AMENDMENT NUMBER 5

TO

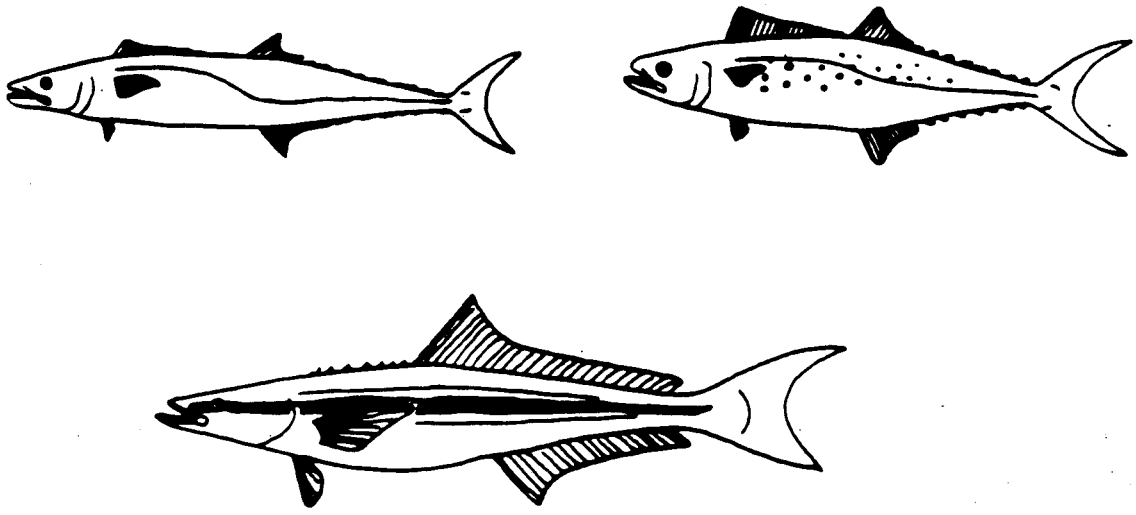
THE FISHERY MANAGEMENT PLAN

FOR THE

COASTAL MIGRATORY PELAGIC RESOURCES

(MACKERELS)

INCLUDES ENVIRONMENTAL ASSESSMENT
AND
REGULATORY IMPACT REVIEW



GULF OF MEXICO FISHERY MANAGEMENT COUNCIL
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AND

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL
SOUTHPARK BUILDING, SUITE 306
1 SOUTHPARK CIRCLE
CHARLESTON, SOUTH CAROLINA 29407
803-571-4366

MARCH 1990

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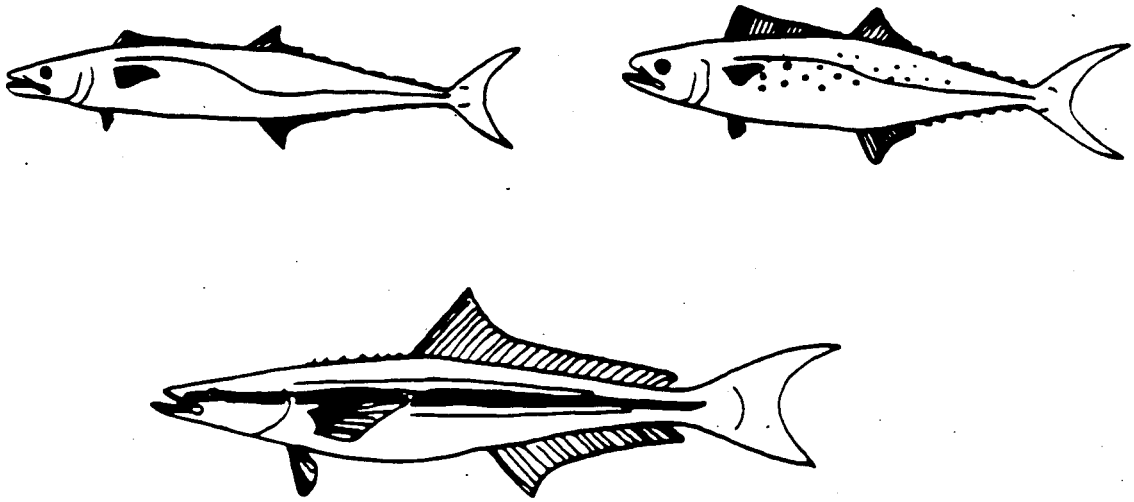

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I. Introduction

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 made 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 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.

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 to prohibit drift gill nets for the overfished groups of Gulf mackerels and Atlantic Spanish mackerel.

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

Amendment 5 proposes a number of changes in the management regime which are described in Section III.

II. Description of Fishery and Utilization Patterns

Amendments 1 through 3 describe the fishery and recent trends in catch. Tables 1 through 4 show catches from 1979 through October of 1988. Table 5 shows the ranges of acceptable biological catch (ABC), the total allowable catches (TAC), and actual catch since implementation of the framework for seasonal adjustment in 1985.

All migratory groups of mackerel have been at one time recognized by the Councils as being overfished; however, the 1989 stock assessment report noted strong recruitment in the Atlantic group of king mackerel and redefined it as not being overfished. Spawning stock biomass for Atlantic and Gulf Spanish mackerel and Gulf king mackerel remains low enough to affect recruitment, and therefore they are currently designated as being "overfished."

Permits are required to fish under the commercial quotas for mackerels and be exempt from the bag limits. For the 1988-1989 season, the National Marine Fisheries Service (NMFS) issued 1,051 permits for Gulf king mackerel, 1,567 for Atlantic king mackerel, 108 for Gulf Spanish mackerel, and 1,242 for Atlantic Spanish mackerel. Cobia catches, which are restricted only by a 33-inch (83.8 cm.) minimum size limit, have exceeded the one million pound (M) (453592 kg) MSY since 1981 (Table 6).

and increased in abundance in areas where they historically occurred but had declined or disappeared in recent years. This may be due to unusually warm waters or actual rebuilding of the stocks. Commercial landings in the Mid-Atlantic area increased to 176,000 pounds (79,832 kg) in 1986 and to 381,000 pounds (172,819 kg) in 1987 (Table 4). Less than 5 percent of these landings came from the EEZ with 95 percent being taken in state controlled waters (NMFS, NEFC). Prior to 1986, the Marine Recreational Fisheries Statistical Survey (MRFSS) showed no recreational catch in the area; but, in 1986, 1987, and 1988 some have been recorded (Table 4). The total recreational annual estimate based on few specimens is less than 25,000 pounds (11,340 kg). Recent total catches of king mackerel off Mid-Atlantic states are about 150,000 pounds (68,039 kg) (Table 2).

Although these fish have been considered in the stock assessment, their unregulated catches have not been used in monitoring quota catches.

b. Socioeconomic: Extension of management to the Mid-Atlantic Council's area of jurisdiction would require approval by that Council and its participation in the decision process.

The direct impact of this measure on both commercial and recreational interests in the EEZ will be minimal since reported mackerel catches by both sectors come almost exclusively from state waters. In this regard, this action is more likely to increase management cost with negligible expected impacts on fishing participants.

Indirect beneficial effects of this measure occur if bordering states adopt the EEZ measures which essentially consist of quotas, bag limits, and gear restrictions. More effective enforcement and compliance with regulations would be expected from fishermen in the extended area. Thus, the proposed extension of management would serve also as an educational tool promoting greater user responsibility and conservation. These indirect impacts would be either significant or minimal depending on the nature of the commercial and recreational fishing sectors in these states. Commercial and recreational catches of king mackerel are relatively small. In 1988, with highest landings in recent years, the recreational sector took 139,000 pounds (63,000 kg) and the commercial sector took only 14,000 pounds (6,350 kg). These figures (Table 2) are only through October but cover the effective availability of fish in that area. Recent expansion of the Spanish mackerel fishery occurred in state waters with only five percent being taken in the EEZ. This amounted to 21,000 pounds (9,525 kg) in 1988 by recreational and commercial fishermen. If the implementation of regulation resulted in the unlikely maximum adverse impact of total loss of these commercial fisheries, the value lost would be only $14,700 for king mackerel and $5,164 for Spanish mackerel.

It is not known whether the net effect of these direct and indirect impacts would be positive or negative.

Rejected Alternative for Action 1

No Change: Federal regulation pursuant to this plan will apply to the EEZ within the jurisdiction of the Gulf and South Atlantic Councils. However, maximum sustainable yield and optimum yield are based on the stocks in the U.S. EEZ, the territorial sea, and internal waters of the various states.

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.**

Discussion:

Problem 1: The condition of the stocks has changed and fishing has been limited.

Problem 2: A stock assessment system for pre-season adjustment has been implemented. The MRFSS in two-month waves, six times a year was not designed to monitor catch for seasonal closures as it is now being used. An economic assessment system for evaluating the performance of the fishery and the likely impact of pre-season adjustments has not been developed nor have economic data for allocations been collected. Information on age structure of catch needs to be expanded.

Problem 3: No change.

Problem 4: No change. Some states lack the authority to implement timely bag limits and closures when quotas are filled. As a result, fishing may continue in state waters after closure of the EEZ causing TAC to be exceeded.

Problem 5: Cobia MSY was set a 1,000,000 pounds (1 M) (453,592 kg) and was recognized as being imperfect. Annual catches from 1981 to 1986 (Table 6) have averaged 1.9 M (861,826 kg).

Former Problem 6 was deleted. Quotas have reduced high catches of both the large adult fish overwintering off Louisiana and recruits. Under quotas the more marketable, smaller fish are targeted to maximize economic returns.

A new Problem 6 is added. Most fishery scientists agree that there are at least three migratory groups of king mackerel. Mixing occurs seasonally, and the extent of interbreeding is unknown.

5. Cobia are presently harvested at a size below that necessary for maximum yield and may be overfished in some areas beyond the management area. Most southeastern states have not yet adopted the recommended minimum size limit. Also, no management action has been taken by states which have jurisdiction over cobia populations in Chesapeake Bay, which appear to have been overfished. Federal enforcement capability is limited and not believed to be very effective in this case.

6. Development of a fishery targeting large, mature king mackerel in the wintertime off Louisiana may eventually reduce recruitment to the resource. Total catch of large, mature king mackerel has greatly increased due to development of a commercial fishery in Louisiana during the winter months. Reported commercial catch increased from 0 during 1981-1982 to 1.2 million pounds (544,311 kg) during the 1982-1983 winter season. Given the already excessive fishing effort on smaller fish in the Gulf of Mexico, increasing fishing effort on the spawning population could result in recruitment declines.

7. Current allocations of Atlantic migratory group Spanish mackerel do not reflect the distribution (i.e., recreational/commercial ratios) of catches during the early to mid 1970s, which was prior to the development of the deep water run-around gill-net fishery and when the resource was not overfished.

Discussion: Management measures implemented by the amended FMP have eliminated some of the originally identified problems, and new problems have developed in the fishery.

ACTION 3: PLAN OBJECTIVES

Section 2.6, Management Objectives is revised as follows to add new objectives:

2.6 Management 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 into 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 area.

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.

are insufficient for the net boats. Almost all Spanish mackerel fishing on Florida's upper west coast occurs in the 9-mile (17 km) state territorial waters and can be controlled by state quotas. Florida allocated its traditional portion of the commercial catch to provide about 20 percent to the Panhandle fishery, composed of about 52 small boats. In Southwest Florida and the Keys there are about 65 small and 28 large net boats, although over half of these boats rarely target Spanish mackerel. In Alabama, Mississippi, and Louisiana there are about 20 small net boats that fish directly for or take Spanish mackerel as a bycatch (NMFS data).

Changing the fishing year to begin on April 1 would provide fishermen in the northern Gulf first access to the fish in a new fishing year. This measure could partly solve the perceived geographical inequity, but it has some implications that need to be recognized. Florida's zoning of its quota on Spanish mackerel refers mainly to landings in a particular geographical area and not necessarily by boats in that area. Thus, it is possible for larger boats from one area, for example those from southwest Florida and the Keys, to fish and land in other areas and fill the quota therein. This occurrence has the tendency to negate the intentions of the measure as well as increase the harvest cost of the industry. Another possibility which is partly in response to the quota and the highly migratory nature of Spanish mackerels is for northern Gulf mackerel fishermen to increase their harvest capacity or intensify their harvest effort. This situation could possibly lead to overcapacity in the mackerel fishery.

Rejected Alternative:

No change: Fishing year for Gulf groups king and Spanish mackerel is July 1 through June 30 and for Atlantic group king and Spanish mackerel is April 1 through March 31.

Discussion:

a. Ecological: In those years when spring water temperatures remain cool, fish may remain schooled and vulnerable to net fishing beyond March when winter fishing usually ends. In such years, the net fishing season can be extended when the fishing year reopens in April. In 1989, the Councils requested emergency action to limit catch per trip of Atlantic Spanish and king mackerel in April and May to prevent continued fishing on the same overwintering schools. This activity has occurred on the Atlantic Coast of Florida where the Atlantic migratory group occurs after April 1.

b. Socioeconomic: Basically, this alternative has no short-run impacts. In contrast to the proposed action, its effects would be in terms of not changing the fishing activities for the Gulf group of Spanish mackerel. The July fishing year for Gulf group was set to open a new quota when the fish are most widely distributed in order to provide equal initial access geographically to all fishermen. As described in the proposed action, it has been perceived that this equal initial access has not materialized for the Spanish mackerel fishery, and this perceived unequal access would be maintained under this alternative. At the same time

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:

a. Ecological: This action revises the definition for overfishing and provides a flexible program to prevent overfishing and to rebuild any overfished stocks. Flexibility is provided to enable scientific advisors to recommend appropriate target levels of SSBR as better data become available. The Councils retain the option of selecting a program from within ABC ranges for various periods of recovery as recommended by the stock assessment group and the SSC.

The Council's stock assessment group in its 1989 report stated in part: "Spawning stock biomass per recruit is recommended as the technical target for defining overfishing in order to prevent recruitment overfishing. Recent examination of several stocks that have collapsed (done primarily by NMFS, NEFC scientists and used for red drum and reef fish in the Gulf of Mexico) have shown that risk of collapse becomes a concern once the spawning stock biomass per recruit value drops below 40 percent of the value it would have in the absence of fishing. Below 20 percent, collapse is quite likely, and below 10 percent, chances for quick recovery, even if fishing is severely curtailed, may be jeopardized. The Panel concluded that the Councils should select the actual target level percentages in the overfishing definition (20 to 40 percent or some higher level), depending on the risk desired."

"Spawning stock biomass per recruit (SSBR) is recommended as the model for defining overfishing to prevent recruitment overfishing directly. The SSBR (reproductive potential) is determined by integrating or summing the multiple, for each age, of relative number of fish alive times the fraction mature times the weight of fish. Typically the models used to determine SSBR (which is a variant of yield per recruit) are the Beverton-Holt continuous model or the Ricker discrete model. The total contribution of a cohort to the spawning stock biomass over its lifetime is found by summing the cohort's contribution at each age, which is then scaled to a per recruit basis to derive a theoretical measure of SSBR. The SSBR measure can be used to evaluate alternative fishing mortality scenarios without knowing actual levels of recruitment or spawning stock. Maximum SSBR is obtained by setting fishing mortality to zero."

"There will still be 'uncertainty' that must be considered under spawning stock biomass per recruit criteria. Our knowledge of 'true' catch, natural mortality (M), fishing mortality (F), and thus spawning stock biomass per recruit, are inevitably imperfect. Any particular level of spawning stock biomass per recruit does not guarantee recruitment success or failure. Some stock may be able to sustain a low spawning stock biomass per recruit while the environment is favorable to larval survival, collapsing only when poorer conditions occur. Councils should still expect to evaluate the uncertainty surrounding the estimation of current spawning stock biomass per recruit."

B. No change. Overfishing. A stock of fish shall be considered overfished if the fishing mortality rate exceeds F_{msy} or $F_{0.1}$, or spawning biomass is low enough to affect recruitment. The $F_{0.1}$ fishing rate is the level of fishing mortality at which an increase in effort produces ten percent of the increase in yield that would occur in a lightly fished fishery for a comparable increase in effort. An $F_{0.1}$ yield per recruit management strategy better protects against growth overfishing and maintains a larger spawning population than does a F_{max} management strategy. If any stock or subgroup is overfished, the assessment group will estimate levels of ABC which would allow that stock to recover in one year, three years, five years, or other period as requested by the Councils.

Discussion: The current definition which uses three criteria has proved to be confusing and does not conform well to the new guidelines.

a. Ecological: Fishing mortality rate of $F_{0.1}$ is conservative and has been utilized to rebuild depleted stocks. When stocks recover, this definition may prevent the attainment of OY by limiting fishing to a lower level.

b. Socioeconomic: This definition, although again essentially biological in character, can be related to the level of fishing at which maximum economic yield (MEY) occurs. Theoretically, MEY occurs below MSY, assuming fixed price for fish. Also, F0.1 occurs generally below MSY. Although there is no reason for MEY to occur at the same fishing level as F0.1, it is generally believed that MEY is closer to F0.1 than to MSY. Thus, the choice of the definition of overfishing namely, as it relates to either MSY or F0.1, has repercussions on whether the allowed fishing level is near or far off the level that maximizes economic benefit.

ACTION 6: REVIEW OF ANNUAL REPORT OF STOCK ASSESSMENT PANEL

Section 12.6.1.1 D is revised as follows:

D. If changes are needed in MSYs, TACs, quotas, bag limits, or 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.

Discussion:

a. Ecological: No impact other than that cobia has been included in the annual assessment procedure.

The 1989 Stock Assessment Report stated: "As noted with eastern Gulf type fish, western Gulf fish are defined on biological bases and not geographical bases. Western Gulf type fish occur throughout the Gulf of Mexico, but predominately west of Florida. If western Gulf fish are considered to be a separate stock, then Mexican catches are the largest portion of the catches of this group by far. Mexican fisheries are known to be directed at younger fish more than other fisheries, but data to quantify this are not available. Hence, complete analyses, such as those above, could not be conducted under this hypothesis. The best information available about spawning stock levels of western Gulf fish is the CPUE index from Texas (Texas Parks and Wildlife), which indicates a decline in the early 1980's and stabilization in the late 1980's. This trend, coupled with the effect of Mexican catches, leads the Panel to conclude that if western Gulf fish are to be considered separately, then it is likely that the abundance of these fish has declined in the last decade and that controls on the U.S. rate of fishing should be maintained and controls on the Mexican rate of fishing be explored."

With the data available to them at this time, the Councils have been unable to develop appropriate management measures for two Gulf groups. They propose to continue a conservative approach appropriate for either one or two groups until additional data are available on Mexican catch, the nature and timing of mixing and annual rates of exchange (physical and reproductive) between these two groups. The Councils have requested that the assessment group prepare separate ABC ranges for the Gulf group using the Florida/Alabama border as an initial point of separation of the stock.

b. Socioeconomic: The socioeconomic impact cannot be evaluated until it can be determined what management measures and allowable catches would apply under the revised stock identification. There is an apparent misconception among some fishermen that the larger king mackerel that overwinter off Louisiana and spend warmer months off Texas are western group of fish when in fact they are a mixture of eastern and western fish. A change in the management regime for two stocks would not suddenly allow unrestricted fishing on these large fish and may require more restrictive quotas to adjust for high Mexican catches.

Rejected Alternative for Action 7

Separate the Gulf king mackerel group into eastern and western groups and provide separate TACs for them in this amendment.

Discussion:

a. Ecological: A geographic or seasonal division would be established on the basis of distribution of fish with different allele types and on findings from tagging studies. Separate TACs and commercial allocations would be established, and the Mexican catch of approximately 6 or 7M would be considered in the calculation. Unfortunately, recent data on Mexican catches are not available.

b. Socioeconomic: This option tends to complicate management procedures, but it offers possibilities of adopting management measures appropriate to

As with the status quo, closure of the fishery can happen under the proposal. The demand for charter fishing trips can be affected by this closure. The only way whereby this change in bag limit can alter (relative to the status quo) the demand for charter fishing trips via a closure of the fishery is for the timing of the closure to change. In principle, the daily limit has the capability to keep the fishery open longer than the trip limit, mainly because of the possibility of multiple trips in a day which can result in more fish being taken. Thus, it is reasonable to expect that closure of the fishery would not be hastened by the change in bag limits from a per trip to a daily basis.

A bag limit on a daily basis, in principle, places anglers on equal footing with respect to allowable catch while the same bag limit on a trip basis tends to favor those making multiple trips. It is worth noting that this concept of equality looks only on the catch and overlooks the cost side of the issue. it can be safely assumed that anglers making multiple trips find it more beneficial to do so than those not making the same number of trips. On the margin, the value of an additional fishing trip appears to be the same for all anglers even if they differ in number of trips made. Redefining bag limits from trip to daily basis tends to render these marginal values unequal.

Rejected Alternatives for Action 8:

A. No change, bag limits would be set for anglers per trip.

Discussion:

a. Ecological: The extent of multiple trips per day by anglers is not known, but the total impact on the fishery is believed to be small. Trip bag limits were originally established because data available for bag limit catch were by trip.

b. Socioeconomic: Essentially no impacts can be expected from this option. In contrast to the proposed measure, this option would benefit those making multiple trips in terms of allowable number of catch per day. In terms, however, of marginal valuation of fishing trips, this option appears to equalize these values among anglers making a different number of trips.

B. The recreational allocations for Atlantic and Gulf migratory groups of king and Spanish mackerels be subdivided into six-month quotas, one half for the first six months, and the remainder for the second. The bag limit is to revert to zero when its quota is taken.

Discussion:

a. Ecological: No change.

b. Socioeconomic: If recreational bag limits are set too high for migratory fish, those with first access will have disproportionate opportunity to the quota. High bag limits could result in two closures in a fishing year. If, however, bag limits were set correctly or low, no closures would occur. Example: a recreational allocation of 5 million pounds for Gulf group

was exceeded and degree that the bag limit for the subsequent season is adjusted for overfishing (the 1987-1988 catch of Atlantic Spanish mackerel was 216 percent over the quota).

Could result in unnecessarily low bag limits if stock assessment showed much improved stock and TAC were to be substantially increased.

b. Socioeconomic: Continuation of fishery would ameliorate the short-term adverse impact associated with zero bag limits, but would delay achieving the greater long-term benefit associated with restoration of the stock. Reduced or zero bag limit in years after an overrun could greatly impact the recreational fishery.

E. Bag limit would revert to 50 percent of current level (but not less than one fish) for the remainder of the year when harvest is projected to reach 67 percent of the quota.

Discussion:

a. Ecological: Assuming fish harvest at a bag limit is equally distributed over time, at the point two-thirds of the quota is harvested reduction of the bag limit by one-half should result in harvest of the additional one-third of the quota. Depending on the distribution of fish harvest and the initial bag limit, the impact could be slightly beneficial or more likely adversely affect restoration of the stock when harvest continues beyond TAC.

b. Socioeconomic: This action would reduce the short-term adverse impact of a complete closure but may delay attaining the longer-term benefit. Persons with access to the migratory fish in the first part of the fishing year could have higher bag limits.

F. Set reduced bag limits in EEZ off states where no or higher bag limits exist in state waters. Example: if a bag limit is set at 4 fish, it could be set at 2 fish in EEZ off states with higher bag limits.

Discussion:

a. Ecological: Uncontrolled or liberal fishing regulations in some areas contribute to the probability that TAC will be exceeded; i.e., the 1987-1988 catch of Atlantic Spanish mackerel was 216 percent over quota.

b. Socioeconomic: This would provide incentive for states to adopt coordinated management regimes. Presently, fishermen in cooperative states are "penalized" while those in unregulated states fish unchecked and contribute to early reversion to a zero bag limit.

G. Restrict recreational fishing for mackerels to weekend and federal holidays. The bag limit would remain through the year.

Discussion:

a. Ecological: The ecological impact of this change is expected to be slight because total allowable catch is not affected. A reduction in the ability to sell a recreational catch in some states may have the effect of stimulating release of fish instead of landing for sale any unwanted bag limit catch. The sale of mackerel taken from the EEZ after the commercial quota is filled would continue to be prohibited.

b. Socioeconomic: Amendment 1, implemented in 1985, included a recommendation by the Councils that each state give consideration to requiring all persons who sell fish to have a commercial license of significant enough value to differentiate between commercial and recreational fishermen (Section 15.4). Many states have provided for commercial and in some instances recreational licenses to separate user groups. The permissive language currently in the FMP which allows sale of EEZ bag limit mackerel may supersede a state's intent to separate user groups.

Individual Gulf states have requirements for the sale of fish, including king and Spanish mackerel, that generally involve possession of a commercial permit. Texas and Louisiana laws also prohibit the sale of fish taken by recreational fishermen. A recently enacted 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. A recreational license applies to most coastal anglers in Florida.

The sale of recreationally caught king mackerel by Gulf fishermen is estimated by NMFS port agents and state fishery extension agents to be relatively low. Bag limit sales of king mackerel in the Florida Keys from charter boats are estimated to have been about 100,000 pounds (45,359 kg) valued at $105,000 in 1987-1988 (NMFS/SEFC). A representative of the Key West Charter Boat Association advised the Councils at their April, 1988 joint meeting that 60 to 65 percent of the charter catch in that area was left with the crews who are dependent on the sale of these fish. Florida charter boats which qualify for the state's restricted species permit may continue to sell bag limit catches. Neither will sale of mackerel by these vessels be affected by the measure when they fish under the commercial quota.

Alabama and Mississippi do not have separate recreational and commercial licenses; however, fishermen must possess a license for sale. A transfer of two percent of the recreational allocation of Gulf king mackerel reduces the impact of double counting.

In the management area of Atlantic group king mackerel, Georgia, South Carolina, Maryland, Delaware, and New York require licenses for the sale of fish taken by hook-and-line. North Carolina also requires such license but provides an exemption for catches less than 500 pounds (227 kg). Florida has separate recreational fishing licenses and a marine products license requiring that 25 percent of one's income or $5,000 be from commercial fishing if one fishes for restricted species which include mackerels. Virginia and New Jersey have no license requirements for sale. In North Carolina, it has been

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 charter boats 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 issued for an April through March permit year and are available at any time and are valid through the following March. Permits valid for the following permit year become available in February.

Permits are transferable on 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. Charter boats 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 $24.

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.

Discussion:

The only change is stipulating that for a vessel owned by a corporation, an individual (shareholder or officer of the corporation or the vessel operator) must be able to show that ten percent of his earned income the previous year was derived from commercial fishing.

a. Ecological: No change.

b. Socioeconomic: The permit requirement provides a means to separate users for fishing under commercial quotas or bag limits. This change is intended to reduce the practice of incorporating recreational vessels for the purpose of becoming eligible for a commercial permit and allowing anglers to exceed the bag limit. If the catch is sold, it contributes toward filling the commercial quota. If the catch exceeds the bag limit and is not sold, it constitutes an uncounted catch that risks exceeding the TAC. The provision that fees for issuance of permits be charged on permittees mitigates the budgetary constraints on the administration of permit issuance. Although the fee, amounting to about $24 per permittee or about $56,000 using current number of permittees, is minimal relative to the value of the resource, this consideration alleviates part of the administrative burden.

ACTION 11: PERMISSIBLE FISHING GEAR

A new Section 12.6.8.1.1 is added as follows:

Section 12.6.8.1.1 Gulf group king mackerel may be taken only with the following gear: hook-and-line and run-around gill nets.

Discussion:

a. Ecological: This stock of fish has been severely overfished, and recovery has been very slow and is expected to take a decade. Introduction of new and non-traditional fishing gear on a depleted stock is not prudent, as high catch gear could cause the quotas to be exceeded in a brief period. This action has been limited to Gulf king mackerel because of the severe condition of its spawning stock biomass.

b. Socioeconomic: The use of drift gill nets and purse seines has been prohibited on this migratory group as non-traditional gear. Current gear used in the fishery are hook-and-line and run-around gill nets. There is no anticipated adverse impact on current users. Introduction of new gear could reduce the effective allocation to the current users who are already on reduced quotas. Of course, the effective allocation to the current users would also be reduced if more fishermen enter the fishery using the nonrestricted gear types. As only traditional gear types are permitted, this measure impedes technological improvement that could render the harvest sector more efficient.

Rejected Alternatives:

A. No change - only specified fishing gear is prohibited, i.e., Spanish mackerel gill nets smaller than 3 1/2 inch (8.9 cm) stretched mesh, king mackerel gill nets smaller than 4 3/4 inch (12 cm) stretched mesh and purse seines on certain migratory groups.

Discussion:

a. Ecological: Gear and fishing methods which may be destructive to the habitat (dynamite) or which may result in wasteful bycatch (toxic chemicals) could be used. Specification of prohibited gear cannot anticipate all developments in gear technology.

b. Socioeconomic: This option has no short-run effects. Over the long-run, this approach to management of gear usage allows the development and use of more efficient gear. Gear development can occur under permit. Under this condition, the possibility of improving efficiency in the industry is open. But as long as current users of allowed gear do not adopt the new ones, the use of a more efficient gear may be viewed as socially unacceptable, just as drift gill nets and purse seines.

B. Prohibit the taking of coastal pelagics with all except the following gear: hook-and-line and run-around gill nets except that run-around gill nets are prohibited on Atlantic group king mackerel.

determinable as to whether the proposed measure can lead to landings that approximate MSY or MEY, but relative to the status quo it can be expected to result in long-run net gains to society if actual MSY is as estimated.

Rejected Alternative:

A. No change. OY for cobia is set at 1.0 M, the best but crude estimate of MSY based on landing statistics. The only management measure is a 33-inch fork length minimum size limit which has also been adopted by all states except Georgia and North Carolina. A 33-inch (84 cm) cobia weighs about 14 pounds (6.4 kg).

Discussion:

a. Ecological: Recent landings of cobia exceed OY by 143-279 percent since 1981 (Table 6). The 1990 stock assessment should include a reevaluation of MSY.

b. Socioeconomic: This option has no short-run effects. From the analysis of the proposed measure, maintaining the status quo would mean foregoing some net gains equivalent, for example, to what can be gained under the proposed option.

ACTION 13: KING MACKEREL SIZE LIMIT

A new Section 12.6.7.2.1 is added as follows:

12.6.7.2.1 King Mackerel

Minimum size limit is 12-inch (30.5 cm) fork or 14-inch (35.6 cm) total length for king mackerel.

Discussion:

a. Ecological: A 12-inch (30.5 cm) king mackerel is about 6 months old. Few are taken in a hook-and-line fishery. However, the regulation would facilitate enforcement of the same size limit for Spanish mackerel.

Undersize Spanish mackerel are taken in a directed fishery and some fishermen may confuse the species because of their similar appearance. The same size limit for both species would benefit the Spanish mackerel stocks. Release mortality for small fish of both species is believed to be low.

b. Socioeconomic: Few king mackerel under 12 inches (30.5 cm) fork length are currently taken in a directed commercial fishery (some trawl bycatch is taken and discarded). The prevalence of recreational catches of king mackerel under 12 inches (30.5 cm) fork length is not readily determinable. It is possible that a size limit in addition to a bag limit could have some impact on the recreational sector. The negative impact of this measure on the commercial and recreational sectors may be minimal. Magnitudes of losses and benefits have to be generated to determine precisely these negative short-run impacts on both sectors.

Discussion:

a. Ecological: No change.

b. Socioeconomic: The plan provides that in the event of user or gear conflicts, the Secretary, after consultation with the Councils, may take specified action to separate the users to resolve the conflict. However, "conflict" is not defined and the intent of the Councils has been unclear. When the Councils proposed to use this procedure to prohibit the introduction of drift gill nets, the question arose whether competition constituted conflict. This definition would provide guidelines for Secretarial action.

Rejected Alternative:

No Change - Conflict to remain undefined.

Discussion:

a. Ecological: No effect.

b. Socioeconomic: The proposed definition could prevent the introduction of new, more efficient gear in the fishery. The Secretary will have no guidance on Councils' intent.

IV. Habitat and Vessel Safety

A Description of Habitat for Coastal Pelagics and a discussion of vessel safety issues were included in Amendment 3 and remain current for this amendment.

V. Coastal Zone Consistency

Copies of the proposed action were provided to the Coastal Zone Management Offices of the Gulf, South Atlantic, and Mid-Atlantic states. The action as proposed will be consistent with plans of the coastal states.

VI. Environmental Consequences

Physical Environment - The proposed actions in this amendment will have no adverse impact on the physical environment.

Fishery Resource - The proposed actions are intended to rebuild overfished stocks and to prevent healthy stocks from becoming overfished.

Human Environment - Fishermen would be affected by allocations, bag limits, daily limits, permits, and other restrictions intended to conserve the stocks of fish and distribute the allowable catch fairly among the users. Long term benefits are expected to exceed short term loss.

Effect on Endangered Species and Marine Mammals - The proposed amendment will have no effect on endangered species and marine mammals. A Section 7 consultation was held for this FMP with a "no jeopardy opinion" being rendered. The proposed actions do not alter provisions of the FMP that would affect these animals.

plans. The provision on permissible fishing gear has no short-run impacts as the permitted gear are the ones that are currently allowed. This provision though, may have negative impacts on the future efficiency of the harvest sector as innovations will be discouraged. The cobia bag limit is expected to have minimal negative short-run effects, but it offers potential for protecting the fish which could generate more future benefits for both recreational and commercial sectors. The mackerel size limit has a negative short-run effect that cannot be measured with current information. The long-run effect is expected to be beneficial to major user groups. It is not precisely known as to what the impacts are of the proposed definition of conflict, except that it appears to simplify the management procedures once a "conflict" has been determined.

By and large, the measures proposed appear to be either more beneficial or less costly than their corresponding rejected measures. The extension, however, of the management area to the Mid-Atlantic Council's area of jurisdiction may pose certain problems as it is difficult to project the extent of stock protection that may be generated by the measure especially that additional enforcement costs may have to be incurred.

Mitigating Measures Related to the Proposed Action - No significant environmental impacts are expected; therefore, no mitigating actions are proposed.

Unavoidable Adverse Effects - Allocation of limited total allowable catch will have adverse impact on some users. Distribution of allowable catch, however, is intended to be fair and equitable, based on historic and current use.

Relation Between Local, Short-Term Users of the Resource and Enhancement of Long-Term Productivity - The Councils have concluded that short-term reduction of catch to all users can restore the fishery resource to the long-term benefit of all users.

Irreversible or Irretrievable Commitment of Resources - None.

Enforcement Costs - Extension of the management area to the jurisdiction of the Mid-Atlantic Fishery Management Council is estimated to cost about $132,000 per year.

Finding of No Significant Environmental Impact

Having reviewed the environmental assessment and available information relating to the proposed actions, I have determined that the proposed actions will not significantly affect the human environment and that preparation of an environmental impact statement is not required.

Assistant Administrator for Fisheries _____ Date _____

LIST OF PREPARERS

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Table 1. King Mackerel Gulf Stock Catch Summary for weight and numbers (July-June fishing year). The listings for East Gulf 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 US Gulf of Mexico coast.[1]

Fishing Year	East Gulf			West Gulf			US Gulf			Mexico	Gulf		
	Com	Rec	Total	Com	Rec	Total	Com	Rec	Total	Com	Com	Rec	Total
a) thousands of pounds[3]													
1979	4509	2118	6627	0	2208	2208	4509	4326	8836	-	4509	4326	8836
1980	6154	8589	14,743	0	5120	5120	6154	13,709	19,863	-	6154	13,709	19,863
1981	5997	3507	9503	0	4449	4449	5997	7956	13,952	-	5997	7956	13,952
1982	3811	2393	6205	946	1344	2291	4758	3738	8495	-	4758	3738	8495
1983	2589	1335	3923	394	817	1210	2982	2151	5134	-	2982	2151	5134
1984	2497	2847	5344	682	936	1618	3179	3783	6962	2831	6010	3783	9793
1985	2846	1676	4523	648	892	1541	3495	2569	6063	5301	8796	2569	11,364
1986	813	2249	3062	346	797	1143	1159	3046	4205	7425	8584	3046	11,630
1987	651	1440	2091	218	527	745	869	1956	2826	6319	7188	1956	9145
1988[2]	101	2054	2190	267	728	1030	369	2782	3152	1174	1543	2782	4325
b) thousands of fish													
1979	629	378	1007	0	221	221	629	599	1228	-	629	599	1228
1980	890	1243	2133	0	435	435	890	1678	2568	-	890	1678	2568
1981	705	464	1169	0	407	407	705	872	1577	-	705	873	1577
1982	434	374	807	48	103	151	482	477	958	-	482	477	958
1983	363	220	583	33	71	104	396	292	688	-	396	292	688
1984	278	339	617	51	85	136	328	424	753	485	814	424	1238
1985	319	194	514	47	67	114	368	261	628	710	1078	261	1338
1986	89	314	403	21	68	89	110	382	492	1124	1234	382	1615
1987	64	194	258	13	47	60	78	241	319	1179	1257	241	1498
1988[2]	6	216	222	12	57	69	17	273	290	220	237	273	510

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

[2] Fishing year 1988 data through October 1988 only, and should be considered preliminary.

[3] 1 lb. = 0.45 kg

Source: 1989 Report of the Mackerel Stock Assessment Panel (NMFS - SEFC)

Table 3. Spanish Mackerel Gulf Stock Catch Summary for weight in thousands of pounds and numbers in thousands of fish (July-June fishing year).

Fishing Year	US Gulf Com	US Gulf Rec	Total	Mexico Com	Gulf Com	Gulf Rec	Total
a) Thousands of pounds [3]							
1983[1]	1694	383	2077	-	1694	383	2077
1984	3559	1369	4928	-	3559	1369	4928
1985	3301	2597	5898	10354	13654	2597	16252
1986	2283	4474	6756	10519	12802	4474	17275
1987	2328	2875	5203	11295	13623	2875	16499
1988[2]	33	697	730	2953	2986	697	3683
b) Thousands of fish							
1983[1]	1412	353	1765	-	1412	353	1765
1984	2193	1326	3518	-	2193	1326	3518
1985	1766	2274	4040	9059	10825	2274	13099
1986	1464	3881	5345	6383	7848	3881	11728
1987	1295	1922	3217	8606	9901	1922	11823
1988[2]	18	422	440	2970	2987	422	3409

1 Fishing year 1983 includes only January - June 1984.
2 Fishing year 1988 data through October 1988 only, and should be considered preliminary.
3 1 lb. = 0.45 kg

Source: 1989 Report of the Mackerel Stock Assessment Panel (NMFS - SEFC)

Table 5

HISTORIC ABC's, TAC's AND CATCHES (millions of pounds)*

FISHING YEAR	KING MACKEREL ATLANTIC	KING MACKEREL GULF	SPANISH MACKEREL ATLANTIC	SPANISH MACKEREL GULF
1985/86				
ABC	6.9	10.7	27	27
	15.4	14.9	27	27
TAC	11.8	14.2	27	27
CATCH	7.4	6.1	10.8	10.8
1986/87				
ABC	6.9	1.2	27	27
	15.4	2.9	27	27
TAC	9.68	2.9	27	27
CATCH	8	4.2	10.1	10.1
1987/88				
ABC	6.9	0.6	1.9	1.9
	15.4	2.7	3.1	4
TAC	9.68	2.2	3.1	2.5
CATCH	7.2	2.8	4.9	5.2
1988/89				
ABC	5.5	0.5	1.3	1.9
	10.7	4.3	5.5	7.1
TAC	7	3.4	4	5
CATCH	7.7	4.5	5.8	3.4
1989/90				
ABC	6.9	2.7	4.1	4.9
	15.4	5.8	7.4	6.5
TAC	9.0	4.25	6.0	5.25

Spanish Mackerel were separated into two groups for the 1987/88 fishing year.

* 1 lb. = 0.45 kg

Source: South Atlantic Fishery Management Council and SEFC/NMFS

TABLE 7 Projected effect of bag limits on catch of cobia, and the percent of total successful trips impacted assuming no change in effort and trips exceeding bag limit reduce their catch to the bag limit.

BAG LIMIT (NUMBER/PERSON)	IMPACTED TRIPS (%)	REDUCTION IN CATCH (%)
1	8	23.2
2	4	12.3
3	2	8.1
4	2	5.5
5	1	3.5
6	1	2.2
7	1	1.3
8	1	0.6
9	<1	0.3
10	<1	0.3
11	<1	0.2
12	<1	0.2
13	<1	0.1
14	<1	0.1
15	0	0.0
20	0	0.0

Source: SEFC- NMFS

Table 9

Summary of Impacts of Rejected Actions

Management Measure	Short-run Effects	Long-run Effects
1. Extension of management area	No impact	Negative or positive
2. Fishing year	No impact	Positive or negative
3. Overfishing		
Option A	Uncertain	Uncertain
Option B	Positive	Positive
4. Review of SAP Report	Negative	Negative
5. Separation of Gulf stocks	Positive or negative	Positive or negative
6. Bag limits		
Option A	No impact	Positive or negative
Option B	Negative	Negative
Option C	Positive or negative	Positive or negative
Option D	Positive	Negative
Option E	Positive	Negative
Option F	Positive or negative	Positive or negative
Option G	Negative	Negative
Option H	Negative	Negative
Option I	Positive or negative	Positive or negative
7. Sale of mackerel	No impact	Positive or negative
8. Permits	No impact	Negative
9. Fishing gear		
Option A	No impact	Positive or negative
Option B	Negative	Negative
10. Cobia bag limit	No impact	Negative
11. Mackerel size limit	No impact	Negative
12. Definition of conflict	No impact	Positive or negative