundary for Atlantic-Gulf king mackerel would change May 1.

Rejected Option I-3: The recreational and commercial fishing year for all mackerel groups is April 1 through March 31.

Rejected Option I-4: Fishing year for Gulf king mackerel to be November-October.

Rejected Option I-5: No change. Gulf and Atlantic Spanish and Atlantic king mackerel would have an April-March fishing year. Gulf king mackerel would have a July-June fishing year.

Rejected Option I-6: The fishing year for all commercial mackerels be set for a fishing year of September through August.

Due to vulnerability of stock at certain times of the year and the market outlook for the fishery, choice of a fishing year affects both the fish stock and fishery participants. With respect to the impact on the coastal pelagic stock, there appears to be no significant difference whatever is the chosen fishing season. The major consideration from the standpoint of the stock is the setting of TAC rather than the choice of a fishing season. In and by itself, the choice of a fishing year has only a distributional/regional impact on fishery participants. The choice of a fishing year has possible adverse impacts on certain area fishermen in terms of being deprived of catching some fish or of catching fish at a time when prices are low (for commercial fishermen) or recreational fishing demand is weak. The current fishing year for Gulf king mackerel (Option I-5) has deprived South Florida of its winter recreational season and the Northern Gulf of its spring season due to closures of the fishery. In Amendment 5 to the FMP, the fishing year for the Gulf Spanish mackerel was changed from July-June to April-March in order for user groups in some areas to have access to the resource before the fishery closes. Other fishing seasons (Options I-1, I-2, I-3, and I-4) are favorable to some who are currently closed out of the fishery and unfavorable to others who may be currently favored in terms of access to the resource long before the fishery closes. In the absence of other measures, like area quotas or maintaining an open fishery throughout the fishing season, there is possibly no way of determining the most appropriate fishing season in terms of being favorable to most users of the coastal pelagic resource or at least in terms of maximizing benefits from the fishery.

Although the preferred option falls within the general purview of choosing a particular fishing season and so may be deemed to have only distributional/regional effects on fishery participants, certain implications of the option due to its unique features need to be recognized. The current fishing year (Option I-5) is April-March for all mackerel stocks, except for Gulf king mackerel which is July-June.

Currently, the TAC is recommended by the Council for each migratory group on or about April of each year and implemented at a later date. Under this scenario, the TAC is usually made retroactive for fisheries opening in April. Last year, the retroactive implementation was also made for Gulf king mackerel since the TAC was not implemented until September of last year. The preferred option may partly solve this problem. However, it is made applicable only to Gulf king mackerel and only on the recreational segment of that fishery. Other mackerel fisheries would still be subject to the same problem. If the recreational fishery remains open throughout the fishing year (see Option H-1), the choice of a fishing year for this sector would not make any difference relative to generation of benefits from resource use. This holds true even if the current date of setting the TAC for Gulf king mackerel, i.e., April of each year, is maintained for this would only mean changes in bag limits during the fishing year. At least for the recreational king mackerel fishery in the Gulf, enforcement would be partly simplified, since there is more time provided for information dissemination and for state to enact compatible rules.

J. Minimum Size Limit

Preferred Option J-1: **Size limits are revised as follows:**

a) **Spanish mackerel minimum size limit is 12 inches (30.5 cm) fork length. An undersized commercial catch of up to 5 percent by weight of the boat catch of Spanish mackerel is allowed.**

b) **Minimum size limit is 20 inches (50.8 cm) fork length for king mackerel. An undersized commercial catch of up to 5 percent by weight of the boat catch of king mackerel is allowed.**

c) **Minimum size limit is 33 inches (83.8 cm) fork length for cobia.**

Rejected Option J-2: **Increase the minimum size limit for king mackerel from 12-inch fork length (14-inch total length) to 20-inch fork length or the more stringent of state or federal size regulation.**

Rejected Option J-3: **No change. Minimum size limit for king mackerel remains 12-inch fork length (14-inch total length).**

The preferred option (Option J-1) maintains the same minimum sizes in fork length for Spanish mackerel and cobia as those of the status quo (Option J-3), with only the use of total length being disallowed. In this regard, the preferred option is expected to have minimal short-term and long-term impacts on fishery participants of these fisheries relative to the status quo.

The proposed increase in minimum size limit for king mackerel is expected to result in a higher yield per recruit (Coastal Pelagics FMP, 1983). Thus, the preferred option offers potentially higher catches to both commercial and recreational users of the resource. However, release mortality, particularly in the recreational fishery, may also be expected to increase and would partly obviate the achievement of a higher long-term yield for the fishery. A higher minimum size limit for king mackerel is expected to minimally impact the commercial sector, since this sector generally catches larger size king mackerel.

On the other hand, the recreational sector is estimated to incur a 30 percent reduction in catch from the increase in minimum size limit had it been in effect during the 1989-1990 season (Powers and Parrack, 1991). This estimated reduction assumes that the level and distribution of recreational effort do not change. But for Gulf king mackerel fishery which has been subject to early closures, one may expect for the distribution of fishing effort to change so that the recreational allocation would still be very likely taken. Given this scenario, the size limit, even perhaps when taken in conjunction with a lower bag limit, may only result in a relatively minimal reduction in recreational catch. In conjunction with a prolonged season, such as under Option H-1 above, the size limit increase may be expected to increase the catch and release feature of the Gulf king mackerel fishery. Released catch has been estimated by Milon (1991) to generally yield higher trip success elasticity (1.30) than kept catch (0.80). Since the fishery is not expected to close under Option H-1, the increase in size limit may induce more mackerel angling trips. A potential increase in fishing cost due to the size limit increase may be expected to be outweighed by the increase in consumer surplus. It is possible that profitability of the for-hire sector may increase under the proposed increase in size limit as long as the bag limits are not set at very low levels.

PRIVATE AND PUBLIC COSTS

The preparation, implementation, enforcement and monitoring of this or any Federal action involves the expenditure of public and private resources which can be expressed as costs associated with the regulations. Costs associated with this specific action include:

Council costs of document preparation, meetings, public hearings, and information dissemination	$ 37,000
NMFS administrative costs of document preparation, meetings and review	$ 13,200
Law enforcement costs	$150,000
Public burden associated with permits	$ none
Federal costs associated with permits	$ none
TOTAL	$200,200

The Council and Federal costs of document preparation are based on staff time, travel, printing and any other relevant items where funds were expended directly for this specific action. The cost of law enforcement comprises the largest portion of government costs even noting that this amount refers only to additional cost that would be incurred under the amendment. There will be no change in public burden associated with the action, because permitting requirements are left unaffected by any of the measures, including the proposed change on income requirement for commercial permits. There are no additional Federal costs associated with permits. However, the "quality of permits issued" as measured by (1) the time required to process an application and issue a permit and (2) the assurance that only qualified applicants receive permits would be improved (Allen, 1992).

SUMMARY OF REGULATORY IMPACTS

Table R3 presents a summary of impacts of all measures contained in this amendment. For easy reference, a summary description of all such measures is presented in tabular form in Appendix R4. Although mainly qualitative in approach, the foregoing analyses provide a general means for ranking the various alternatives. On balance, the net impact of the proposed set of regulations on the fishery is expected to be positive. It may be noted, however, that certain measures (e.g., Actions D and F) are likely to introduce inefficiencies particularly on the commercial sector of the fishery. We may also note that a large increase in enforcement cost is necessitated by the complexity of some actions, particularly the commercial possession (trip) limit options for the Atlantic Spanish mackerel.

Action A deals with modifying the problems and objectives of the FMP, and are therefore expected to have no immediate impacts on the fishery. Action B deals with a specific time period for rebuilding overfished stocks. Currently only the Gulf king mackerel is well below the target SPR of 30 percent. More recent information, however, seems to indicate that the stock is on a relatively rapid recovery. In this regard all options, relative to the status quo, may be expected to have no immediate impact on fishery participants. The preferred option does not appear to impose severe constraints on fishing operations, both commercial and recreational, when establishing annual or biennial TACs for the fishery. The preferred option for Action C is cost effective, but reduces public input in fishery management and may result in some negative impacts on users targeting non-overfished stocks. The preferred option for Action D appears beneficial to the recreational sector; it has the potential to immediately address equity problems in the commercial sector but also opens more possibilities of rendering the sector more inefficient. Under Action E, the impacts of setting TACs for the eastern and western regions of the Gulf depend on the actual TACs established. The various options, however, have distributional effects which tend to slightly favor the recreational sector. The net benefit effects of the resulting re-allocation under the preferred option cannot be determined. The preferred option under Action F introduces some complexity in the management of Spanish mackerel. This is partly borne out by the associated enforcement cost. Potential long-term benefits from the measure comes in the form of hastening the recovery of the stock by preventing TAC overages. Whether net benefits could arise from this measure cannot be conclusively determined with the given information. The measure has allocational implications. Large boats in Florida would experience a reduction in catch relative to small boats for a given cost or maintain catch level at a higher cost. This situation would impinge on the efficiency of the entire commercial industry, and in this respect the preferred option may not be considered more economically beneficial than the no action alternative. There are, however, some other benefits that can ensue from the measure. Small boats would remain in the fishery, and thus would provide employment opportunity although most probably only over the short run. Additionally, the proposed trip limits would establish a mechanism of distributing the commercial quota fairly among competing commercial users of the resource, partly reducing potential conflicts among these user groups. The recreational sector is not directly affected by this action. The preferred option for Action G has positive effect on the commercial sector mainly on grounds of equity. Again, the recreational sector is not directly affected by this action. The preferred option for Action H would result in net benefit to the recreational sector relative to the status quo, and is less difficult to enforce than the next best alternative (Option H-3). The commercial sector is not directly impacted by this action. The preferred option for Action I does not affect the commercial sector and may not effect any change in angler consumer surplus if the fishery remains open year round. The proposed increase in size limit under Action J has minimal impacts on the commercial sector; such increase may bring about an increase in angler consumer surplus relative to the status quo.

Table R3

Summary of Impacts of All Management Measures

Management Measure	Commercial Sector	Recreational Sector
Action A		
A-1	No immediate impact	No immediate impact
A-2	No immediate impact	No immediate impact
Action B		
B-1:Preferred	No immediate impact	No immediate impact
B-2	None, but not appropriate	None, but not appropriate
B-3	No immediate impact	No immediate impact
B-4	No immediate impact	No immediate impact
B-5	No immediate impact	No immediate impact
Action C		
C-1:Preferred	Cost effective, but reduces public input; may be negative especially for non-overfished stock	Cost effective, but reduces public input; may be negative especially for non-overfished stock
C-2	None	None
Action D		
D-1	May render the sector inefficient, but could address equity problems	May enhance benefits considering that gear restrictions apply generally only to the commercial sector; potential impact of size limit may also benefit this sector
D-2	None	None
Action E		
E-1:Preferred	Negative impact on western zone, but positive impact on eastern zone; overall impact may be negative	Slight negative impact on eastern zone, but substantial positive impact on western zone; overall effect may be positive

E-2	Reduces profitability	Increases consumer surplus and possibly profitability of the for-hire sector
E-3	Initial impact on profitability of E-3(1) is similar to E-1, but long-term impact is positive for both eastern and western zones; unknown impacts of E-3(2) and E-3(3)	E-3(1) has similar impacts as E-1, but long-term impact may be negative; unknown impacts of E-3(2) and E-3(3)
E-4	Unknown effects	Unknown effects
E-5	None	None
Action F		
F-1:Preferred	Net loss of efficiency to the commercial industry; positive effects in terms of employment generation and conflict resolution; long-term effects in terms of hastening stock recovery may be positive but cannot be conclusively determined	None
F-2	Positive effect relative to status quo	None
F-2(a)	Positive effect relative to status quo, but more difficult to enforce than F-1	None
F-2(b)	Positive effect relative to status quo, but more difficult to enforce than F-1	None
F-3	None	None
Action G		
G-1:Preferred	Positive effect relative to status quo	None
G-2	None	None
Action H		
H-1:Preferred	None	Net benefit relative to status quo
H-2	None	None
H-3	None	Net benefit relative to status quo, but more difficult to enforce than H-1

H-4	None	Net benefit relative to status quo, but lower benefit than H-1
H-5	None	No conclusive effect on the profitability of the for-hire sector
Action I		
I-1:Preferred	None	No perceptible effect if the fishery remains open year round
I-2	Unknown net effect on profitability	Distributional effects may net out to zero
I-3	Unknown net effect on profitability	Distributional effects may net out to zero
I-4	Unknown net effect on profitability	Distributional effects may net out to zero
I-5	None	None
I-6	Unknown net effect on profitability	None
Action J		
J-1:Preferred	Minimal impact	Positive net effect on consumer surplus; profitability of the for-hire sector may increase if the associated bag limit is not kept at very low level
J-2	May reduce profitability	Uncertain effect on consumer surplus and profitability of the for-hire sector
J-3	None	None

DETERMINATION OF A MAJOR RULE

Pursuant to E.O. 12291, a regulation is considered a "major rule" if it is likely to result in: a) an annual effect on the economy of $100 million or more; b) a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or c) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterpr. es in domestic or export markets. Although essentially qualitative, the preceding analyses of impacts show that this regulation if enacted would not constitute a "major rule" under any of the mentioned criteria.

INITIAL REGULATORY FLEXIBILITY ANALYSIS

Introduction

The purpose of the Regulatory Flexibility Act is to relieve small businesses, small organizations, and small governmental entities from burdensome regulations and record keeping requirements. The category of small entities likely to be affected by the proposed plan amendment is that of commercial and for-hire businesses currently engaged in the coastal pelagic fishery. The impacts of the proposed action on these entities have been discussed above. The following discussion of impacts focuses specifically on the consequences of the proposed action on the mentioned business entities. An Initial Regulatory Flexibility Analysis (IRFA) is conducted to primarily determine whether the proposed action would have a "significant economic impact on a substantial number of small entities." In addition to analyses conducted for the Regulatory Impact Review (RIR), the IRFA provides an estimate of the number of small businesses affected, a description of the small businesses affected, and a discussion of the nature and size of the impacts.

Determination of Significant Economic Impact on a Substantial Number of Small Entities

In general, a "substantial number" of small entities is more than 20 percent of those small entities engaged in the fishery (NMFS, 1992). For the 1991/1992 fishing season, a total of 3,069 permits were issued broken down into 1,623 commercial, 938 charter boat, and 549 both commercial and charter boat permits (Raulerson, 1992). The Small Business Administration (SBA) defines a small business in the commercial fishing activity as a firm with receipts of up to $2.0 million annually. The SBA defines a small business in the charter boat activity as a firm with receipts up to $3.5 million per year. All the coastal pelagic permittees may readily fall within such definition of small business. Since the proposed action will affect practically all these permittees, the "substantial number" criterion will be met.

Economic impacts on small business entities are considered to be "significant" if the proposed action would result in any of the following: a) reduction in annual gross revenues by more than 5 percent; b) increase in total costs of production by more than 5 percent as a result of an increase in compliance costs; c) compliance costs as a percent of sales for small entities are at least 10 percent higher than compliance costs as a percent of sales for large entities; d) capital costs of compliance represent a significant portion of capital available to small entities, considering internal cash flow and external financing capabilities; or e) as a rule of thumb, 2 percent of small business entities being forced to cease business operations (NMFS, 1992).

Among the proposed regulations, Actions D, E, F, and J would have potential effects on the revenues of the subject small entities. Action D has no immediate effects, since it is mainly an administrative issue, namely, adding size limit, vessel trip limit, closed season\area, and gear restrictions to the set of measures that can be implemented through the framework procedure. Currently, these measures can be implemented only through plan amendment. Action E, i.e., separation of Gulf king mackerel into two sub-groups, has prospective effects, since it is dependent on the feasibility of establishing a TAC for each sub-group. Once a separate TAC for each sub-group is established, the most likely impacts would be distributional/regional in nature: some small business entities may incur reduction in gross revenues of an unknown amount while other similar sized businesses may gain. Considering that current participants in the mackerel fishery may be deemed small business entities, the issue of big versus small business operations, i.e., competitive standing of small business versus big business, is not relevant in

determining the distributional/regional effects of regulations. However, small businesses in the SBA sense should not be confused with the distinction between large and small boats in the fishery. Action F, which imposes vessel possession (trip) limits, is not expected to reduce the total commercial catch of Atlantic Spanish mackerel, but is expected to alter the distribution of catch. One of its major consequences would be to spread out the commercial quota more fairly among the commercial participants. It is also likely that this particular measure would lengthen the season, thus bringing about better pricing schedule for commercial fishing businesses. However, the larger boats in the southern zone may rendered inefficient during the time when landings are restricted. It cannot be determined whether the number of days they would be forced to discontinue fishing would exceed those under the status when the fishery is totally closed some part of the fishing season. There are about 14 large boats which will be adversely impacted. On the other hand, there are about 60 to 150 small boats which will benefit from the proposed action. Action J, which increases the size limit for king mackerel from 12 to 20 inches fork length, has minimal impacts on the revenue of commercial harvesters, since marketable commercial catches are usually about 20 inches fork length. There would be some effects on recreational catches, but as long as the bag limit is not kept at very low level, charter boat trips and revenues would not be negatively affected. Potential increases in trips could benefit the charter boat industry.

Actions H, F, and J are the major actions which could affect compliance costs. Action H is expected to reduce compliance cost due to the relaxation of the income requirement to qualify for coastal pelagic permits. Action F presents a relatively complicated window for commercial fishing in the southern zone. The magnitude of potential increase in compliance cost cannot be determined. It is very unlikely, however, that fishing operations would be compelled to undertake capital investment mainly for the purpose of complying with the regulations. It may only be noted that the proposed rule would entail a relatively large increase in enforcement cost. In areas north of Florida, particularly in North Carolina where commercial fishing for mackerel is relatively substantial, the proposed possession limit would render federal and state regulations compatible, and thus would tend to reduce compliance costs. The proposed increase in size limit under Action J could increase compliance costs to the charter boat industry, but such increase is not expected to be substantial. Currently, charter boat anglers have to comply with a size limit of 12 inches fork length or 14 inches total length. Compliance with the same measure although at a larger size limit should not entail substantial cost increase to charter boat operators. Additionally, the elimination of reference to total length can slightly simplify the size limit rule.

Explanation of Why the Action is Being Considered

Refer to the section on Problems and Issues in the RIR and to Section IV of the amendment document.

Objectives and Legal Basis for the Rule

Refer to the section on Objectives in the RIR and to Section V of the amendment document. The Magnuson Fishery Conservation and Management Act of 1976 provides the legal basis for the rule.

Demographic Analysis

Refer to the Coastal Pelagic Fishery Management Plan, as amended.

Cost Analysis

Refer to the section on Impacts of Alternative Actions and Summary of Regulatory Impacts in the RIR.

Competitive Effects Analysis

The industry is composed entirely of small businesses (harvesters and charter boats operations). Since no large businesses are involved, there are no disproportional small versus large business effects.

Identification of Overlapping Regulations

The proposed action does not create overlapping regulations with any state regulations or other federal laws.

Conclusion

Although most of the measures proposed in this amendment do not result in significant economic impacts on small entities, the criterion of "significant economic impact" may be met because of the implied decrease in revenues to larger boats and implied increase in gross revenues to small boats under Action F. In this regard, the foregoing information and pertinent portions of the RIR are deemed to satisfy the analysis required under the RFA.

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APPENDIX R1

FLORIDA DEPARTMENT OF NATURAL RESOURCES
MARINE FISHERIES INFORMATION SYSTEM
Spanish Mackerel Landings on Floridas East Coast
Attributable to Large Boats vs. Small Boats
(edited data through batch 181)

YEAR 91

	BOAT			
	LARGE		SMALL	
MONTH	POUNDS	TRIPS	POUNDS	TRIPS
JANUARY	58082	125	191814	792
FEBRUARY	2984	22	59885	522
MARCH	1897	13	27745	501
APRIL	7679	41	37313	526
MAY	114	7	1407	103
JUNE	1135	6	5343	115
JULY	3794	7	4934	108
AUGUST	⌐	⌐	2640	106
SEPTEMBER	476	1	11254	62
OCTOBER	521	9	9149	139
NOVEMBER	43208	23	15156	157
DECEMBER	270412	22	38342	78
TOTAL	390302	276	404982	3209

YEAR 90

	BOAT			
	LARGE		SMALL	
MONTH	POUNDS	TRIPS	POUNDS	TRIPS
JANUARY	11030	56	65636	371
FEBRUARY	15861	78	77136	431
MARCH	13410	60	76477	551
APRIL	23131	72	111348	892
MAY	1358	38	13720	496
JUNE	3396	55	10374	366
JULY	114	18	9172	268
AUGUST	17686	32	5116	387
SEPTEMBER	1899	38	31515	587
OCTOBER	4783	60	14694	751
NOVEMBER	47175	164	142076	1239
DECEMBER	1116610	120	164962	372
TOTAL	1256453	791	722226	6711

FLORIDA DEPARTMENT OF NATURAL RESOURCES
MARINE FISHERIES INFORMATION SYSTEM
Spanish Mackerel Landings on Floridas East Coast
Attributable to Large Boats vs. Small Boats
(edited data through batch 181)

YEAR 89

	BOAT			
	LARGE		SMALL	
MONTH	POUNDS	TRIPS	POUNDS	TRIPS
JANUARY	20208	87	71301	500
FEBRUARY	7232	51	46514	364
MARCH	2315	23	16035	240
APRIL	21658	126	39726	605
MAY	5544	102	26339	376
JUNE	903	59	4771	191
JULY	402	42	9065	168
AUGUST	1479	68	13402	184
SEPTEMBER	451	11	2701	154
OCTOBER	25432	72	47360	542
NOVEMBER	49623	142	115066	782
DECEMBER	2262412	184	63238	349
TOTAL	2397659	967	455518	4455

YEAR 88

	BOAT			
	LARGE		SMALL	
MONTH	POUNDS	TRIPS	POUNDS	TRIPS
APRIL	21124	97	42737	749
MAY	4313	120	4965	384
JUNE	597	37	5299	209
JULY	2991	65	5489	132
AUGUST	739	82	2767	149
SEPTEMBER	3322	68	17752	266
OCTOBER	13038	56	59824	506
NOVEMBER	42635	44	73053	691
DECEMBER	2237820	154	54667	322
TOTAL	2326579	723	266553	3408

FLORIDA DEPARTMENT OF NATURAL RESOURCES
MARINE FISHERIES INFORMATION SYSTEM
Spanish Mackerel landings on Florida's East Coast (UNEDITED)
Attributable to Large Boats vs. Small Boats
(unedited data batches 182 through 212)

YEAR 92

	BOAT	
	SMALL	
MONTH	POUNDS	TRIPS
JANUARY	9539	146
TOTAL	9539	146

YEAR 91

	BOAT			
	LARGE		SMALL	
MONTH	POUNDS	TRIPS	POUNDS	TRIPS
JANUARY	3267	3	40035	80
FEBRUARY	15659	1	64	10
MARCH	83	2	14922	90
APRIL	1556	17	55260	782
MAY	262	4	8770	331
JUNE	16	6	10267	262
JULY	109	10	12363	261
AUGUST	445	12	24885	342
SEPTEMBER	1382	20	21134	631
OCTOBER	546	9	28306	776
NOVEMBER	78588	15	81494	640
DECEMBER	1040664	53	349144	450
TOTAL	1142577	152	647144	4655

YEAR 90

	BOAT	
	SMALL	
MONTH	POUNDS	TRIPS
AUGUST	6	1
OCTOBER	126	2
NOVEMBER	402	1
TOTAL	534	4

Projection of 1992/93 Commercial Catch
Atlantic Group Spanish Mackerel
(Based on 1991/92 Catch)
(F/SE011:MFG: 7/22/92)

MONTH	STAGE	TRIP LIMIT	PROJECTED CATCH AVAILABLE NORTHERN	SOUTHERN	CUM TOTAL	FAVORED PARTICIPANT
April to November	1st	1500 lbs	1.524 M	0.471 M	1.995 M	Small Boat
December	2nd	Unlimited		0.605 M	2.600 M	Big Boats
	3rd: 2.60 M to 3.25 M[1]	1000 lbs		0.650 M	3.250 M	Small Boat
January to March	4th: 3.25 M to 3.50 M[2]	500 lbs		0.250 M	3.500 M	Small Boats

[1] 80 % (2.60 M) to 100 % (3.25 M) of adjusted quota
[2] 100 % (3.25 M) of adjusted quota to unadjusted quota (3.50 M)

PPENDIX R3

ATLANTIC GROUP SPANISH MACKEREL
(1991/92) PRELIMINARY COMMERCIAL AND RECREATIONAL LANDINGS, (NMFS/SEFC/HMFSS/FDOD)
Whole Weight in Pounds (SMAB1 92, 05/08/92.NMFS PSB011 HPG)

1991/92 Commercial (Quota 3.50M)

NORTH AND MID-ATLANTIC STATES		ATLA % of Quota (Apr-Nov) (3.50M)	NORTH	SOUTHERN NC	AREA SC	GA	Total	Com Total	% of Quota (3.50M)	FLORIDA East Coast	Com Total	% of Quota (3.50M)		SOUTH ATLANTIC Total	Com. Total	% of Quota (3.50
S. ENG	10,000	0	Apr 91	2,500	170	21	2,777	2,777	0	Apr 91	101,061	101,061	3	104,630	104,630	3
NC	0	0	May	150,410	75		150,491	153,268	4	May	10,553	112,414	3	161,044	265,682	8
NY+NJ	192,000	5	June	94,132		44	94,176	247,444	7	June	10,701	120,175	4	110,937	376,619	11
MD	27,000	1	July	105,190	10		105,210	352,662	10	July	21,223	150,398	4	126,441	503,060	14
VA	447,000	13	August	95,505			95,505	448,257	13	August	27,070	178,368	5	123,565	626,825	18
			September	150,695	14		150,709	598,966	17	September	34,246	212,614	6	192,755	819,380	23
			October	233,621	84		233,705	832,671	24	October	40,243	252,857	7	273,720	1,093,100	31
			November	18,223			18,223	850,894	25	November	210,475	463,332	13	(+NY-VA) 902,088	1,995,088	57
			December	719			719	851,613	25	December	2,080,472	2,561,804	73	2,081,191	4,076,997	116
Closed December 17, 1991			Closed December 17, 1991							Closed December 17, 1991						
			January 92				0	851,613	25	January 92	57,302	2,000,106	75	57,302	4,134,279	118
			February				0	851,613	25	February	124,157	2,733,343	78	124,157	4,258,530	122
			March				0	851,613	25	March	115,789	2,849,132	81	115,789	4,374,325	125
Total	886,000	19	Total	850,780	348	65	851,613			Total	2,849,132			4,374,325		
S S. Atl	15.2		% North	100.0	0.0	0.0										
			% S. Atl	19.6	0.0	0.0	19.6			% S.Atl	65.1					

1991/92 Recreational (Quota 3.50M)

NORTH AND MID-ATLANTIC STATES		Com. Total	% of Quota (3.50M)	NORTH	SOUTHERN NC	AREA SC	GA	Total	Com. Total	% of Quota (3.50M)	FLORIDA East Coast	Com. Total	% of Quota (3.50M)	Head-Boat	South Atlantic Total	Com. Total	% of Quota (3.50M
MA	36,961	36,961	1	Apr 91	6,020		101	6,021	6,021	0	Apr 91	200,735	200,735	6	243,617	243,617	7
RI	230	36,191	1	May/Jun	365,078	54,303	532	600,713	415,036	12	May/Jun	140,545	341,280	10	540,600	783,105	23
CT	17,940	54,130	2	Jul/Aug	444,462	103,702	2,504	550,018	968,452	28	Jul/Aug	23,752	365,032	10	592,510	1,375,623	40
NY	22,572	76,711	2	Sep/Oct	207,022	66,994		356,220	1,322,670	38	Sep/Oct	206,765	570,777	16	584,543	1,960,166	56
NJ	27,461	104,172	3	Nov/Dec	5,000			5,000	1,328,570	38	Nov/Dec	152,005	722,042	21	185,424	2,145,590	62
DE	3,300	107,560	3	Jan 92				0	1,328,570	38	Jan 92	6,204	728,106	21	9,650	2,155,240	62
MD	53,245	160,805		Feb				0	1,328,570	38	Feb	27,563	756,069	22	80,000	2,240,040	64
VA	67,001	170,810	5	March				0	1,328,570	38	March		756,069	22	67,061	2,313,100	66
Total	227,864			Total	1,070,000	240,050	3,227	1,328,570			Total	756,069			@ 2,313,100		
S S. Atl	9.9			% North	81.2	18.6	0.2										
				% S. Atl	46.6	10.7	0.1	57.4			% S.Atl	32.7					

1991/92 Combined Commercial and Recreational (TAC 7.00M)

NORTH AND MID-ATLANTIC STATES		NORTH	SOUTHERN NC	AREA SC	GA	Total	% of TAC (7.00M)		FLORIDA East Coast	% of TAC (7.00M)	Head-Boat	South Atlantic Total	% of TAC (7.00M
Com Total	886,000	Com Total	850,780	348	65	851,613	12	COM TOT	2,849,132	41		@ 4,374,325	62
Rec Total	227,864	Rec Total	1,070,000	240,050	3,227	1,328,570	19	REC TOT	756,069	11		@ 2,313,100	33
Grnd Total	893,864	Grnd Total	1,937,870	240,007	3,292	2,187,769	31	GRAND TOT	3,605,201	52		@ 6,687,434	96
		% North	88.6	11.0	0.2								
S S. Atl	13.4	% S. Atl	29.0	3.6	0.0	32.7							

ATLANTIC GROUP SPANISH MACKEREL

(1990/91) PRELIMINARY COMMERCIAL AND RECREATIONAL LANDINGS, (NMFS/SEFC/NMFSS/PSDB)

Whole Weight In Pounds (SAS90 01, 05/08/92,NMFS PSEUDI MFG)

1990/91 Commercial (Quota 3.14M)

MID-ATLANTIC AREA			SOUTHERN AREA							FLORIDA				SOUTH ATLANTIC		
		% of Quota (Apr-Nov) (3.14M)	MONTH	NC	SC	GA	Total	Cum Total	% of Quota (3.14M)	MONTH	East Coast	Cum Total	% of Quota (3.14M)		Total	Cum. Total	% of Quota (3.14M)
NC	0	0	Apr 90	2,032			2,032	2,032	0	Apr 90	134,479	134,479	4		137,111	137,111	4
VT	12,770	0	May	82,962		283	83,245	85,847	3	May	15,078	149,557	5		98,203	235,404	7
NJ	26,975	1	June	105,766	40	437	106,243	192,090	6	June	13,770	163,327	5		120,013	355,417	11
MD	21,300	1	July	95,090	21		95,117	287,207	9	July	9,266	172,613	5		104,403	459,820	15
VA	480,703	16	August	109,590			109,590	396,797	13	August	22,000	195,421	6		132,300	592,210	19
			September	199,662	80		199,062	596,859	19	September	33,416	228,835	7		233,278	825,494	26
			October	107,007	3		107,090	704,368	25	October	19,603	248,438	8		207,293	1,032,787	33
			November	52,213	100	60	52,433	836,782	27	November	180,053	428,091	14	(+NY-VA)	782,850	1,025,037	58
			December	3,070			3,070	839,852	27	December	1,281,572	1,710,663	55		1,284,642	3,110,279	99
			January 91	20			20	839,880	27	January 91	293,891	2,013,554	64		293,910	3,404,190	109
			Closed January 26, 1991							Closed January 26, 1991							
			February							February	79,495	2,093,049	67		79,495	3,483,683	111
			March				0	839,880	27	March	44,647	2,137,696	68		44,647	3,528,340	112
Total	550,764		Total	830,836	284	760	839,880			Total	2,137,696				3,528,340		
% North			% North	99.0	0.0	0.1											
% S. Atl	15.6		% S. Atl	23.6	0.0	0.0	23.8			% S.Atl	60.6						

1990/91 Recreational (Quota 1.00M)

MID-ATLANTIC AREA				SOUTHERN AREA							FLORIDA				South Atlantic		
MONTH		Cum. Total	% of Quota (1.00M)	MONTH	NC	SC	GA	Total	Cum. Total	% of Quota (1.00M)	MONTH	East Coast	Cum. Total	% of Quota (1.00M)	Head-Boat	Total	Cum. Total	% of Quota (1.00M)
Apr 90		0	0	Apr 90			170	170	170	0	Apr 90	11,660	11,660	1		11,810	11,810	1
May/Jun	4,216	4,216	0	May/Jun	261,201	90,505	8,373	364,230	364,400	20	May/Jun	21,424	33,072	2		388,077	401,895	22
Jul/Aug	77,051	81,065	5	Jul/Aug	305,294	75,570	20,253	401,123	765,532	41	Jul/Aug	6,102	37,254	2		407,950	809,051	40
Sep/Oct	13,700	94,001	5	Sep/Oct	310,016	10,064	3,301	333,371	1,097,903	59	Sep/Oct	170,220	215,402	12		526,306	1,409,046	76
Nov/Dec		94,001	5	Nov/Dec	7,000			7,000	1,105,700	59	Nov/Dec	80,030	304,520	16		90,921	1,505,967	81
Jan/Feb 91		94,001	5	Jan/Feb 91				0	1,105,700	59	Jan/Feb 91	23,900	328,420	18		23,900	1,529,876	82
March		94,001	5	March	6,020		102	6,021	1,112,707	60	March	246,694	574,022	31		253,615	1,783,290	96
Total	94,001			Total	891,294	191,215	30,199	1,112,707			Total	574,022			0	1,783,290		
% North				% North	80.1	17.2	2.7											
% S. Atl	5.4			% S. Atl	50.0	10.7	1.7	62.4			% S.Atl	32.2						

1990/91 Combined Commercial and Recreational (TAC 5.00M)

MID-ATLANTIC AREA			SOUTHERN AREA				% of		FLORIDA	% of	Head-	South Atlantic	% of
				NC	SC	GA	Total	TAC (5.00M)	East Coast	TAC (5.00M)	Boat	Total	TAC (5.00M)
Com Total	550,764		Com Total	830,836	284	760	839,880	17	COM TOT	2,137,696	43	0 3,528,340	71
Rec Total	95,661		Rec Total	891,294	191,215	30,199	1,112,707	22	REC TOT	574,022	11	0 1,783,290	36
Gran Total	646,425		Gran Total	1,730,130	191,499	30,959	1,952,587	39	GRAN TOT	2,712,018	54	0 5,311,630	106
			% North	88.6	9.8	1.6						(ABC = 4.2 - 6.0M)	
S. Atl	12.2		% S. Atl	32.8	3.6	0.6	36.8		% S Atl	51.1			

ATLANTIC GROUP SPANISH MACKEREL
(1989/90) PRELIMINARY COMMERCIAL AND RECREATIONAL LANDINGS, (NMFS/SEFC/HMPSS/PDB)
Whole Weight in Pounds (SHARE 90.06/24/92)

1989/90 Commercial (Quota 3.26M)

MONTH	NORTHERN AREA NC	SC	GA	Total	Cum. Total	% of Quota (3.26M)	MONTH	FLORIDA East Coast	Cum. Total	% of Quota (3.26M)	Total	South Atlantic Cum. Total	% of Quota (3.26M)
Apr 89	1,503	300		1,803	1,803	0	Apr 89	61,304	61,304	2	63,107	63,107	2
May	34,344			34,344	36,147	1	May	31,083	93,287	3	66,227	129,414	4
June	70,256	604	50	70,890	107,137	3	June	5,074	98,941	3	75,964	205,378	6
July	121,473	458		121,931	229,068	7	July	9,467	108,408	3	131,398	337,476	10
August	33,815	3		33,818	262,886	8	August	14,881	123,289	4	48,699	385,975	12
September	30,740	42		30,782	302,668	9	September	3,152	126,441	4	47,934	426,909	13
October	270,323	118		270,441	573,909	18	October	72,792	199,233	6	344,233	773,142	24
November	17,006			17,006	590,915	18	November	104,689	303,922	11	181,695	954,837	29
December				0	590,915	18	December	2,325,650	2,629,572	83	2,325,650	3,280,487	101
Closed 12/23/89							Closed 12/23/89						
January 90				0	590,915	18	January 90	76,668	2,706,230	85	76,668	3,357,153	104
February				0	590,915	18	February	92,997	2,859,135	88	92,997	3,450,150	106
March	108			108	591,021	18	March	89,887	2,949,122	91	89,993	3,540,143	108
Total	589,366	1,605	50	591,021			Total	2,949,122			3,540,143		
% North	99.7	0.3	0.0										
0	16.6	0.0	0.0	16.7			% S.Atl	83.3					
After Closure Catch	108	0	0	108				250,650			250,858		

1989/90 Recreational (Quota 2.70M)

MONTH	NORTHERN AREA NC	SC	GA	Total	Cum. Total	% of Quota (2.70M)	MONTH	FLORIDA East Coast	Cum. Total	% of Quota (2.70M)	Head-Boat	Total	South Atlantic Cum. Total	% of Quota (2.70M)
Apr 89	229	74		303	303	0	Apr 89	37,047	37,047	1		37,350	37,350	1
May/Jun	312,041	180,413	5,316	497,172	497,475	18	May/Jun	47,536	84,583	3		534,708	572,058	21
Jul/Aug	304,447	66,350	300	471,175	968,650	35	Jul/Aug		84,583	3		471,175	1,043,233	38
Sep/Oct	195,722	23,782		219,504	1,170,134	43	Sep/Oct	15,292	99,875	4		234,776	1,278,009	46
Nov/Dec	2,783			2,783	1,180,917	43	Nov/Dec	97,950	196,825	7		99,833	1,377,842	50
Jan/Feb 90				0	1,180,917	43	Jan/Feb 90	40,952	237,077	9		40,952	1,418,794	51
March		170		170	1,181,087	43	March	11,048	248,525	9		11,818	1,430,611	52
Total	809,722	270,778	5,587	1,181,087			Total	248,525			0	1,430,611		
% North	75.8	23.7	0.5											
% S. Atl	82.6	18.8	0.4	82.6			% S.Atl	17.4						

1989/90 Combined Commercial and Recreational (TAC 6.00M)

	NORTHERN AREA NC	SC	GA	Total	% of TAC (6.00M)		FLORIDA East Coast	% of TAC (6.00M)	Head-Boat	South Atlantic Total	% of TAC (6.00M

ATLANTIC GROUP SPANISH MACKEREL
(1988/89) PRELIMINARY COMMERCIAL AND RECREATIONAL LANDINGS, (NMFS/SEFC/SEFSS/FDHR)
Whole Weight in Pounds (SUARS 89.05/11/90)

1988/89 Commercial (Quota 3.04 M)

MONTH	NORTHERN AREA NC	SC	GA	Total	Cum. Total	% of Quota (3.04M)	MONTH	FLORIDA East Coast	Cum. Total	% of Quota (3.04M)	South Atlantic Total	Cum. Total	% of Quota (3.04M)
Apr 88	449	50		499	499	0	Apr 88	63,861	63,861	2	64,360	64,360	2
May	19,557		502	20,119	20,618	1	May	9,270	73,139	2	29,389	93,757	3
June	50,404	18		50,422	79,040	3	June	5,000	78,035	3	55,310	150,075	5
July	109,775	10		109,785	188,825	6	July	8,490	87,515	3	118,265	276,340	9
August	65,557			65,557	254,382	8	August	3,800	91,021	3	69,063	345,403	11
September	61,230	230	83	61,551	315,933	10	September	21,074	112,095	4	82,625	428,028	14
October	107,020	300	50	107,370	423,311	14	October	72,000	184,955	6	180,238	608,266	20
November	13,552	421	31	14,004	437,315	14	November	115,000	300,043	10	129,692	737,958	24
December	2,682			2,682	439,977	14	December	2,292,407	2,592,130	85	2,295,140	3,033,197	100
Closed 12/30/88							Closed 12/30/88						
January 89	123			123	440,100	14	January 89	91,500	2,684,630	88	91,632	3,124,729	103
February				0	440,100	14	February	53,760	2,738,365	90	53,760	3,178,485	105
March				0	440,100	14	March	18,350	2,756,735	91	18,350	3,196,835	105
Total	430,345	1,029	720	440,100			Total	2,756,735			3,196,835		
% North	99.8	0.2	0.2				% North						
% S.Atl	13.7	0.0	0.0	13.8			% S.Atl	86.2					
After Closure Catch Pounds:	123	0	0	123				103,005			103,720		

1988/89 Recreational (Quota 0.90M)

MODE	NORTHERN AREA NC	SC	GA	Total	Cum. Total	% of Quota (0.90M)	MODE	FLORIDA East Coast	Cum. Total	% of Quota (0.90M)	Boat-Boat	South Atlantic Total	Cum. Total	% of Quota (0.90M
Apr 88	901			901	901	0	Apr 88		0	0		901	901	0
May/June	604,000	92,670	5,763	702,433	703,334	73	May/June	49,498	49,498	5		751,931	752,832	78
July	198,544	23,000	864	219,407	922,831	96	July	71,243	120,741	13		290,740	1,043,572	109
August	387,051	18,664	812	407,127	1,329,958	139	August	55,989	176,730	18		463,116	1,506,688	157
September	475,063	12,498		488,288	1,818,227	189	September	18,320	197,050	19		498,588	2,005,296	209
October	383,174			383,174	2,201,401	229	October	13,703	208,762	21		396,877	2,402,183	250
Close 10/03/88							Close 10/03/88							
November	1,600			1,600	2,203,001	229	November	175,586	376,288	39		177,186	2,579,269	269
December				0	2,203,001	229	December	120,200	508,520	53		120,200	2,700,529	282
Jan/Feb 89				0	2,203,001	229	Jan/Feb 89	55,425	560,953	58		55,425	2,763,954	288
Mar	229	74		303	2,203,304	230	Mar	37,047	598,000	62		37,350	2,801,304	292
Total	2,049,102	146,903	7,239	2,203,304			Total	598,000			0	2,801,304		
% North	93.0	6.7	0.3				% North							
% S.Atl	73.2	5.2	0.3	78.7			% S.Atl	21.3						
After Closure Catch Pounds:	347,922	74	0	347,995				469,615			757,610			

APPENDIX R4

Summary Description of All Management Actions

Management Measure	Description
Action A	
A-1	Add three new problems and modify three existing problems
A-2	Add objective of optimizing economic benefits to the coastal pelagic fisheries
Action B	
B-1	Recovery period: 12 years for king mackerel beginning 1985; 7 years for Spanish mackerel beginning 1987
B-2	Status quo: no specific recovery period
B-3	Recovery period: 1.5 times generation time for overfished stock
B-4	Recovery period: 1 generation time for overfished stock
B-5	Recovery period: not longer than _____ years
Action C	
C-1	Biennial stock assessment and preseason adjustment
C-2	Status quo: annual stock assessment and preseason adjustment
Action D	
D-1	Adds size limit, vessel trip limit, closed season/area, and gear restrictions to framework adjustment
D-2	Status quo: only MSYs, TACs, quotas, bag limits, and permits are allowed under framework adjustment
Action E	
E-1	When ABC ranges can be established, separate Gulf king mackerel into two subgroups with Florida/Alabama border as dividing line; maintain 68:32 recreational/commercial allocation for each subgroup
E-2	Revise recreational/commercial allocation of Gulf king mackerel into 70:30 ratio to be implemented when a chosen TAC does not reduce any sector's catch level

E-3	Three sub-options: 1. Maintain 68:32 recreational/commercial allocation until a chosen TAC allows 4-fish bag limit; thereafter allocate all TAC increases to the commercial sector 2. Reallocate using actual catch ratio during some historic catch period 3. Reallocate for greatest economic benefits
E-4	Allocate king mackerel caught between Volusia-Flagler line and Dade-Monroe line in Florida to appropriate migratory group based on best available data
E-5	Status quo: manage Gulf king mackerel as one stock from Florida through Yucatan, Mexico
Action F	
F-1	Separate Atlantic Spanish mackerel into northern and southern zones with separate commercial vessel possession limits for the two groups
F-2	Separate Atlantic Spanish mackerel into northern and southern zones with 3,500 lb. vessel trip limit for the norther zone and the southern zone restricted according to either of the two options below
F-2(a)	Adopt original proposal of the Florida Marine Fisheries Commission on commercial vessel trip limit
F-2(b)	Adopt original proposal of the Organized Fishermen of Florida on commercial vessel trip limit
F-3	Status quo: no commercial trip limit for Atlantic Spanish mackerel
Action G	
G-1	To qualify for commercial permit, earned income from commercial fishing in any one of the three preceding calendar years may be used
G-2	Status quo: to qualify for commercial permit, only earned income from commercial fishing for the preceding calendar year
Action H	
H-1	Recreational allocation of mackerel is controlled by bag limits with no reversion to zero when allocation is taken; for Gulf king mackerel, the bag limit reverts to 1 fish if the Regional Director determines the allocation will be taken with the Council proposed bag limits
H-2	Status quo: for an overfished stock, the bag limit reverts to zero when quota is taken
H-3	Bag limits are reduced by 50% when 75% of quota is taken; bag limit will not revert to zero when full quota is taken
H-4	Suballocate Gulf king mackerel into equal six-month quotas; bag limit reverts to zero when quota is taken

H-5	Charter boat permit applicants must agree to conform to more restrictive federal or state of landing bag limits regardless of where fishing occurs
Action I	
I-1	Change fishing year for recreational mackerel allocation to calendar year; fishing year for other mackerel fisheries remain the same; fishing year for commercial allocation of other species is calendar year
I-2	Change fishing year for all mackerel fisheries to May-April; winter boundary for Atlantic-Gulf king mackerel changes on May 1
I-3	Change fishing year for all mackerel fisheries to April-March
I-4	Change commercial and recreational fishing year for Gulf king mackerel to November-October
I-5	Status quo: April-March fishing year for Gulf and Atlantic Spanish mackerel and Atlantic king mackerel; July-June fishing year for Gulf king mackerel
I-6	September-August fishing year for all commercial mackerel fisheries
Action J	
J-1	Increase king mackerel size limit to 20 inches fork length; delete all references to total length for size limits on all managed species
J-2	Increase king mackerel minimum size limit to 20 inches or the more stringent of state of federal size regulation
J-3	Status quo: minimum size limit for king mackerel is 12 inches fork length (14 inches total length

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