A Summary of Views Presented during
the Gulf of Mexico Regional Roundtable

Improving
Federal Fisheries Management
in the

Gulf of Mexico Region

The H. John Heinz III Center
for Science, Economics and the Environment

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BACKGROUND

ABOUT THE HEINZ CENTER

Founded in 1995 to carry on the work of Senator John Heinz, The H. John Heinz III Center for Science, Economics and the Environment is a nonpartisan, nonprofit institution dedicated to improving the scientific and economic foundation for environmental policy through multisectoral collaboration. Focusing on issues that are likely to confront policymakers within two to five years, the Center fosters collaboration among industry, environmental organizations, academia, and government in each of its program areas and projects. It uses the best scientific and economic analyses to develop viable options for solving problems, and its findings and recommendations are widely disseminated to public and private sector decision makers, the scientific community, and the public.

ABOUT THE MANAGING U.S. MARINE FISHERIES PROGRAM

Initiated in March 1998, The Heinz Center's Managing U.S. Marine Fisheries program seeks to increase the effectiveness of U.S. fisheries management. A primary goal of the program is to identify present concerns and possible courses of action for key decisionmakers, especially as Congress considers amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA).

In addition to numerous documents and reports, the program has produced the book *Fishing Grounds: Defining a New Era for American Fisheries Management*, which is available through Island Press. Susan Hanna, Professor of Marine Economics at Oregon State University, led the program with support from Assistant Manager Heather Blough. Four senior advisors—Captain R. Barry Fisher of Midwater Trawlers Cooperative, D. Douglas Hopkins of Environmental Defense, Dr. Andrew A. Rosenberg of the National Marine Fisheries Service, and Professor Michael Orbach of Duke University—provided oversight to the program.

ABOUT THE REGIONAL ROUNDTABLE SERIES

The Heinz Center hosted eight roundtable meetings in the federal fishery management council regions between July and October 1999. The purpose of the meetings was to identify problems the councils have encountered in implementing the 1996 amendments to the MSFCMA and to solicit input on how fisheries management can be made more effective in the regions. The original intent was to focus on improvements to the system that could be made through congressional reauthorization. Participants also offered many ideas about administrative actions that the National Marine Fisheries Service (NMFS) and the regional fishery management councils could take to make the system work better.

The roundtable meetings were limited to a small number of participants to keep the discussion focused and productive. They were attended by industry members, environmentalists, fishery managers and scientists that participate in the fishery management system at the regional level.

Assistance in identifying qualified participants was provided by council directors and leadership of the Marine Fish Conservation Network. Participants were familiar with the full range of issues facing their region, but practical limitations did not allow for representation from every fishery, gear type, or other specific interest group.

The booklet *Reauthorizing the Magnuson-Stevens Fishery Conservation and Management Act: A Handbook and Discussion Guide for Regional Fishery Management Councils*, produced during the first phase of The Heinz Center's Managing U.S. Marine Fisheries program, provided background for the regional roundtable discussions.

Each roundtable lasted two days and was guided by a similar agenda. The first day was devoted to discussing the implementation of four mandates added to the MSFCMA in 1996, including: (1) end overfishing and rebuild overfished stocks; (2) minimize bycatch; (3) identify and protect essential fish habitat; and (4) minimize adverse economic impacts to fishing communities. The second day's discussions were focused on identifying how the fisheries management system can be improved. They too were divided into four segments, including (1) background conditions; (2) decisionmaking; (3) management implementation and administration; and (4) "new" management tools.

ABOUT THE REGIONAL ROUNDTABLE REPORTS

Each roundtable discussion was recorded and transcribed by a professional reporting service. We then produced summary minutes from each transcript, which participants reviewed for accuracy. We incorporated these materials into a report for each region, which summarizes the discussions and outlines the participants' recommendations.

The Heinz Center's goal for the reports was to capture as much information as possible about federal fishery management problems and potential solutions in the various regions. Throughout the roundtable discussions, the knowledgeable and diverse participants identified many specific concerns and options for improving federal fisheries management. We did not attempt to evaluate, prioritize, or forge consensus on the issues and recommendations that were raised. We did, however, note areas of strong agreement or dissent. Although participants did not necessarily characterize proposed actions as most appropriate for Congress, NMFS, or the councils, we did so in the final reports in the interest of making the information more useful.

In addition to the regional reports, we produced a national summary, *Improving Federal Fisheries Management: A National Report*, which synthesizes information derived from the regional roundtable series. The handbook, regional and national reports, and other documents stemming from The Center's fisheries program are available online at www.heinzctr.org.

This report was prepared by Susan Hanna and Heather Blough. It summarizes views presented during the Gulf of Mexico Regional Roundtable held August 10-11, 1999 in New Orleans, Louisiana.

ROUNDTABLE PARTICIPANTS

DISCUSSANTS

Pamela Baker	Fisheries Biologist, Environmental Defense
Felicia C. Coleman	Department of Biological Science, Florida State University
Kimberly Davis	Center for Marine Conservation, St. Petersburg, Florida
Chris Dorsett	Program Director for Fisheries, Gulf Restoration Network (Day 1)
Bob Jones	Executive Director, Southeastern Fisheries Association
Andrew J. Kemmerer	National Marine Fisheries Service
William S. "Corky" Perret	Mississippi Department of Marine Resources
Kenneth J. Roberts	Louisiana Cooperative Extension Service, Louisiana Sea Grant College Program
Cynthia Sarthou	Executive Director, Gulf Restoration Network (Day 2)
Gerald P. Scott	National Marine Fisheries Service, Southeast Fisheries Science Center
Wayne Swingle	Executive Director, Gulf of Mexico Fishery Management Council
Roy O. Williams	Florida Fish and Wildlife Conservation Commission
Bob Zales II	Bob Zales Charters

INVITED, UNABLE TO ATTEND

Robert Shipp	Executive Director, Alabama Chapter, Coastal Conservation Association; Department of Marine Sciences, University of South Alabama
Stephen Thomas	University of South Alabama
Kay Williams	Save America's Seafood Industry, Inc.

FACILITATOR:	Susan Hanna
ASSISTANT:	Heather Blough
RECORDER:	Elizabeth Carney, Snelling Personnel Services

EXECUTIVE SUMMARY

The Gulf of Mexico Fishery Management Council manages fisheries in federal waters off the coasts of Texas, Louisiana, Mississippi, Alabama, and Florida. There are 61 stocks under its direct authority, and it shares management of an additional 10 stocks with the South Atlantic Council. The Council is tasked with implementing new fisheries management provisions added to the Magnuson-Stevens Fishery Conservation and Management Act through the Sustainable Fisheries Act of 1996. These provisions relate to ending overfishing and rebuilding overfished fisheries, minimizing bycatch, identifying and protecting essential fish habitat, and minimizing adverse impacts to fishing communities.

The Heinz Center convened a roundtable August 10-11, 1999, in New Orleans, Louisiana, to identify problems the Gulf Council is experiencing in implementing these new provisions and to solicit recommendations to improve fisheries management in the region. Participants included members of industry, environmental organizations, academia, and government agencies.

Roundtable participants recognized the following as primary problems the Gulf Council faces in meeting the new provisions:

- inadequate data and information;
- confusion related to how the requirement to minimize bycatch relates to other fishery management goals and requirements;
- reduced ability to compete internationally;
- commercial/recreational allocation conflicts in the region;
- confusion about how to balance the social costs of minimizing fishing gear impacts on essential fish habitat;
- inadequate consideration of the impacts of large-scale development, the Mississippi River, and the recreational sector on essential fish habitat;
- disagreement over the intent of the requirement to minimize adverse economic impacts on fishing communities; and
- uncertainty about how to define fishing communities.

The participants offered the following general recommendations for change:

- collect more and better biological, ecological, social, and economic data;
- provide guidance on how to prioritize conflicting goals and objectives;
- recognize the enormous influence of the Mississippi River and large-scale coastal development activities on the status of fish stocks in the Gulf;
- better understand and account for differences in commercial, for-hire, and individual recreational participation;
- reconcile state/federal fishing capacity goals;
- improve the council decisionmaking process;
- speed up review, approval, and implementation of fishery management plans and

amendments;
- strengthen enforcement;
- increase funding; and
- monitor and evaluate the effects of management measures.

The two-day discussions that led to the identification of these problems and recommendations are summarized in the following pages. A more comprehensive list of detailed actions that could be taken by Congress, the National Marine Fisheries Service (NMFS), and the Gulf of Mexico Council to improve fisheries management in the region is included in the back of this report.

THE GULF OF MEXICO REGIONAL CONTEXT

The Gulf of Mexico Fishery Management Council manages fisheries in federal waters off the coasts of Texas, Louisiana, Mississippi, and Alabama, and shares jurisdiction for those off the coast of Florida with the South Atlantic Fishery Management Council. State jurisdiction over Florida and Texas waters is extended to 9 nautical miles from shore. The Gulf Council has 17 voting members—one from the National Marine Fisheries Service, 5 from the state fishery agencies, and 11 public members appointed by the Secretary of Commerce.

Participants noted that the location of Gulf fisheries at the bottom of the Mississippi River drainage basin makes them susceptible to many factors outside the Gulf Council's control. They asserted that nonpoint-source pollution from agricultural and development activities upstream and large-scale flooding impact the state of regional fishery resources to a greater degree than the fishing industry. Both the shrimp fishery, which is the most valuable fishery in North America, and the menhaden fishery, the second largest in volume, are closely tied to the Mississippi River. The hypoxic zone present seasonally in the Gulf of Mexico is one of the largest in the world. Participants commented that the existence and maintenance of oil and gas structures in offshore waters also impact habitat and damage fishing gear.

Participants noted that the Sunbelt has developed, and continues to develop, at a rapid rate, creating extremely high population growth in the region and increased recreational fishing pressure. Comprised of both individual recreational anglers and for-hire fishermen, including headboat, charter boat, and smaller guide boat operations, recreational fisheries occur on a very large scale in the Gulf region.

With the exception of the menhaden fishery, participants said the commercial sector is characterized by owner/operator vessels and little vertical integration. The port of Empire-Venice, Louisiana, is the highest producing in the Gulf of Mexico region, where 328 million pounds of fish valued at over $38 million were landed in 1998.[1]

Participants asserted that almost every fishery managed by the Council has both commercial and recreational components. They noted that continued population growth accentuates allocation conflicts between these groups, particularly in the state of Florida where the importance of finfish fisheries is elevated.

Most fishermen are independent players, according to participants, which affects their expectations and participation in the fishery management process. They said that, although private recreational anglers are well organized and represented by the Coastal Conservation Association, the commercial and for-hire sectors are generally disorganized and not represented at a broad scale. This makes it difficult for fishery managers to collaborate with resource users in a systematic manner.

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[1] NMFS. 1999. *Fisheries of the United States, 1998*. Current Fishery Statistics No. 9800, U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Some participants noted that, because fishery resources off the coast of Texas are shared with Mexico, in the absence of an international agreement on the regulation of these fisheries, there is no guarantee that the benefits of conservation measures taken by Texas fishermen will accrue back to them.

IMPLEMENTING PROVISIONS OF THE 1996 SUSTAINABLE FISHERIES ACT

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The 1996 Sustainable Fisheries Act (SFA) added new provisions to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). Four of these provisions contain significant new requirements for the Gulf of Mexico Fishery Management Council that relate to ending overfishing and rebuilding overfished stocks, minimizing bycatch, identifying and protecting essential fish habitat, and minimizing adverse impacts on fishing communities. Participants' views on challenges the region faces in implementing these provisions are summarized below.

1. OVERFISHING/REBUILDING

Background

The MSFCMA's overfishing/rebuilding provision requires that fishery management plans contain measurement criteria for overfishing, actions to prevent overfishing, and plans to rebuild overfished stocks. The Act defines both "overfishing" and "overfished" as "a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the maximum sustainable yield on a continuing basis" (16 U.S.C. 1802(29)).

In addition to the 10 stocks managed jointly with the South Atlantic Council, the Gulf Council has 61 stocks under its direct authority. Of these, 4 are overfished, 6 are not overfished, 2 are approaching an overfished condition, and 49 are of unknown status. These stocks are managed through five fishery management plans: Gulf of Mexico Stone Crab, Gulf of Mexico Shrimp, Gulf of Mexico Corals, Reef Fish Resources of the Gulf of Mexico, and Gulf of Mexico Red Drum.[2]

Implementation Issues

Overfishing Definition: Participants noted that the requirement to apply the same definition to both "overfished" and "overfishing" runs contrary to the recommendations of council advisors.

Reliance on Maximum Sustainable Yield: Although council advisors previously concluded that overfishing definitions should be separated from management goals, Congress based the overfishing definition on maximum sustainable yield. It was noted that redefining the status of each stock according to these new guidelines increased the Council's workload and frustrated already poor relations between industry and managers. Participants said that new definitions caused many fisheries in the region to become overfished overnight, even though the biology of the stocks had not changed.

[2] NMFS. 1999. Report to Congress: Status of Fisheries of the United States. October

Some participants expressed frustration at the adoption of maximum sustainable yield as a management objective, arguing that the concept was previously labeled archaic by the biological fisheries community. Although admitting that it is a difficult number to estimate, others supported the movement of maximum sustainable yield from a target to a threshold level as a much-needed precautionary action designed to prevent further fishery management failure. Some participants believe the Gulf Council is unfairly being forced to share the burden for mistakes made in other council regions. Others view the Gulf Council as a contributing factor to the need for a more precautionary management philosophy.

Flexibility in Implementation: Some participants believe that regional attributes of the Gulf are not being recognized by national policy which, under the 1996 SFA amendments, is more constraining than ever. Others noted that, in spite of the additional constraints imposed on the Council by requirements to end overfishing and rebuild overfished fisheries, the Council retains considerable flexibility in the development of optimal yield goals and management plans to achieve those goals.

Rebuilding Schedule: Some participants noted that stock rebuilding schedules based on generation time were in place in the region prior to requirements to rebuild overfished stocks in as short a time period as possible, not to exceed 10 years, except where the biology of the stocks, other environmental conditions, or international agreements dictate otherwise.

Some participants questioned why regionally defined schedules should be over-ridden by Congress. They view the 10-year rebuilding schedule as inappropriate, arguing that such schedules should consider sociological, as well as biological, factors and should be based on the realities of the past. They believe the Council should have the flexibility to extend a rebuilding schedule to 20 years if a 10-year schedule is likely to result in major socioeconomic disruption.

Others said that the 10-year schedule is needed to prevent the Council from delaying tough actions that may be harmful to industry. They noted that the Council's automatic adoption of 10-year rebuilding schedules for most stocks despite the requirement to rebuild fisheries in as short a time period as possible proves that socioeconomic concerns are in fact incorporated in such decisions, although perhaps not expressly recognized.

Monitoring and Evaluation: Some participants suggested that a monitoring and evaluation program must be an essential component of rebuilding plans, to enable the Council to determine whether specific measures are achieving rebuilding goals. They observed that plans that restrict the industry but fail to rebuild fish stocks frustrate fishermen and reduce support for conservation measures.

Research and Data Needs: Some participants noted that the status of many species in the Gulf region is unknown, a result of limited personnel and funding. Because the increased workload created by the overfishing/rebuilding provision and other new requirements is consuming scarce resources, they believe it will be difficult for NMFS and the Council to undertake more assessments. They indicated that insufficient information often provides a weak link in the management chain—a supporting argument for those opposed to more restrictive

regulations. They said more resources are needed to collect and analyze stock assessment information. They also suggested that stock assessment scientists be given more support so that the use of existing information can be improved as well.

Because many suites of species have very similar life history characteristics, one participant proposed collecting and analyzing data for indicator species only, rather than performing individual stock assessments for each. Data from indicator species would then be extrapolated to determine the status of similar species. It was observed that in addition to proactively protecting fishery resources about which little information is known, this approach would lessen the need to acquire unrealistic amounts of data.

Some participants noted that the at-sea observations of fishermen often do not correlate with information provided by scientists, even though the data provided by these fishermen help to form the basis for conducting stock assessments. Suggestions to improve the scientific basis of fishery management included increasing cooperative research projects, establishing an observer program, and incorporating anecdotal and other information not traditionally considered into scientific assessments, such as information on the impacts of the Mississippi River and population growth on regime shifts and carrying capacity.

The Marine Recreational Fishing Statistics Survey is the primary source of data on recreational fisheries. Because the survey was designed to provide annual estimates of recreational catch and effort for relatively large regions, some participants pointed out that the resulting data are generally not useful for near-real-time quota monitoring. They stated that catch estimates can have very high imprecision and vary considerably from year to year for some species that are infrequently encountered. Participants expressed the need for more and better information on recreational catch.

2. BYCATCH

Background

The MSFCMA's bycatch provision requires that fishery management plans establish standardized bycatch reporting methodology, as well as measures to minimize bycatch and bycatch mortality. The Act defines "bycatch" as "fish which are harvested in a fishery, but which are not sold or kept for personal use, [including] economic discards and regulatory discards." The legislative definition excludes "fish released alive under a recreational catch and release fishery management program" (16 U.S.C. 1802(2)).

Implementation Issues

Intent: Some participants pointed out that the failure to define the terms "minimize" and "to the extent practicable" as used in the bycatch provision creates uncertainty as to how the goal of this provision relates to other fishery management goals. National Standard 7, for example, requires that "conservation and management measures shall, where practicable, minimize costs…." They questioned how it is possible to minimize bycatch and costs simultaneously, and

what balance best defines the greatest overall benefit to the nation.

Some participants view bycatch as an integral component of fishing operations and questioned whether discarded fish that are returned to the marine system can be considered as waste. Others believe that bycatch and discards negatively affect marine ecosystems and community structure and should be minimized to the extent possible. They supported the bycatch provision as an important incentive for industry innovation to do so.

Recreational Application: Some participants questioned why the definition of bycatch includes economic and regulatory discards, but excludes those that occur as a result of catch-and-release fishing. To them, it appears as if the provision favors the recreational industry. Others found this assessment too simplistic, arguing that it is unrealistic to compare commercial and recreational fishing operations.

Effects on Allocation: Participants noted that the bycatch provision has increased allocation conflicts between commercial and recreational fishermen in the Gulf region. Some groups face greater restrictions than others in some fisheries, while each argues that the others cause more damage.

International Effects: Because foreign fishing operations are not restricted by the same bycatch standards as domestic operations, some participants said that imports can create inequities and cause conservation to be merely displaced. Others pointed out that this can also occur when regulations vary among states.

Regulatory Discards: Participants noted that regulatory discards are a problem in the Gulf region, particularly in the reef fisheries. They suggested that current regulations, such as size limits that create discards, should be evaluated to determine if they are effectively achieving management goals. And, if so, they should be evaluated to determine if they are providing benefits that offset the costs of the regulatory discards they create. Participants believe that, in the future, it may not be appropriate to select management strategies that create discards.

Monitoring and Evaluation: Participants said that compliance with bycatch reduction devices and turtle excluder devices has been very good, but noted the need to evaluate the effectiveness of these devices.

Research and Data Needs: It was observed that other than data that exists for the shrimp trawl fishery, no definitive information has been published on bycatch or discard mortality in the Gulf region. Participants noted that research on this subject remains a high priority in the region. They said that research efforts should also be directed toward developing innovative fishing gear and evaluating other gear types that are used around the country. Some suggested that adopting management tools not traditionally used in the region, such as individual transferable quota programs and marine protected areas, could provide an alternative to improvements in bycatch technology.

3. ESSENTIAL FISH HABITAT

Background

The MSFCMA's habitat provision requires that fishery management plans describe and identify essential fish habitat, minimize fishing effects on habitat, and identify actions to encourage conservation and enhancement of habitat. The Act defines "essential fish habitat" as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. 1802(10)).

Participants noted that the Gulf Council's essential fish habitat amendment was partly approved by NMFS. They added that it is currently under litigation for failing to include all species and for not adequately addressing the adverse effects of fishing gear on habitat.

Implementation Issues

Coordination and Integration: Participants agreed that the Council, NMFS, states, and communities must take a comprehensive approach to meeting the requirements of the habitat provision and engage in more formal, cooperative efforts to protect essential fish habitat. They recommended that habitat protection be incorporated into the development of fishery management plans early on through the Council's habitat advisory panels.

Fishing Gear Impacts: It was noted that the requirement to minimize adverse impacts on essential fish habitat caused by fishing gear "to the extent practicable" fails to specify the level of impact that should trigger action by the Council. Some participants said that this makes it difficult to weigh ecological and social factors in deciding how to address adverse habitat impacts. They questioned, for example, whether the Council would have to shut down entire fisheries to minimize gear impacts. One participant proposed that the Council consider the status of the stock affected when addressing the impact of a specific gear. For example, the Council could recommend stricter actions for stocks characterized as overfished than for those that are not.

Nonfishing Impacts: Participants commented that the location of Gulf fisheries at the bottom of the Mississippi River drainage basin makes nonfishing-related impacts on essential fish habitat a very real and serious threat. Some believe that the sources of such impacts should be held responsible and accountable for damages to marine habitat and fish stocks. Others noted that it is unfair to restrict nonfishing-related activities within surrounding coastal states without restricting the same activities upstream as well.

Some participants said that the Council did a thorough job listing nonfishing impacts in the essential fish habitat amendment, but suggested that these impacts should be prioritized. The three nonfishing activities that participants believe to pose the greatest threats to essential fish habitat in the Gulf region are anchoring large vessels, shrimp farming, and major development initiatives resulting from the surge in recreational fishing activities. Suggestions to address these threats included amending the MSFCMA to provide the councils with authority to regulate the

activities of nonfishing vessels in essential fish habitat, at minimum, in federal waters; resolving escapement and disease issues associated with aquaculture operations; and better aligning state and federal fishery management goals. The Council has no authority to restrict coastal development activities, but participants emphasized the importance of addressing both cumulative fishing impacts and nonfishing impacts associated with the unrestricted growth of the recreational fishery.

One participant proposed that Congress should consider incentive programs similar to the wetland restoration and conservation reserve programs, or even mitigation banking, to address nonfishing-related impacts on essential fish habitat. Participants pointed out that significant progress could be made in integrating coastal and ocean management if the approach for dealing with nonfishing impacts were broadened.

Research and Data Needs: Participants noted that the data necessary to achieve the requirements of the essential fish habitat provision are lacking in many areas. Some pointed out that the Council is being forced to act on research that does not exist and lacks funds to obtain the information that it needs.

Participants said that more research is needed on the effects of fishing gear on marine habitat. They noted that further analysis of existing gear-related research is also needed, including studies of the impacts of recreational gear on grass beds, fishing-related habitat damage in the Keys and Tampa Bay, and the effects of shrimp trawls on habitat.

Other areas identified as in need of additional research included finer-scale studies of habitat destruction; life history information linking species to habitats; and the identification, documentation, and analysis of nonfishing-related recreational activities, such as diving, and natural phenomena, such as red tides, on marine habitat.

4. COMMUNITIES

Background

The MSFCMA's communities provision requires that the effects of management measures on fishery participants, fishing communities, and fisheries in adjacent areas be assessed. The Act defines "fishing community" as "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community" (16 U.S.C. 1802(16)).

Implementation Issues

Intent of the Provision: Some participants stated that, by elevating community concerns to a national standard level, Congress intended to give socioeconomic factors higher priority in management decisions. Others opposed this view, arguing that the intent of the provision is simply to minimize socioeconomic impacts on fishing communities, while still achieving the

management goal. They noted that the MSFCMA instructs fishery managers to consider socioeconomic factors secondary to biological factors and that it will not be possible to maintain the status quo as fisheries change over time.

Definition of Fishing Communities: Participants wondered at what scale communities should be defined—as counties, as cities, as waterfront neighborhoods? They noted that communities at many different scales meet the criteria provided by the MSFCMA definition of the term "fishing communities" and commented that obviously the socioeconomic impacts of fishing regulations will be much greater when examined at a smaller scale.

Opinions vary as to whether the term "communities" should be further defined regionally or nationally. Those participants who believe a regional definition is more appropriate noted that the fish, activities, people, methods, and history of the Gulf make fishing communities in this region very different from those in other regions. Although NMFS guidelines allow for some flexibility, participants questioned whether a regional definition that diverges from these guidelines will be accepted by the agency. Others who favor congressional direction on the subject noted that criteria identified by the Council are likely to be challenged in the courts.

It was observed that the present geographic-based definition of "fishing communities" would permit the Council to exclude important members of a fishery that are not aggregated in a specific location with others, a particular problem for the recreational sector. Some participants believe this clearly conflicts with National Standard 4, which states that management measures must be fair and equitable. Use of the term "harvest" in the definition of "fishing communities" also appears to some to exclude the consideration of recreational fishermen as community members. They suggested that the term be changed to "catch."

Research and Data Needs: Participants pointed out that few data exist that would enable the Council to determine the socioeconomic impacts of fishery regulations. They noted that census data are too aggregated, and data based on political boundaries are not adaptable to community analyses. They are concerned that attempts to analyze community impacts with inadequate data are likely to result in litigation. They believe that more data and analysis are needed in this area. Some suggested that proper socioeconomic impact assessments should examine the impacts of continuing a particular pattern of fishing over time, as well as those that result from restricting fishing activity.

IMPROVING FISHERIES MANAGEMENT IN THE GULF OF MEXICO REGION

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Roundtable participants reviewed background conditions in the Gulf region's fisheries, existing decisionmaking and implementation processes, and possible new tools to identify administrative and legislative actions for improving fisheries management in the region.

1. BACKGROUND CONDITIONS

Present-day fisheries are a product of their management history. Regional roundtable participants identified the following background conditions as important factors influencing the current state of fisheries and fisheries management in the Gulf region. They also discussed how these conditions could be better addressed.

Overcapacity

Status: Participants indicated that overcapacity is a major problem in Gulf fisheries, resulting in reduced economic revenue, increased bycatch, and habitat degradation. But, despite widespread recognition of the overcapacity problem, they acknowledged that there is much opposition to both capacity-reduction and limited-entry programs. Some participants suggested that educating user groups about the benefits of such programs could reduce opposition. Others believe a congressional mandate may be needed to force the Council to address overcapacity in commercial and recreational fisheries. They suggested that Congress provide such direction overtly and proactively, rather than waiting until large-scale failures occur.

Approach: Some participants noted that the open-access nature of fisheries in the Gulf region has made it difficult to reduce effort in one fishery without increasing effort in others. To prevent further displacement from occurring as a result of efforts to reduce capacity, they recommended that the Council must be comprehensive in its capacity-reduction strategy, reducing effort and limiting entry throughout the region.

Some participants argued that mechanisms to reduce capacity in Gulf fisheries must apply to individual recreational anglers, as well as to commercial and for-hire operations. They indicated that in the past, commercial operations, followed by for-hire operations, have been the subject of regulation simply because they were easier to target, while individual recreational angling has been largely unregulated and even encouraged. Some noted that the Gulf Council's Scientific and Statistical Committee has recommended for several years that recreational catch be better managed.

Limiting recreational access to fisheries is a controversial issue in the Gulf region. Some participants view the expansion of these fisheries as a natural consequence of coastal population and tourism, arguing that fisheries are evolving toward such aesthetic types of uses. Others believe that increasing recreational allocations on the basis of continued growth and economic contributions to the regional economy is unfair, since growth of commercial fisheries has been

restricted for quite some time. Because the recreational component is responsible for such a high percentage of catch in most fisheries, they believe that it must be an essential part of a capacity-reduction program.

State and Federal Goals: Participants noted that, even though federal fishery managers recognize that something must be done to reduce capacity and limit access to fishery resources, state governments continue to actively promote recreational fishing. They pointed out that charging state resource agencies with the management of fishery resources creates a serious conflict of interest because these agencies depend on revenues from the sale of fishing licenses as a major funding source. They argued that it is highly unlikely that states will permit recreational capacity to be reduced under such circumstances. Some noted that Gulf states view recreational fishing as a commercial enterprise. Some state agencies have entire divisions devoted to increasing the number of individual recreational anglers, and the booming tourism industry has caused a fairly substantial increase in charter boats throughout the region, many of which are owned by casinos.

Some participants believe that recreational growth can be addressed by improving forecasting and planning, which would enable fishery managers to better incorporate the increasing numbers of recreational participants in fishery management. They noted that the economic benefits provided by the recreational sector are critical to the region and should not be restricted by limiting the extent to which these users can participate in the fisheries, particularly when the federal government does nothing to address population growth. Others urged federal and state agencies to better coordinate and integrate fishery management goals, particularly in the case of Florida and Texas, where state jurisdiction is extended.

Buyback Programs: Participants recommended that voluntary buyback programs be developed and implemented to offer fishermen viable alternatives to remaining in the fisheries. They specified that such programs should be both permanent and proactive, made available to fishermen before fisheries fail, so that they can plan for their transition rather than be forced out. Some noted that financing these programs through low-interest loans would avoid imposing a cost on the general public and ensure that capacity reduction is achieved fairly and appropriately. They added that other creative, cost-effective tools for capacity reduction should be considered as well.

Information Needs: Participants said data on the number of commercial, for-hire, and individual recreational fishermen in the Gulf region are either severely inadequate or, in some cases, nonexistent. They indicated that the Council, with the exception of the two commercial fisheries for which logbooks are required, does not really know who is fishing. They believe this is a tremendous problem that makes developing an appropriate capacity-reduction strategy very difficult.

There was disagreement about the usefulness of permitting systems in generating this information. Some participants view permitting systems as an unnecessary expense, pointing out that latent licenses would prevent permit information from providing an accurate account of fishing effort. They believe that, particularly in cases where fisheries are not overfished, the

resources needed to implement such a program could be better applied elsewhere. Others said the absence of permitting systems is unacceptable, particularly in the shrimp fishery, which is the most valuable in the nation and results in bycatch of an endangered species. They argued that the public has a right to know who is using public resources.

Participants stressed that recreational fisheries in the Gulf are both large and complex, and that the for-hire and private components differ greatly. Although some pilot surveys are being undertaken at present to evaluate alternative methods of collecting catch information for charter vessels, some suggested that more information is needed to understand the complexities of these fisheries and to determine appropriate allocations.

2. DECISIONMAKING

Decisionmaking is a key component of the fishery management system. All biological, ecological, social, and economic conditions in the fisheries are influenced by decisions made at the regional and federal levels that form the basis of fishery management plans and amendments. The discussion that follows summarizes the challenges and opportunities to improving decisionmaking identified by participants.

Leadership and Accountability

Some participants commented that at times the Council fails to act on an issue, even when clearly instructed to do so, and that it tends to revisit old decisions each time political pressure resurfaces; for example, with recommendations related to red snapper quota. They noted that although the threat of Secretarial intervention exists in these cases, practical realities make this unlikely. They suggested that this reluctance to act could be better addressed if NMFS exercised more leadership and oversight, but noted that the agency simply does not have the resources necessary to follow through.

Those participants who are frustrated with the Council's unwillingness to take a stand based on peer-reviewed information noted that the time, energy, and funds spent on revisiting old issues could be better applied to new issues. They pointed out that such behavior undermines the Council system and results in unstructured meetings, where an item that has been previously voted on may resurface at an unscheduled time when those who have a stake in the outcome are no longer present. This group believes that the Council must learn to say "enough is enough" and suggested that a discussion should be re–opened only if the Council is presented with "new" evidence of a different type relevant to the decision that has been made. Others suggested that open and constant debate is a necessary and healthy part of any political process and that the Council should not be limited in its ability to revisit a decision or adapt management decisions based on improved input. They noted that NMFS has the authority to deny reconsideration of a decision once it has been formally submitted.

Some participants recommended that council members be held accountable for their decisions; for example, by revoking voting authority from those who consistently oppose regulation of any sort or who show inconsistent attendance at meetings. They noted that, at present, the Council

has the authority to dismiss members, but that this action requires a vote of two-thirds, something very difficult to achieve among a panel of peers. For this reason, they suggested that council member performance should be reviewed at the national, rather than the regional, level. They asserted that requiring roll call votes at all times would create a record that could be used in the routine evaluation of each member.

Public Representation

It was noted that some council members openly dismiss public ownership of fishery resources, despite recognizing this concept when taking their oath. Some participants believe that those who blatantly disregard public values in fishery management decisions should be penalized; for example, required to step down. At present, such penalties are not possible without the agreement of two-thirds of the voting members. Others suggested that the public interest could be better acknowledged by clarifying public ownership of fishery resources in the MSFCMA, making the public more effective participants in the process through increased outreach and education, improving the process for dealing with public comments, and/or broadening council representation.

Council Composition

Diversity: Some participants suggested that council composition should better reflect the change in fishery management constituents over the last 20 years; for example by including consumers and environmentalists. They believe that greater diversity will lead to fairer and more balanced decisions. Some pointed out that although the MSFCMA clearly allows for diversity in council membership, amending the Act to require that each council be comprised of a certain percentage of people from various sectors would ensure that diverse interests are represented at the table. Others suggested that diversity could also be improved by shortening the length of council appointments. For example, single terms of four years would allow more people to become involved in the process than the traditional three consecutive three-year terms. Some suggested that improving council composition may require reforming the nomination and appointment process to ensure that high-quality, objective people fill council seats.

State Representation: Although state representatives are required to take the council oath, some participants noted that differences in state and federal goals can create situations where state representatives must vote in direct conflict with federal interest to retain state loyalty. They indicated that the votes of these members can also result in over-representation of recreational interests, because at-large members appointed by Gulf states generally represent the recreational sector through their votes as well.

To address these concerns, some participants suggested that state representatives be given an advisory role in the decisionmaking process, rather than being permitted to vote. They believe that relegating these members to a nonvoting capacity would reduce conflict of interest at the state level, while enabling states to maintain their valuable participation in the process. They added that this would also free up one-third of the council seats which could be used to increase the diversity of council membership without making the process too unwieldy by increasing the

number of voting members.

Other participants strictly opposed this idea, arguing that state representatives must be intimately involved in council decisions because each is held accountable for these decisions by the state each represents. They cautioned that, if denied the right to vote on council actions, states may begin to send representatives of lower status or cease participation in the system entirely over time. They noted that this would be very damaging to a system that requires the integration and coordination of regulations at the state and federal levels.

Training and Orientation

Participants concurred that new council members could be better prepared for the job if required to undergo formal orientation or an apprenticeship program, and gain experience at the council table as a nonvoting member. This would enable them to improve their understanding of technical information before they are required to vote.

Science

Adequacy and Use: Some participants noted that there is a common perception among industry members that scientific conclusions are predetermined, then validated. They asserted that this leads to a general lack of acceptance of scientific recommendations, which is strengthened by the perceived inconsistency between what the industry sees on the water and what science estimates as the stock condition. They noted that the fact that fish stocks appear to be fine despite scientific warnings that they are below levels necessary to meet fishery management plan criteria—even though the Council has allowed fishing mortality to occur at the high end of the recommended range—is used to further validate this position. But other participants disagreed that the science is inadequate and argued that it is often challenged simply to delay actions that result in socioeconomic hardships to industry.

Peer Review: Participants who believe that the science informing fishery management decisions is not up to par blamed an inadequate peer review process. They claimed that the Council's Scientific and Statistical Committee and other advisory panels are often not given sufficient time or data to perform a complete review. They also contended that the scientific peer review process is ridden with conflicts of interest because those reviewing the science are too closely connected with those whose research is being reviewed. They suggested that members of review panels who are also NMFS staff are unable to objectively review scientific research performed by colleagues at the agency.

Others countered that the peer-reviewed scientific research available to inform council decisions is adequate but that council decisions are made independent of this information if it fails to support their predetermined decisions. They noted that, even when scientific information has been peer reviewed and accepted by an independent body, it has still been rejected by the Council on the basis of inadequacy. Some pointed out that this is in direct conflict with National Standard 2, which requires that decisions be based on the "best available scientific information." They suggested that NMFS should exercise more oversight in such cases.

Some participants also noted that the present shortage of qualified scientists may make it unrealistic to expect that all research can be reviewed outside of the Council's established procedure. They explained that, because peer review is a voluntary process, it is difficult to find committed, well-respected scientists who are able to participate. They added that scientists have become frustrated with the Council for rarely heeding their advice, accusing them of bias, and criticizing their work. They said scientists have begun to withdraw their participation, making it difficult to obtain quorums. They suggested that, in addition to compensating them for their time, the Council should work to improve relations with scientific reviewers.

Others countered that a great degree of scrutiny should be expected when scientific research is paid for with public funds. They argued that the Council is running a business and, like any other business, must identify an appropriate risk level, take into consideration all information, and then balance the information accordingly. They believe that National Standard 2 should be amended to read "best information available," to provide council members the freedom to base decisions on the information they believe is best.

Education: Some participants suggested that education can help close the gap between scientists and industry. They indicated a need to educate new council members in issues of science and scientific process before these members take their seats. Others noted that scientific meetings, such as stock assessment panels, are open to the public and suggested that industry interests should be encouraged to attend these meetings where they can participate in debate about the data and information that form the basis of stock assessments.

Cooperative Research: Some participants suggested that cooperative research should be encouraged to help industry members feel more included in the scientific process and improve their understanding of how scientific information is acquired and used. They believe this will improve buy-in to scientific conclusions. One participant noted that in the past, fishermen have been reluctant to participate in cooperative research programs and to provide data to fishery managers for fear that it will be used against them. Another commented that this fear is based on the unfortunate reality that, in many cases, industry-supplied information reveals that there are, in fact, problems with the fishery.

Precautionary Management: Some participants suggested that fishery scientists and managers should also search for ways for acquiring data that are not dependent on fishermen or ways for making management decisions that are not dependent on unrealistic amounts of scientific information. They specified that a precautionary approach to management would reduce reliance on both.

Funding: Even if the Council adopts a precautionary approach, participants stressed that more and better data will be needed to adapt fishery management over time. They said scientists need good baseline data, and noted that improving databases will require an increase in funding.

3. MANAGEMENT IMPLEMENTATION AND ADMINISTRATION

The implementation of management decisions is an important part of the fishery management process. Roundtable participants exchanged views on management implementation and identified problems with the current system and how the process could be improved. Their discussion is summarized below.

NMFS/Council Interface

Plan Review and Approval: Participants commented that the system for approving fishery management plans and amendments has proceeded at a "snail's pace" since the MSFCMA was reauthorized in 1996 and that, at times, it appears to come to a halt. Some noted that often a fishing season has ended and new regulations are being considered by the time the plan for that season has been approved. Participants asserted that simple regulatory changes should be approved within a matter of months. They indicated a need to review plans and amendments more quickly, while still ensuring that they are legally defensible.

Participants acknowledged that the Council and NMFS have been working together to identify how to make the review and approval process more effective and efficient. They were generally optimistic that these efforts will meet with success. Suggestions for improvements at present included increasing the number of NOAA legal staff, amending the MSFCMA to include prior language that allowed concurrent approval actions for plan amendments and regulations, and/or reinstating the fast-track system previously available to the Council to reprocess rejected plans that have been revised.

Emergency Rulemaking: Participants said that currently the NMFS Regional Administrator is instructed by NOAA headquarters to cast a negative vote on emergency rules, even if he supports the action. They explained that by doing so, he preserves the Secretary's authority to reject the request. Some recommended that the MSFCMA should be modified to direct the Secretary to promulgate emergency regulations or interim measures to address the emergency if the Council, by unanimous vote—excluding that of the NMFS Regional Administrator—requests that such action be taken.

Enforcement

Participants agreed that enforcement is an essential component of fishery management in the Gulf region. Some said it is essential because many resource users do not have the ethical attitude needed to rely on voluntary compliance. They stressed that the public must be assured that fishery regulations will be enforced; otherwise, people will think that the public participation process is a waste of time.

Approach: Participants agreed that enforcement concepts and measures must be better incorporated into the development of fishery management plans so that the enforcement necessary to ensure compliance with a regulation is both realistic and achievable.

Penalties: Participants also emphasized that fishery violations should be penalized more severely. They noted that at present, enforcement fines and penalties are simply considered the cost of doing business. Suggestions included eliminating the "ability to pay clause," which prohibits violators from being penalized a sum that exceeds their ability to pay, and permitting all vessels so that consistent violators can be prohibited from participating in a fishery through permit revocations.

State/Federal Coordination: Participants commented that state/federal coordination and cooperation in identifying, prosecuting, and penalizing fishery violators must be improved. They noted that the Council supports the implementation of cooperative state/federal enforcement programs patterned after the NMFS/South Carolina cooperative agreement, under which both state and federal governments work to enforce the MSFCMA—minor violations are dealt with, and sometimes even prosecuted, at the state level, and major violations are dealt with at the federal level. Some noted that cooperative enforcement efforts will be difficult if state and federal regulations continue to differ.

Funding: Participants indicated that federal and state enforcement budgets are not sufficient to prosecute every violator to the fullest extent. Some suggested that the implementation of vessel monitoring systems could present managers with a more cost-effective means of monitoring and enforcement.

Funding and Fees

Many participants shared the view that congressional appropriations will never be sufficient to meet the funding needs of the Council. They argued that authority for fee collection in fishery management should be consistent with that for other public natural resources. They contended that fees should not be tied to a particular management tool, such as individual fishing quotas, but rather assessed across the board. In addition, they specified that fees must extend to all sectors involved in the fisheries—that commercial, for-hire, and individual recreational fisheries must be treated equally.

Some participants noted that the imposition of fees would be more widely accepted if the revenue were applied to fishery management, enforcement, and science in the region rather than returned to general revenue. But others cautioned that if doing so causes Congress to try to balance the situation by appropriating less funds, NMFS may be left with less than it had to begin with.

Participants suggested that MSFCMA reauthorization should carefully consider innovative, alternative funding mechanisms for circumventing the appropriations process. They believe that outer continental oil and gas legislation currently under debate would provide much needed funding relief.

Monitoring and Evaluation

Participants agreed that monitoring and evaluation must be a critical component of fishery management, extending to all tools that the Council employs. They raised the questions of whether current fishery management measures, such as size limits and limited entry, are achieving their intended objectives, and why the Council chooses a particular tool—for example, long closed seasons that promote derbies. They recommended that the effectiveness, and unintended consequences, of management measures be routinely monitored and evaluated.

4. "NEW" MANAGEMENT TOOLS

Several tools and approaches not traditionally used in fishery management have been receiving increased attention across the nation for their potential to address problems associated with traditional management, such as overfishing, overcapacity, bycatch, and habitat degradation. Roundtable participants discussed the regional application of each of the following fishery management tools and approaches.

Individual Fishing Quotas

Participants noted that the Gulf Council supports rescinding MSFCMA provisions that prohibit it from undertaking or continuing the preparation of a red snapper individual fishing quota program or any system that provides for the consolidation of permits to create a trip limit before the year 2000 deadline. The Council also opposes extending the moratorium on the development of individual fishing quota programs because it needs flexibility to select the fishery management tool that works best for each fishery in each situation, as well as flexibility in designing individual fishing quota systems and setting fees.

Some participants supported the Council's position; others did not. One suggested that the moratorium on individual fishing quota programs should be extended unless Congress can ensure that such programs developed by the Council will meet certain criteria related primarily to the definition of "property rights," the assurance of conservation benefits, and the ability of such programs to fund themselves. Other participants expressed concerns related to consolidation of the industry, the ability of government to revoke quota shares after investments have been made, the ability of conservation groups to purchase quota shares, and the transferability of quota shares between the commercial and recreational sectors. Some participants who shared these concerns believe that the moratorium provides an opportunity to discuss these issues while the Council is not "under the gun." But others argued that such discussions, which are essential to allaying the fears of those opposed to individual fishing quota programs, will never occur as long as the moratorium remains in place.

Marine Protected Areas

Participants commented that the Gulf Council should consider use of marine protected areas as a fishery management tool that can provide important benefits, such as protection of fish habitat, increased fishery productivity, enhanced yields, and research areas where natural versus fishing mortality and the effects of fishing gear on habitat can be studied.

Siting: Some participants said that currently productive areas should be excluded from consideration as marine protected areas so as to avoid displacing the industry. Instead, they suggested that marine protected areas should be sited in currently unproductive areas supplemented by artificial reefs. Others opposed the notion that the protection of artificial and natural habitats will provide comparable benefits, pointing to the lack of experimental evaluation of an artificial site relative to a natural site. They argued that it is naïve to assume that marine protected areas comprised of artificial structures can be used to increase or maintain production, determine the impact of fishing on natural reef systems, or determine natural ecosystem function.

Restrictions: Some participants considered it only fair to restrict all activities in marine protected areas, including recreational activities, such as diving and anchoring boats. They claimed that, in addition to maintaining equity, eliminating access to these areas completely—with the exception of scientific research—would help make enforcement easier. This group supported amending the MSFCMA to provide NMFS and the regional councils the authority needed to manage such nonfishery activities inside designated protected areas. Others believe enhanced diving and ecotourism activities should be part of the package of benefits provided by marine protected areas. They contended that management of these activities should not be confused with management of the fishing industry because doing so would derail the establishment of marine protected areas.

Approach: Because the design and development of marine protected areas is likely to be contentious, participants suggested that this is an area in which the use of SFA Fishery Negotiation Panels should be considered.

Evaluation: Participants commented that evaluation is a critical component of a marine protected area program. They said it is crucial that the design of such programs include specific objectives and evaluation criteria.

Enforcement: Some participants noted that the design and development of a marine protected area program must also include a well-thought-out enforcement plan.

Funding: Some participants questioned whether the Council will ever have the funds required to undertake the necessary research, evaluation, and enforcement of marine protected areas. Others noted that the funding and evaluation needs of marine protected areas should be no different from those of any other fishery management tool. They cautioned that marine protected areas should not be held to a higher standard than other fishery management tools.

Incentive-Based Management Measures

Participants believe that fishery managers have failed to adequately consider incentive-based management measures in the past. They recommended that measures that make it in the industry's best interest to comply with conservation objectives should become more widely used in the future. Some suggested that incentives or financial assistance programs should be offered to help fishermen comply with more restrictive regulations, such as switching to a cleaner gear, noting that this would reduce fishermen's resistance to restrictive measures and increase their buy-in.

ACTIONS RECOMMENDED BY ROUNDTABLE PARTICIPANTS

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General recommendations offered by roundtable participants to assist the Gulf Council with implementation of the 1996 amendments to the MSFCMA and to improve the effectiveness of fisheries management in the Gulf region include:

- Collect more and better biological, ecological, social, and economic data.
- Provide guidance on how to prioritize conflicting goals and objectives.
- Recognize the enormous influence of the Mississippi River and large-scale coastal development activities on the status of fish stocks in the Gulf.
- Better understand and account for differences in commercial, for-hire, and individual recreational participation.
- Reconcile state/federal fishing capacity goals.
- Improve the council decisionmaking process.
- Speed up review, approval, and implementation of fishery management plans and amendments.
- Strengthen enforcement.
- Increase funding.
- Monitor and evaluate the effects of management measures.

Many specific actions to implement these recommendations were identified by participants throughout the roundtable discussion. Those with apparent support of the majority are listed below. Although participants did not necessarily characterize proposed actions as most appropriate for Congress, NMFS, or the councils, we have done so here in the interest of making the information more useful. A more detailed discussion of the issues leading to these recommendations can be found in earlier sections of this report.

1. WHAT CONGRESS CAN DO

- Fund biological, ecological, social, and economic data collection and analysis.
- Extend and fund for another three years the MSFCMA provision that provides for conclusion of a research program on bycatch of the Gulf and South Atlantic shrimp trawl fishery.
- Eliminate statutory prohibitions on the collection of economic data.
- Eliminate the prohibition on user fees.
- Fully fund mandates of the MSFCMA.
- Provide a mechanism to reconcile state and federal fishery management goals, standards, and requirements, particularly with respect to growth of the recreational sector.
- Establish a more comprehensive approach to essential fish habitat protection.
- Provide the Council authority to regulate activities of nonfishing vessels in essential fish habitat.
- Provide a mechanism to protect U.S. fishermen who must abide by stricter conservation measures than their international counterparts.

- Better integrate interstate and international conservation goals.
- Clarify public ownership issues in the MSFCMA, or reform the nomination and appointment process to ensure better representation of the public interest.
- Recombine the comment periods for amendments and implementing regulations that were separated in the 1996 reauthorization of the Act.
- Provide a fast-track system for processing revised plans.
- Mandate the promulgation of emergency regulations or interim measures to address the emergency if the Council votes unanimously to do so, exclusive of the NMFS Regional Administrator.
- Eliminate the provision limiting fines to an individual's ability to pay.
- Fund cooperative state/federal enforcement agreements.
- Provide a clause in the MSFCMA promoting the examination of incentive-based measures.
- Fund the development of incentive-based programs.

2. WHAT THE NATIONAL MARINE FISHERIES SERVICE CAN DO

- Improve biological, ecological, social, and economic data collection and analysis.
- Obtain more information on fishery participants.
- Increase stock assessment staff in the region.
- Develop and implement cooperative research programs.
- Incorporate fishery-dependent data into stock assessments.
- Incorporate oceanographic information into stock assessments.
- Better acknowledge and manage the recreational sector.
- Resolve the current division in the approach to management of commercial, for-hire, and private recreational fisheries.
- Provide guidance on commercial, for-hire, and private recreational sector allocations.
- Consider a federal saltwater recreational permit system.
- Improve leadership and oversight.
- Look for ways to simplify the documentation process and reduce delays.
- Penalize fishery violations more severely.

3. WHAT THE GULF OF MEXICO FISHERY MANAGEMENT COUNCIL CAN DO

- Obtain more information on fishery participants.
- Consider alternate, nontraditional funding sources, such as environmental organizations and nonfishing-related recreational groups.
- Develop allocation guidelines.
- Resolve the current division in the approach to management of commercial, for-hire, and private recreational fisheries.
- Develop programs to reduce capacity.
- Develop and support permanent, voluntary buyback programs.

- Better acknowledge and manage the recreational sector.
- Incorporate habitat protection into fishery management plans early on.
- Train and orient new council members at the regional level.
- Consider broadening council composition or improving accountability at the council level.
- Improve public outreach and education.
- Better consider the practicalities of enforcement in fishery management plan development.
- Develop and implement an observer program.
- Incorporate monitoring and evaluation criteria into fishery management plans.
- Monitor and evaluate progress in meeting fishery management goals.
- Air and discuss concerns related to the use of individual fishing quotas to assist with capacity reduction.
- Develop conservation incentives.
- Consider marine protected areas as an ecological approach to management.