

Public Information Document

**POTENTIAL USE OF MARINE RESERVES
IN THE SOUTH ATLANTIC**

The purpose of this document is to inform the public of the Council's consideration of marine reserves (nearshore and/or offshore, natural and man-made), emphasizing the habitat and the species associated with the snapper grouper complex.

What are Marine Reserves?

Marine reserves are specific areas of marine environment managed for the primary purpose of aiding in the recovery of overfished stocks and to insure the persistence of healthy fish stocks, fisheries, and habitats.

What is the South Atlantic Fishery Management Council (SAFMC)?

The South Atlantic Fishery Management Council, headquartered in Charleston, S.C., is responsible for the conservation and management of fish stocks within the federal 200-mile limit (often referred to as the Exclusive Economic Zone or EEZ) off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West.

Congress established the Council along with seven other regional fishery management councils with the passage of the Magnuson Fishery Conservation and Management Act (now called the Magnuson- Stevens Act) in 1976.

The Council's membership is a balance of commercial and recreational fishermen, marine scientists, and state and federal fisheries managers, who combine their knowledge to prepare Fishery Management Plans (FMPs) to manage the living marine resources within the South Atlantic region. Fishery Management Plans are prepared through a deliberative planning process that includes

public input provided by fishermen and other persons concerned with management of these resources.

Council Members serve on committees which address issues specific to certain species or Council affairs. The Marine Reserves Committee was established in 1997 in response to the growing realization of the potential utility of marine reserves as a fishery management tool.

The Council established a Marine Reserves Advisory Panel in 1999 that is made up of recreational and commercial fishermen, environmentalists, and other interested members of the public to advise the Council. Appendix A contains a list of phone numbers and addresses of Council Members and of Marine Reserves Advisory Panel Members.



What is the history of Marine Reserves in the South Atlantic?

1990 - The potential for using marine reserves within the snapper grouper fishery first originated with the Council's Snapper Grouper Plan Development Team (PDT). This technical group prepared a report (April 1990) entitled "The Potential of Marine Fishery Reserves for Reef Fish Management in the U.S. South Atlantic." The Plan Development Team offered this approach because they believed it was the only viable option for maintaining optimum size, age, and genetic structure of slow growing, long-lived species over the long-term. The Council received an extensive briefing on marine reserves at the February 1990 Council meeting. This provided an opportunity for the Council to discuss marine reserves as a concept and to hear about experiences with marine reserves in other parts of the world.

1992 - Marine reserves were initially considered as a possible option in early discussions on Amendment 4 to the Snapper Grouper Fishery Management Plan, however the Council determined the reserve concept should be addressed separately and scheduled scoping meetings in each of the states. During 1992 the Council held scoping meetings. Scoping meetings are less formal than public hearings and occur prior to the Council taking any position on a management issue. When the Council is considering the need for management, scoping meetings provide an opportunity for members of the public to make suggestions BEFORE the Council has made any decisions.

1993 - During the 1992 scoping process support for and against the concept surfaced. The Council reviewed the scoping information at the January 1993 meeting and decided to (1) recommend to National Marine Fisheries Service that they convene a Scientific Review Panel to review the concept of Marine Reserves and (2) drop the consideration of marine reserve concept at that time.

1994 - The previously designated *Oculina* Bank Habitat Area of Particular Concern (HAPC) off Ft. Pierce in eastern-central Florida was declared the Experimental *Oculina* Research Reserve (EORR). This area, measuring 4 X 23 nautical miles with depths between 30 and 75 fathoms, was closed to bottom fishing for a period of 10 years to allow for scientific studies in a closed area. The 10 year "sunset" was specified to ensure establishment of a proper research and evaluation program. In 1995, the closure was extended to include all anchoring within the boundaries of the experimental closed area. The area was closed to bottom fishing to enhance stock stability and increase recruitment by providing an area where deep water species (snowy grouper, golden tilefish, speckled hind and warsaw, misty and yellowedge groupers) can grow and reproduce without being subjected to fishing mortality. Fishing mortality results in severe reductions in numbers of males, and altered size and age structure. This effect is magnified when fishing in areas where these groupers gather for spawning. Such spawning aggregations have been observed in the *Oculina* Habitat Area of Particular Concern.

1995 - A scientific review of the 1990 Snapper Grouper Plan Development Team report was completed by the Scientific Review Panel as requested by the Council. The panel consisted of international experts with different experience in fishery science, marine reserves, ecology, fish genetics, sociology, and economics.

The Scientific Review Panel concluded that properly designed marine reserves in combination with other management measures can be an effective management tool for reef fish resources in the U.S. South Atlantic region subject to the following conditions: (a) biological, ecological, social, and economic objectives of the reserves are clearly specified; (b) the relative biological, ecological, and economic impacts of reserves in the context of other fishery management measures have been estimated for various constituents; and (c) the development of marine reserve proposals proceed with the involvement of all constituencies and stakeholders.

Also the scientific review panel concluded that recognizing the alarming declines in stocks of key fishery species, the panel would urge that reserve options be considered immediately as part of a comprehensive fisheries management plan to prevent irreversible loss to species and fisheries.

1997 - In further developing Snapper Grouper Amendment 8 (and later Amendment 9), the Council realized that severe impacts would be felt by fishermen if necessary percentage reductions in catches of overfished species were imposed to achieve the mandated fishery management goals. Marine reserves once again surfaced as a potential alternative to fisheries closures.

Also in 1997 the Council accepted portions of the final Management Plan to the Florida Keys National Marine Sanctuary that designate one larger reserve that extends into the Council's jurisdiction and 12 small "preservation areas" that also function as marine reserves. These areas are being evaluated and will be reexamined at a five year review.

1998 - After deciding to reconsider the possibilities of marine reserves, the Council proceeded to take steps to initiate a fact-finding process using the Marine Reserves Committee and the Advisory Panel.

1999 - In May 1999, the Marine Reserves Advisory Panel unanimously passed a motion confirming that the Panel believes there is potential in using marine reserves as a fishery management tool.

GOAL

Develop the concept of marine reserves to:

- Supplement fishery management practices, thereby providing a buffer or insurance against overfishing and directly increasing spawning stock biomass and providing potential alternatives to fisheries closures;
- Manage the ecosystem as a whole, thereby providing a buffer against fishery collapse caused by environmental change, or unexpected natural events or events resulting from human activity;
- Protect, restore and improve Essential Fish Habitat (EFH) and EFH - Habitat Area of Particular Concern HAPCs; and
- Provide areas to serve as a benchmark for management trials or experiments and to improve scientific understanding of species under management.



Why Consider Marine Reserves?

Faced with fishery closures for individual species, and with further extreme gear or quota reductions, the Council reinitiated the question of using marine reserves as a fishery management tool. In 1997 and 1998, when the Council amended the Snapper Grouper Fishery Management Plan marine reserves were included as a discussion item for the purpose of evaluating them as a long-term approach to restoring and maintaining the health of the snapper grouper resource. Although marine reserves were not proposed at that time, a number of realizations surfaced including:



Traditional fishery management practices aren't working to achieve all the Council's objectives and mandates, and marine reserves may be useful to supplement traditional methods.

1. The snapper grouper fishery is a multi-species fishery and often times when single-species management plans are applied they do not work. Many fish that are prohibited or restricted are still being caught and killed. Even if released alive they cannot survive. Traditional management measures such as minimum sizes, quotas, and closure for individual species don't work if the species continues to be caught and killed as bycatch.
2. The status of most reef fish stocks is unknown in the southeastern United States, and stock information is available for only 22 out of 73 reef fish species in the snapper grouper complex. This lack of information makes management more difficult.
3. In addition to being very diverse, reef fishes have complex life histories that make them more susceptible to being overfished. Certain reef fishes change sex at some point in their life. When those species are overfished it changes the ratio of males to females within the population. Many of them are very large (a jewfish can reach 700 pounds), grow slowly, are long lived, and mature late in life. It takes a long time to replace a large, old grouper. Because these fish mature late in life, they often reach marketable size before they have matured and spawned for the first time. Fishes that live long have evolved this behavior to survive years of poor environmental conditions which limit survival of young fish. They have the genetic makeup that insures survival of the species, and by spawning late in life they pass these survival genes along to the next generation. Removing these fish before they are mature results in fish that spawn at a smaller size contributing to the gene pool of the species, which leads to undesirable genetic traits.

Fishes produce eggs in proportion to their body size. A red snapper that is 24 inches long produces as many eggs as 212 red snappers that are 17 inches long. Traditional fishery management plans use minimum sizes, which allow fish to mature and spawn one or more times before being caught. However this practice (and the desire by fishermen to catch large fishes) results in the biggest genetically fit individuals, which produce the most eggs, being removed from the population.

4. For gag, red porgy, and vermilion snapper to achieve optimum yield the necessary percentage reductions in fishing mortality exceed 66%; for black sea bass the reduction is 56%. Recognizing the severe impact such reductions would have on fishermen, and the potential for similar reductions on other species, the long term solution may require use of area closures to achieve some of the necessary reduction in fishing mortality.
5. The worldwide demand for fish has increased dramatically in the last several decades, primarily because of overpopulation but also because of per-capita increases in consumption. In addition, an increased ability to locate and capture fish both, recreationally and commercially, through advances in fishing technology (GPS, loran, and electronic fish finders) has increased fishing

pressure. Coastal growth coupled with the advent of better navigational/locational electronics, more fuel efficient engines, more disposable income such that more and more people can afford bigger boats and go farther offshore, have made reef fishes everywhere more accessible to fishing pressure.

6. Many species form spawning aggregations on shelf-edge reefs, and aggregations are predicable and easily exploited. Fishing of spawning aggregations has also been implicated in the declining male to female sex ratios of gag and scamp in the South Atlantic. Such losses may negatively affect reproductive success. No management plans currently in effect are designed to preserve the size, age, social structure, or the natural sex ratios of reef fish stocks.



The concept of a marine reserve will address management of the ecosystem as a whole, much like terrestrial reserves and national park systems are used to manage forest and other ecosystems.

1. Besides protecting stocks, permanent closed areas also protect physical habitat, age structure, biodiversity and genetic diversity of the stock, and they produce a natural balance of species and community structure within the ecosystem. Protection of habitat is important because even greatly reduced fishing mortalities cannot totally compensate for habitat degradation caused by harmful nonfishing and fishing practices.

2. A marine reserve may work in the same way as discovering a virgin wreck loaded with fish and no one being able to disturb it. Instead of fishing the wreck out it would instead be set aside much like a preserve on land. It's hoped that the abundance of sealife, plantlife, and habitat in the reserve will benefit outlying waters by fish having a safe haven, with some fish eventually moving out of reserves into neighboring open waters. Also, fish eggs carried to new areas by ocean currents may produce more sealife outside the reserve too. In this manner, it's hoped that reserves can serve as "insurance policies" if fish populations decline elsewhere, and help deter collapses of certain species.



Marine reserves will protect, restore, and improve Essential Fish Habitat and Essential Fish Habitat –Habitat Areas of Particular Concern. The Council has mandates to protect Essential Fish Habitat, and has established an Essential Fish Habitat –Habitat Areas of Particular Concern to initiate the process.

1. Essential fish habitat for snapper-grouper species includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 600 feet (but to at least 2000 feet for wreckfish) where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including

Sargassum, required for larval survival and growth up to and including settlement. In addition the Gulf Stream is an essential fish habitat because it provides a mechanism to disperse snapper grouper larvae. For specific life stages of estuarine dependent and nearshore snapper-grouper species, essential fish habitat includes areas inshore of the 100-foot contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks; unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom.

2. Areas which meet the criteria for essential fish habitat-habitat areas of particular concern (EFH-HAPCs) for species in the snapper-grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; nearshore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and Council-designated Artificial Reef Special Management Zones (SMZs).



At What Point Should the Council Consider Marine Reserves?

The following is a list of some criteria or questions stakeholders may ask when evaluating whether the concept of marine reserves would benefit management of the South Atlantic fisheries resources:

• ***Is there a problem with the fishery or a species? For example:***

1. Are fish stocks seriously depleted relative to adopted fishery management goals?
2. Is the Catch Per Unit Effort in long-term decline?
3. Is there a benefit in providing protection for vulnerable species in a multi-species fishery?
4. Is there evidence of serious disruption of important population characteristics such as size-frequency distribution, sex ratios, and genetic structure?
5. Are known spawning aggregates at risk?
6. Do fish size and abundance assessments show long-term signs of decline?
7. Are current fisheries management practices insufficient to meet the desired fishery management goals?
8. Are further traditional management regimes likely to become overly restrictive to sustain a fishery?
9. Are there other mechanisms available to sufficiently manage EFH and EFH- HAPC's, especially considering all stages of life history?
10. Are by-catch losses severely impacting the fisheries?
11. Would marine reserves address problems and /or opportunities that can not be addressed as well using other fishery management methods?

- ***Are there new opportunities that can be realized with the use of marine reserves? For example;***
 1. Would a marine reserve be beneficial for protecting species biodiversity?
 2. Is it desirable to consider all possible tools for fisheries management?
 3. Is it desirable, and would a marine reserve contribute, to provide an “insurance policy” against unknown and future impacts?
 4. Is it desirable, and would a marine reserve contribute, to protect and enhance marine ecosystem function?
 5. Is it desirable, and would a marine reserve contribute, to provide a benchmark for scientific understanding of species under management?
 6. Is it desirable, and would a marine reserve contribute, to establish a research area to study fishing gear and other use impacts?
 7. Is it desirable, and would a marine reserve contribute, to provide a year round protection to a spawning aggregation site?
 8. Would a marine reserve provide improved protection to habitats which are disproportionately important in sustaining or rebuilding multiple species (ie., “cluster idea”)?
 9. Would a marine reserve provide an important scientific, policy, and establishment model for other similar fisheries and marine ecosystems?
 10. Would a marine reserve serve a key role in an ecosystem-based approach to management?
 11. Would a marine reserve ease enforceability of regulations?
 12. Would there be potential benefits to fisheries resources under the management of other national, state, and international efforts?

Can marine reserves help the Council meet its responsibility of conservation and management of fish stocks? For example:

1. Can marine reserves contribute significantly to fulfilling the Council's responsibility as trustees to the American public on sustaining fisheries, including preventing overfishing while achieving, on a continuing basis, the optimum yield of South Atlantic fisheries?
2. Can marine reserves contribute significantly to fulfilling the Council's responsibility as trustees to the American public on meeting the other obligations of the National Standards for Fisheries Conservation and

- Management, including:
- A. rebuilding overfished stocks;
 - B. basing management on the best scientific information available;
 - C. managing stocks of fish as a unit;
 - D. not discriminating between residents of different states;
 - E. promoting efficiency in utilizing fishery resources;
 - F. minimizing costs and avoiding unnecessary duplication;
 - G. minimizing by-catch;
 - H. promoting the safety of human life at sea; and
 - I. addressing traditional communities.

Other Considerations:

1. Do the resources exist to properly enforce a marine reserve?
2. Do the benefits of marine reserves outweigh the costs?
3. Would the economic impacts of a marine reserve be too great?
4. Would the social impacts of a marine reserve be too great?



What's the next step with the marine reserve concept?

- Informal educational meetings by Council and Staff through January and February 2000.

- Series of scoping meetings in mid 2000 for public input on whether the concept of marine reserves has merit as a fishery management tool. (written comments will also be accepted).

- Based on the 1992 scoping process, the workshop, Advisory Panels and Scientific & Statistical Committee input, and the mid-2000 scoping process, the Committee and Council by December 2000 will decide whether or not the concept of marine reserves should be used as a fishery management tool in the South Atlantic to enhance the biomass of resources and provide greater biodiversity within areas under their management authority.

This decision will determine whether or not this process goes any further into the development of Marine Reserves.

- IF the Committee and Council decide the concept of Marine Reserves should be used as a fishery management tool, then an additional round of scoping meetings will be held in 2001 to specifically address any factors that should be taken into consideration if proposing an area as a potential Marine Reserve.

The Marine Reserve Advisory Panel agrees that the following factors should be considered if the Council decides to move forward into an additional round of scoping and the development of Marine Reserves in the South Atlantic: They are presented in no particular order, however the Council is requesting the public to comment on the importance of these criteria.

- measurable goals
- biodiversity and habitat
- fisheries sustainability
- life cycles
- monitoring
- oceanographic setting
- urgency and degree of threat
- education
- timeframes to evaluate results
- research needs / opportunities
- regional considerations
- social acceptance
- legal mandates
- spawning areas
- socioeconomic impacts
- size of area
- enforcement/compliance
- allowable activities
- location
- safety
- public interest in any site
- costs to implement and maintain
- scientific basis
- timing for implementation
- geography
- potential for enhancement/restoration

- If the Committee and Council decide to continue the process after the second round of scoping meetings, Draft Fishery Management Plan(s) or Comprehensive amendments will be developed and public hearings will be held in late 2001 or early 2002.

What other groups or agencies are currently discussing marine reserves or closed areas?

In 1990, Congress established the Florida Keys National Marine Sanctuary which currently has existing and proposed marine reserves for the Florida Keys. The Council has expressed support for a proposed Sanctuary reserve in the Gulf Council's jurisdiction at the Dry Tortugas. For more information on the Florida Keys National Marine Sanctuary contact Billy Causey. For information on the Council's interaction with the Florida Keys National Marine Sanctuary contact Gregg Waugh at (843)571-4366.

In 1997, President Clinton signed Executive Order 13089 on Coral Reefs, establishing multi-agency Task Force to direct coral reef conservation in the United States. This Task Force is exploring recommendations for establishing marine reserves to protect coral ecosystems. For more information contact: the NOAA Public Affairs office at (202) 482-6090 or the Department of the Interior at (202) 501-4633.

In 1999, the process to review and evaluate the management plan for Gray's Reef National Marine Sanctuary began. Scoping meetings are being held by Sanctuary personnel to gain the public's suggestions on potential changes. For more information on Gray's Reef contact Becky Shortland at (912) 598-2381.

Recognizing the need to coordinate information presented to the public, the South Atlantic Council is evaluating a Memorandum of Understanding with Gray's Reef to facilitate the exchange of information, advice, and technical assistance. For information on the Council and cooperation with Gray's Reef contact Gregg Waugh at (843) 571-4366. For information on informal meetings contact Kerry O'Malley or Kim Iverson at (843) 571-4366.

APPENDIX A
South Atlantic Fishery Management Council
1999-2000 Membership

The names of the Council Members who serve on the Marine Reserves Committee appear in bold.

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APPENDIX B

The Marine Reserve Advisory Panel agrees that the following factors should be considered if the Council decides to move forward into an additional round of scoping and the development of Marine Reserves in the South Atlantic: They are presented in no particular order, however the Council is requesting the public to comment on the importance of these criteria. Please rank the following factors, tear this page off and give it to a Council staff member or mail it to: South Atlantic Fishery Management Council, 1 Southpark Circle, Suite 306, Charleston, SC 29407.

- | | |
|---|--|
| <input type="checkbox"/> measurable goals | <input type="checkbox"/> spawning areas |
| <input type="checkbox"/> biodiversity and habitat | <input type="checkbox"/> socioeconomic impacts |
| <input type="checkbox"/> fisheries sustainability | <input type="checkbox"/> size of area |
| <input type="checkbox"/> life cycles | <input type="checkbox"/> enforcement/compliance |
| <input type="checkbox"/> monitoring | <input type="checkbox"/> allowable activities |
| <input type="checkbox"/> oceanographic setting | <input type="checkbox"/> location |
| <input type="checkbox"/> urgency and degree of threat | <input type="checkbox"/> safety |
| <input type="checkbox"/> education | <input type="checkbox"/> public interest in any site |
| <input type="checkbox"/> timeframes to evaluate results | <input type="checkbox"/> costs to implement and maintain |
| <input type="checkbox"/> research needs / opportunities | <input type="checkbox"/> scientific basis |
| <input type="checkbox"/> regional considerations | <input type="checkbox"/> timing for implementation |
| <input type="checkbox"/> social acceptance | <input type="checkbox"/> geography |
| <input type="checkbox"/> legal mandates | <input type="checkbox"/> potential for enhancement/restoration |