

FRAMEWORK ADJUSTMENT
TO THE
REEF FISH FISHERY MANAGEMENT PLAN
FOR THE REEF FISH RESOURCES OF
THE GULF OF MEXICO

*(Includes Environmental Assessment,
and Regulatory Impact Review)*

NOVEMBER 1991

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Financial assistance for producing this amendment was provided by grant funds from the National Marine Fisheries Service, National Oceanic and Atmospheric Administration, under Public Law 94-265, the Magnuson Fishery Conservation and Management Act.

1. HISTORY OF MANAGEMENT

The Reef Fish Fishery Management Plan was implemented in November 1984. The implementing regulations, designed to rebuild declining reef fish stocks, included: (1) prohibitions on the use of fish traps, roller trawls, and powerhead-equipped spear guns within an inshore stressed area; (2) a minimum size limit of 13 inches total length for red snapper with the exceptions that for-hire boats were exempted until 1987 and each angler could keep 5 undersize fish; and, (3) data reporting requirements.

The National Marine Fisheries Service (NMFS) has collected annual commercial landings data since the early 1950s, recreational harvest data since 1979, and in 1984 initiated a dockside interview program to collect more detailed data on commercial harvest by species. Consequently, just recently has quantitative assessment of the population levels of major reef fish species been possible. The first red snapper assessment in 1988 indicated that red snapper was significantly overfished and that reductions in fishing mortality rates of as much as 60 to 70 percent were necessary to rebuild red snapper to a recommended 20 percent spawning stock potential ratio (SPR). The 1988 assessment also identified shrimp trawl bycatch as a significant source of mortality.

The Council, through Amendment 1 to the Reef Fish Fishery Management Plan¹, implemented in 1990 a 5 fish recreational bag limit and a 11.0 million pound commercial quota¹ for groupers that together were to reduce fishing mortality by about 10 percent and begin rebuilding the population. The commercial quota was subdivided into a 9.2 million pound shallow-water quota¹ and a 1.8 million pound deep-water quota¹. The Council also implemented a framework procedure to allow for annual management changes.

Amendment 2, implemented in 1990, prohibited the harvest of jewfish to provide complete protection for the species in waters off Florida because the population abundance throughout its range is greatly depressed.

Amendment 3, implemented in July, 1991 provided additional flexibility in the annual framework procedure by allowing the target date for rebuilding an overfished stock to be changed depending on changes in scientific advice. Also, the amendment transferred speckled hind from the shallow-water grouper quota category to the deep-water grouper category and established a new red snapper target year of 2007 for achieving the 20 percent spawning potential goal established in Amendment 1.

¹These values have been subsequently modified to correct for revisions adopted in the gutted to whole weight ratio. Historically the conversion ratio used was 1.18, subsequently the ratio has been corrected and 1.05 is used. This results in these values being 9.8, 8.2, and 1.6 million pounds, respectively, for total, shallow-water and deep-water grouper quotas (e.g., 11.0 x 1.05 = 9.8).

1.18

There is no impact on the commercial fishery from the revision as fish landed have always been recorded in gutted weight and that data is transformed to whole weight for NMFS records.

Amendment 4, submitted in November, 1991 for implementation, proposes to modify the framework procedure for specifying TAC to change the timing for completion of stock assessments and to provide the Council be notified within 15 days of measures specified under the procedure that are unacceptable to the Regional Director (RD) of NMFS. It also proposes that scamp landed be counted in the shallow-water grouper quota until that quota is reached and thereafter in the deep-water grouper quota. It also proposes a three-year moratorium on the issuance of commercial vessel permits, while the Council develops a more comprehensive effort limitation system.

2. MANAGEMENT OBJECTIVE AND OPTIMUM YIELD

The primary objective and definition of Optimum Yield for the Reef Fish Fishery Management Plan is to stabilize long term population levels of all reef fish species by establishing a certain survival rate of biomass into the stock of spawning age to achieve at least 20 percent spawning potential ratio.

Definition of Overfishing

The following is the definition of overfishing contained in the Reef Fish Fishery Management Plan (FMP).

1. A reef fish stock or stock complex is overfished when it is below the level of 20 percent SPR.
2. When a reef fish stock or stock complex is overfished, overfishing is defined as harvesting at a rate that is not consistent with a program that has been established to rebuild the stock or stock complex to the 20 percent SPR level.
3. When a reef fish stock or stock complex is not overfished, overfishing is defined as a harvesting rate that if continued would lead to a state of the stock or stock complex that would not at least allow a harvest of optimum yield on a continuing basis (SPR).

3. PROBLEM REQUIRING FRAMEWORK ADJUSTMENT

The FMP, as amended, provides that each year the Council may specify changes to the TAC level and management measures regulating TAC for the next year for the stock or stock complex for which a stock assessment has been completed and a range of acceptable biological catch (ABC) has been identified. The Council proposes that the commercial shallow-water grouper quota for 1992 be set at 9.8 million pounds, an increase of 1.6 million pounds above the 1991 quota of 8.2 million pounds (adjusted whole weights - see footnote 1). The Council reviewed stock assessment for red grouper and vermilion snapper and information on greater amberjack but recommended no change in measures regulating vermilion snapper or greater amberjack.

4. ENVIRONMENTAL ASSESSMENT

Background

The Southeast Fishery Center (SEFC) of NMFS prepared a stock assessment for the red grouper fishery (Goodyear and Schirripa, 1991) and a biological profile for vermilion snapper with description of the fishery (Goodyear and Schirripa, 1991b), as well as updated information on the amberjack resources (Cummings - Parrack and Phares, 1991). The Council's Reef Fish Stock Assessment Panel (Panel) reviewed the stock assessment information and developed a report to the Council (Muller, al., 1991). The report presented the panel's conclusions on the stock assessment information and their recommendations on ABC (to the extent possible) on the stocks and on research and data collection requirements for the fisheries. The panel made no recommendations on greater amberjack due to the preliminary nature of the information available. The information for vermilion snapper precluded assessment of both the spawning potential ratio (SPR), fishing mortality rate, or any estimate of standing stock size due to two sets of very divergent growth equations for vermilion snapper. The panel expressed their concern over escalating commercial landings in recent years and suggested the Council consider capping fishery harvest at the 1990 level of 2.9 million pounds (MP).

For red grouper the panel recommended the ABC range be set between 8.2 and 9.2 MP for a minimum size at entry of 20 inches TL and release mortalities of 50 and 33 percent, respectively. These levels, which include both commercial and recreational harvest components, result in SPR levels of 42.6 and 34.6 percent, respectively (Table 1), which are well above the Council's goal of maintaining at least a 20 percent SPR level for each stock. Table 2 removes the recreational component (28.5 percent) and expresses the ranges in terms adjusted whole weight (see footnote 1) for the shallow-water grouper complex commercial quota of which red grouper constitute 69 percent by weight. In terms of shallow-water grouper commercial quotas the ABC range, at a minimum size of 20 inches would be 8.9 to 10.0 MP with the same SPR levels cited above. The 1991 quota is 8.8 MP as adjusted by the July, 1991 regulatory amendment to the FMP. The stock assessment information and panel report was reviewed by the Reef Fish Socioeconomic Assessment Panel (SEP), the Scientific and Statistical Committee (SSC) and the Reef Fish Advisory Panel (AP). Each of these advisory groups accepted that panel report and recommendations related to red grouper, except the SEP report (Riechers, et. al, 1991) indicated that for red grouper alone there was no conclusive evidence that a quota, size limit, or bag limit were needed. These advisory groups recommended retaining the regulatory status quo for vermilion snapper and amberjack until more definitive stock assessment information becomes available.

Description of and Need for Proposed Action

The Council proposes to increase the shallow-water grouper commercial quota for 1992 by 1.6 MP (i.e., from the 1991 base level of 8.2 MP to 9.8 MP adjusted whole weights - see footnote 1). The Council is proposing this action because stock assessment information indicates that harvest at this level will result in a SPR level of about 36 percent, well above the Council's goal of maintaining a SPR of at least 20 percent. Further, at the 8.2 MP quota level the fishery was closed for 1-1/3 months in 1990, creating adverse economic impacts on the industry and market. The additional 1.6 MP should prevent a closure during the fishing year, allowing a continuous supply of filets to the market.

The Council considered a similar increase in allocation to the recreational sector but took no action for the increase. This was because red grouper make up only 27 percent of the recreational landings (1990 data) as

opposed to 69 percent of the commercial landings, i.e., other shallow-water groupers make up 73 percent of the recreational landings. In addition, no stock assessment information to determine the status of other shallow-water grouper was available. Gag grouper in 1990 made up 43 percent of the Gulf recreational landings, whereas commercial landings of this species (1986-1990) averaged 0.66 MP (or about 8 percent). Since the Council had previously acted through Amendment 1 to allocate grouper between commercial and recreational fishermen via quota and bag limits it did not address the SEP recommendation that quotas and bag limits be eliminated.

The Council proposed no action for vermilion snapper or greater amberjack other than to request that NMFS, (1) closely monitor harvest levels for vermilion snapper and keep the Council apprised and, (2) attempt to resolve the discrepancies between the various growth equations for that species. Regulations implemented by Amendment 1 for greater amberjack were controlling expansion of that fishery.

Alternatives to the Proposed Action

Alternatives to the action proposed by the Council include status quo - no change to the commercial shallow-water grouper quota, setting the quota at some other level within the ABC range and revising the bag limit for grouper. The status quo for the commercial quota was rejected because the assessments indicated that the harvest levels could be safely increased while maintaining a SPR level well above the 20 percent level (i.e., on the order of 30 to 40 percent SPR - Table 2). Further, as indicated in the RIR of the regulatory amendment to the FMP of July, 1991 the status quo resulted in forgone exvessel revenues of \$0.99 million when the fishery closed in 1990.

The proposed action is to set the commercial shallow-water grouper quota at 9.8 MP adjusted whole weight¹. This is near the upper limit of the ABC range (i.e., 10.0 MP - Table 2) and the level could have been set at other levels between 8.9 and 10.0 MP. However, the SPR for the proposed action is about 36 percent and the quota level assures the fishery will not be closed. (The fishery is not anticipated to be closed in 1991 under an adjusted quota of 8.8 MP).

Some members of the Council also suggested alterations of fishing zones for grouper. This action was deferred to May, 1992, in order to obtain information to assess biological and economic impacts of and public comment on the proposed changes. Change to the size limit was similarly proposed by some members, but not approved by the Council because age at maturity exceeds the minimum proposed (18 inches) size. The recreational bag limit for grouper was not changed for reasons cited in the previous section.

Environmental Consequences

Physical Environment

The proposed action will have no impact on the physical environment.

Fishery Resource

The proposed action will allow a harvest of 9.8 MP, which is greater than the harvest anticipated for 1992. The harvest level will not adversely affect the shallow-water grouper complex since SPR at that harvest level, if taken, is about 36 percent. The increase in shallow-water quota will reduce fishing pressure on the deep-water grouper complex, for which the biological and assessment information is unavailable or poor, but which is more easily over-exploited.

Human Environment

The addition of 1.0 MP to the 1991 shallow-water grouper quota (as adjusted by the regulatory amendment of July, 1991 to 8.8 MP) will result in additional revenue to the industry and assure the fishery does not close, disrupting market and income flow as was the case in 1990.

Effect on Endangered Species and Marine Mammals

Although the proposed action will essentially return the commercial fishery to the pre-Amendment 1 condition, it is anticipated to have no impact on endangered and threatened species or marine mammals.

Effect on Wetlands

The proposed action will have no effect on flood plains, wetlands, or rivers.

Mitigating Measures Related to the Proposed Action

No environmental impacts are expected with the proposed action, therefore no mitigating actions are proposed.

Unavoidable Adverse Affects

There are no unavoidable adverse affects resulting from this proposed action.

Irreversible and irretrievable commitments of resources

There are no irreversible commitments of resources caused by implementation of this action.

Finding of No Significant Environmental Impact

The proposed amendment is not a major action having significant impact on the quality of the marine or human environment of the Gulf of Mexico. The proposed action is a management adjustment based on the framework procedure for rebuilding overfished reef fish stocks as set forth in Amendment 1 to the Reef Fish FMP. The proposed action should not result in impacts significantly different in context or intensity from those described in the environmental impact statement and environmental assessment published with the regulations implementing the FMP and Amendment 1.

Having reviewed the environmental assessment and available information relative to the proposed actions, I have determined that there will be no significant environmental impact resulting from the proposed actions. Accordingly, the preparation of a formal environmental impact statement on these issues is not required for this amendment by Section 102(2)(c) of the National Environmental Policy Act or its implementing regulations.

Approved:

Assistant Administrator for Fisheries

Date

RESPONSIBLE AGENCY:

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5. REGULATORY IMPACT REVIEW

Introduction

The RIR serves as the basis for determining whether any proposed regulations are major under criteria provided in Executive Order 12291 (E.O. 12291) 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 Reef Fish Fishery Management Plan (FMP) would have on the commercial grouper fishery.

Problem in the Fishery

Amendment 1 of the Reef Fish FMP imposed restrictions on the harvest of groupers in the EEZ. One of these restrictions is a commercial harvest quota, which was set at 11 million pounds (MP) for the 1990 fishing season. This quota was subdivided into 9.2 MP for shallow-water groupers and 1.8 MP for deep-water groupers. Based on available information, it was determined that the quota for shallow-water groupers would be fished before the year's end (Report of the Gulf Reef Fish Review Panel, 1990), and the fishery (for shallow-water groupers) was subsequently closed on November 8, 1990. The 1990 deep-water grouper quota was not filled (as correctly projected), and the fishery remained open for the entire year. More recent records of actual reported landings for 1990 showed that up to the time of the closure, the total landings for shallow-water groupers amounted to 8.5 MP, which is about 0.7 MP less than the quota (Status Report on Gulf Reef Fish 1991 Quotas, 1991). The 1991 quotas for both shallow-water and deep-water groupers are the same as the respective 1990 quotas.

The specific problem addressed in this framework adjustment pertains to the treatment of the shortfall in the 1990 quota for shallow-water groupers. The Council decided to add the amount of the 1990 quota underrun of 0.7 MP to the 1991 quota for shallow-water groupers, provided the 1991 stock assessment for grouper supports such action.

Management Measures

Preferred Alternative: Set the 1991 quota for shallow-water groupers at 9.9 MP, which reflects the addition of 0.7 MP to the "basic" quota of 9.2 MP.

More definite and final determination of the impact of this action on the shallow-water grouper stock is delayed until the stock assessment of red groupers is available in September, 1991. For purposes of the current analysis, increasing the 1991 quota for shallow-water groupers is deemed to not impede the rebuilding of the shallow-water grouper stock.

The quota underrun is the result of the premature closure of the fishery, and the 0.7 MP underrun would likely have been taken by the commercial fishing sector had the fishery been left open for the entire year. In the period 1986-1989 when the fishery was relatively unregulated, the Gulfwide shallow-water grouper landings for November and December averaged at approximately 1.5 MP. Shallow-water landings for these two months showed no perceptible trend, but fluctuated from 1.3 MP in 1988 to 1.8 MP in 1986. Landings

in 1989 for these two months were 1.6 MP. In all years, except 1988, total annual landings exceeded 9.2 MP. The recorded landings in 1988 were approximately 7.8 MP, which is lower than the 1990 landings despite the fishery being open for the entire year. It is not readily ascertainable whether the low landings in 1988 could be attributed to stock, weather, or market conditions. If depressed stock was a reason, the increased landings in succeeding years could be due to increased effort in the fishery. The market, on the other hand, appeared to be relatively stable during the 1986-1990 period. Landings and prices in 1990 did not appear to differ substantially from the 1986-1989 average monthly landings and prices.

For purposes of estimating the amount of foregone ex-vessel revenues due to the closure, the average shallow-water grouper price in November and December for the period 1986-1989 is used together with the grouper demand estimated by Keithly and Prochaska (1985). For the period 1986-1989, the average November/December price for shallow-water groupers was \$1.70 per pound, or \$1.37 when deflated by the ex-vessel price index for edible finfish (1982=100). The 0.7 MP quota shortfall corresponds to an 8 percent reduction in catch. Using the estimated price flexibility for groupers of -0.4614, an 8 percent reduction in landings translates to a 3.69 percent increase in grouper price. After the reduction in catch, the November/December real price for groupers would be \$1.42 per pound. Approximately then, the 0.7 MP quota shortfall resulted in foregone ex-vessel revenues to the grouper fishery amounting to \$0.99 million in 1990 (in 1982 prices). This amount is about 8 percent of total ex-vessel revenues from shallow-water grouper landings in 1990 of \$12.53 million in real terms (\$15.53 million in 1990 current prices). When secondary effects on the regional economy were included, the loss would approximate \$1.86 million in sales, \$0.7 million in wages and salaries, and 50.1 in number of full-time equivalent jobs.² It is not possible to estimate the amount of industry and per boat loss in profits corresponding to the loss in ex-vessel sales due to lack of necessary information.

By adding the 0.7 MP to the 1991 quota, the commercial grouper fishery may recoup the losses incurred in 1990. Assuming that stock and market conditions do not significantly change in 1991 relative to 1990, the additional ex-vessel revenues to the commercial grouper fishery accruing to the additional quota should amount to about \$1.09 million (in 1982 prices). This is the 1991 value of the foregone ex-vessel revenues assuming a 10 percent interest rate.

This preferred option would have beneficial impacts on the commercial grouper fishery. Although there are no projected estimates on the ex-vessel revenues from shallow-water grouper landings for 1991, it is nevertheless likely that the additional ex-vessel revenues accruing to the increased quota would be slightly greater than 5 percent of total ex-vessel revenues from shallow-water groupers for 1991. Under the NMFS guidelines for regulatory impact review, this magnitude of effect may be construed to constitute a "significant" economic impact on the shallow-water grouper industry, albeit a positive one. As of May 31, 1991, there are about 1,451 commercial reef fish permits issued, with about 1,095 coming from Florida. Most likely affected by the measure are those with longline, hook and line bandit, and rod and reel permits from Florida. These affected permittees are deemed to comprise more than 20 percent of all permittees. In this regard, the preferred measure may also be considered to impact a "substantial" number of fishery participants.

²The respective multipliers used are: sales = 1.8805, wages and salaries = 0.708, and employment = 50.6 per \$1 million dollars of ex-vessel sales.

This action sends a signal to the industry that, depending on the status of the stock, a quota underrun or overrun will affect the following year's quota. In general a quota tends to induce an increase in effort in the fishery. The proposed increase in quota tends to accelerate this increase in effort, particularly since the market for groupers has been relatively stable in the past few years. An increase in effort may also arise from the industry's desire to recoup the foregone revenues in the previous year.

The additional cost of management resulting from this measure is expected to be minimal. To some extent, the cost of monitoring the quota may be expected to be slightly lower since under the increased quota, the probability of an early closure is relatively low.

Rejected Alternative: Status quo: set the 1991 quota for shallow-water groupers at 9.2 MP.

This option does not have any short-run impacts. However, the revenues foregone in 1990 would not be recouped in the current year. To some extent, fish not harvested due to the closure would lower the cost of fishing in 1991, as relatively more fish would be available. This lower cost, however, would be tempered by the general increase in the price for fishing inputs. As it has been recognized that the grouper stock is overfished, this option presents a better long-run scenario for stock recovery than the preferred option.

Conclusions

The preferred alternative is expected to positively benefit the shallow-water grouper industry. If ex-vessel revenue losses in the 1990 season were fully recouped as a result of the preferred action, the industry could earn an additional \$1.09 million (in 1982 prices) in ex-vessel revenues. The preferred option is estimated to have a significant economic impact on the shallow-water grouper industry. This impact is also deemed to affect a substantial number of fishery participants.

6. REFERENCES

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Muller, R. (chairman). 1991. Final report of the Reef Fish Assessment Panel (October, 1991). GMFMC. 34 p.

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Table 1
Red grouper ABC

Disc Mort Rate	Ref	Case											
		Pre Amend #1			Amend #1 (20")			18"			16"		
		F	Yld	SPR	F	Yld	SPR	F	Yld	SPR	F	Yld	SPR
0.00	F0.1	0.14	8.9	37.1	0.19	10.5	40.2	0.18	10.2	38.6	0.16	9.6	37.4
	Fmax	0.24	9.5	21.6	0.60	11.9	18.3	0.43	11.3	18.9	0.31	10.4	11.9
	Fcur	0.20	9.4	26.6	0.20	10.6	39.4	0.20	10.4	35.5	0.20	10.1	30.9
0.33	F0.1	0.14	8.9	37.1	0.15	8.8	41.9	0.15	9.0	40.1	0.15	9.1	38.1
	Fmax	0.24	9.5	21.6	0.26	9.4	27.8	0.27	9.7	25.1	0.26	9.7	22.5
	Fcur	0.20	9.4	26.6	0.20	9.2	34.6	0.20	9.5	32.3	0.20	9.6	29.4
0.50	F0.1	0.14	8.9	37.1	0.14	8.2	42.6	0.14	8.5	40.6	0.14	8.8	38.4
	Fmax	0.24	9.5	21.6	0.22	8.6	29.5	0.23	9.1	26.6	0.24	9.4	23.5
	Fcur	0.20	9.4	26.6	0.20	8.6	32.4	0.20	9.0	30.7	0.20	9.4	28.7
0.66	F0.1	0.14	8.9	37.1	0.13	7.7	42.9	0.13	8.2	41.0	0.14	8.6	38.6
	Fmax	0.24	9.5	21.6	0.20	8.1	30.5	0.21	8.6	27.7	0.23	9.2	24.3
	Fcur	0.20	9.4	26.6	0.20	8.1	30.4	0.20	8.6	29.3	0.20	9.1	28.0

Shallow water grouper quotas.

Disc Mort Rate	Ref	Case											
		Pre Amend #1			Amend #1 (20")			18"			16"		
		F	Yld	SPR	F	Yld	SPR	F	Yld	SPR	F	Yld	SPR
0.00	F0.1	0.14	9.7	37.1	0.19	11.4	40.2	0.18	11.1	38.6	0.16	10.4	37.4
	Fmax	0.24	10.3	21.6	0.60	12.9	18.3	0.43	12.3	18.9	0.31	11.3	11.9
	Fcur	0.20	10.2	26.6	0.20	11.5	39.4	0.20	11.3	35.5	0.20	11.0	30.9
0.33	F0.1	0.14	9.7	37.1	0.15	9.6	41.9	0.15	9.8	40.1	0.15	9.9	38.1
	Fmax	0.24	10.3	21.6	0.26	10.2	27.8	0.27	10.5	25.1	0.26	10.5	22.5
	Fcur	0.20	10.2	26.6	0.20	10.0	34.6	0.20	10.3	32.3	0.20	10.4	29.4
0.50	F0.1	0.14	9.7	37.1	0.14	8.9	42.6	0.14	9.2	40.6	0.14	9.6	38.4
	Fmax	0.24	10.3	21.6	0.22	9.3	29.5	0.23	9.9	26.6	0.24	10.2	23.5
	Fcur	0.20	10.2	26.6	0.20	9.3	32.4	0.20	9.8	30.7	0.20	10.2	28.7
0.66	F0.1	0.14	9.7	37.1	0.13	8.4	42.9	0.13	8.9	41.0	0.14	9.3	38.6
	Fmax	0.24	10.3	21.6	0.20	8.8	30.5	0.21	9.3	27.7	0.23	10.0	24.3
	Fcur	0.20	10.2	26.6	0.20	8.8	30.4	0.20	9.3	29.3	0.20	9.9	28.0

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