

**Team Comments on the Draft Amendment 14
(January 2006 version)**

SAFMC Comments

To: Kerry O'Malley and Julie Weeder
From: Rick DeVictor
Date: January 27, 2006

1. The Council decision to not consider other “Types” of MPAs, including Type I MPAs, should be in the rejected alternatives appendix.
2. I believe that we should expand the purpose and need to include objectives used in the site selection by the Council. Below is draft language added to the original purpose and need that could be used. Section 2 could compare the degree that each alternative achieves each objective. The Council should review this section, mainly the objectives, for accuracy at the March Council meeting.

Introduction

Purpose and need

Recent stock assessments indicate that snowy grouper and golden tilefish are experiencing overfishing (NMFS 2005b). Snowy grouper is considered overfished (NMFS 2005b). While we do not know the status of all deepwater snapper grouper species, it is a safe presumption based on the data we do have that the size, age, and genetic structure of all the species in this complex has been altered from fishing pressure.

Data deficiencies make it difficult for fishery scientists and managers to develop management measures that can be trusted to sustain stocks over time with a high degree of certainty, while attempting to minimize to the extent practicable the adverse socioeconomic impacts of management measures on fishing communities. Successful fishery management requires the ability to estimate the maximum amount of fish that can be sustained over time to balance between these conservation and wise-use mandates.

The purpose of the proposed implementation of the MPAs is to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper

species (speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Marine protected areas (MPAs) are the only fishery management tool that can provide an area for fish to reach their natural size and age.

When considering the location, size, and orientation of the MPAs, the Council considered specific objectives in order to achieve the three goals of maximizing the biological and minimizing the social and economic effects while meeting the needs of enforcement. The objectives are statements of a desired outcome in terms of MPA location, size, and orientation from biological, social and economic, and enforcement perspectives. The objectives were developed through discussions among the various interest groups, advisory panels (e.g. snapper grouper, law enforcement), scientific committees, and the public. It is important to note that the MPAs considered do not need to fully meet each objective in order to be considered by the Council. Rather, the objectives serve as desired attributes of the MPAs and/or processes used to determine the sites. The alternative comparison summaries in Section 2 of this amendment summarize the degree that each proposed site meets each objective.

Goal 1: Maximize biological effects

Objective A. *Protect some habitat known to support deepwater snapper and grouper species. Utilize hardbottom locations to provide locations suitable to satisfy the need for these MPAs.* The Southeast Area Monitoring and Assessment Program (SEAMAP) has surveyed bottom habitat type. This information, in part, was used to site the MPAs in order to maximize the biological benefits.

Objective B. *Protect some areas where spawning activity has been recorded.* The Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) has noted the sites where fish were caught in spawning condition. This information, in part, was used to site the MPAs in order to maximize the biological benefits.

Objective C. *Utilize anecdotal knowledge, in part, to provide locations suitable to satisfy the need for these MPAs.* As fishery independent data is often scarce and fishery dependent information is collected on a large spatial scale, the Council frequently relied on local knowledge of fishermen and state agency personnel to propose suitable locations. Information on spawning locations of deepwater snapper and grouper species is also limited and the utilization of anecdotal knowledge is appropriate.

Goal 2: Minimize social and economic effects

Objective D. *Orient the MPAs in a manner that give consideration to the way that the fishermen fish.* Many commercial fishermen fish along the continental shelf break parallel to the shoreline. Many commercial fishermen prefer closed areas that are parallel to the break in order to minimize disruption to fishing activity.

Objective E. *Avoid closing fishing areas that are significantly popular among fishermen.* Public input during the scoping process and the public information public hearings revealed that closure of certain sites would generate intense public disapproval. The Council realized that the implementation of those sites would create a degree of controversy that would significantly impede the implementation of the closures and compliance once implemented. Following the public input, the Council implemented a “bottom up” process whereas stakeholders proposed sites that would still achieve the biological objectives. As an example, the Council worked with fishermen in the Florida Keys following the Council’s proposed placement of an MPA on the popular location referred to as the “Islamorada Hump”. This proposal generated intense controversy due to the popularity of fishing for (list popular species) at this site. The Council worked with the local fishing community to propose a nearby site that would achieve the biological objectives (of the MPA designation) but would not have the degree of controversy as the original proposal.

Objective F. *Consider boater safety when designating proposed closed areas.* The Council avoided the detailed consideration of sites that would significantly comprise boater safety. Overly large sites and the placement of sites adjacent to major fishing ports were avoided as both would hinder the return to port during adverse weather.

Goal 3: Maximize MPA enforceability

Objective G. *Consider the seven criteria from the law enforcement AP’s report when determining suitable MPA sites.* The Council’s Law Enforcement Advisory Panel, in 1998, submitted a report (Appendix B) that outlined criteria that should be considering when determining attributes of MPA. These included: 1) A marine reserve should be configured in a square or rectangle; 2) the bigger the better; 3) the boundaries should be delineated in latitude and longitude; 4) must be in an acceptable format to be included and identified on NOAA charts; 5) allowable activities in the marine reserve should be limited; 6) locate marine reserves away from highly populated areas; and, 7) provide for on-site enforcement capability. In order to maximize the efforts of law enforcement and fishermen compliance, the Council considered the criteria when developing the MPAs.

3. In general, the background information in Sections 4.1 appears to contain information that is not necessary. For example, I don’t see a need for the research recommendations to be in this section; especially since the same research recommendations are repeated later in Section 4 (page 2-243). And the specific preferred alternatives from 13C could probably be replaced by a statement that actions were taken in amendment 13C to end overfishing and summarized. The comment also applies to the mention of specific fishery assessment models and indices.

4. The text in the many of the legends are too small (habitat and MARMAP figures).

5. There may be studies measuring the beneficial biological effects of similar MPAs that could be used in predicting the effects from the implementation of these MPAs. For example, there may be information from the Madison/Swanson (115 nm²) and Steamboat Lumps Sites, both established in 2000. They are similar, though I believe these were sited to protect gag. If so, these studies could be used to expand the biological impacts beyond simply stating: “The long-term these management actions are intended to promote the optimum size, age, and genetic structure of snowy grouper”. We need to support this statement whenever we can. For example, strong site fidelity of large groupers could be used to support why the Council believes the MPAs will achieve these biological goals.

6. Table 4-14 on page 4-217 appears to be in the wrong section.

7. The Council needs to clarify if “Alternative Proposed at Public Hearing” off Florida should be an alternative considered in detail.

8. “It is unlikely that these management measures will have measurable short-term benefits or impacts due to the biology and life history characteristics of the species being protected by the MPAs.”

This statement needs clarification. We should clarify that these short-term benefits are immeasurable because they are too insignificant to be detected through scientific studies (if this is true). Though, the text should acknowledge that the beneficial short-term impacts to the snapper grouper populations in the sites do exist (e.g. fishing mortality for the deepwater species in these areas will immediately end upon implementation of the regulations).

9. I think that we need to include more detail in the environmental impacts section pertaining to indirect effects. For example, these sites will protect deepwater snapper and groupers that might otherwise be targeted. As a result, there will be expected effects on prey species. There should also be some discussion on the expected reduction in the anticipated beneficial biological effects from “edge-effect” fishing behavior. Also, what are the expected effects to the surrounding areas outside the MPA from the emigration of fish and larvae?

NMFS Comments on draft Amendment 14¹ – 1/31/06

It is clear considerable effort was spent revising Amendment 14 based on comments on the earlier draft.

In general, the amendment needs more analysis to explicitly explain: 1. What all the specific objectives are; 2. How we evaluated the total set of MPAs, with details on the biological data and analyses considered; 3. How we pared down and determined the size and placement of the eight MPAs, in particular what social and economic input were considered; 4. The scientific rationale for the choice of MPA sites, given the available species occurrence and habitat type data; and 5. What types of monitoring will be instituted to determine whether the MPAs are ultimately successful.

Section 1: Introduction

1. Suggest clearly explaining all Council objectives early on in the document. Such information is critical to understanding why the Council views the current list of actions/alternatives as reasonable, even though sites under consideration aren't necessarily located in the most productive deepwater snapper grouper areas or over the best deep-water snapper grouper habitat. Specifically, we suggest beginning Section 1.0 with "Background and Overview" text, which provides some general information on MPAs and explains the origin and evolution of the Council's MPA proposal. This discussion should explain how MPA actions/alternatives were originally defined (i.e. it appears as though staff initially presented 40 MPA alternatives to the public and described four MPA types), and how the original list of actions/alternatives has been revised and refined over time (e.g., it appears as though Council objectives have been revised and refined over time in response to changing management needs and stakeholder feedback). The text in Section 4.0, located under the title "MPAs as a management tool," would be well placed in this new section, as would information in the source file entitled "Historical Overview of South Atlantic Fishery Management Council's MPA Related Activities: 1990-2005." We also found useful background text in the Informational Public Hearing Document dated January 2004. This information, as well as other information gleaned from the Source Document, needs to be summarized and included in the EIS so the reader can get the point without going to an outside document.
2. Suggest expanding upon the text of the Purpose and Need statement to help the reader better understand both the problem statement (need for action) and the purpose (objectives) of the Council's MPA proposal. First, begin with text explaining the Snapper Grouper Fishery Management Unit contains X number of deepwater species, and the Council defines deepwater species as those occurring in depths ranging from X to X, etc. Second, describe the need for

¹ Based on file "Snapper Grouper Amendment 14 1.19.06(1st team version).doc", 24752 KB, received on CD 1/20/06.

action, not as “to implement MPAs” (p. xxi), but rather as the reason the Council concluded some type of action was needed (e.g., poor status of many deepwater snapper grouper species). Third, list the factors contributing to the problem (e.g., life history characteristics which make them particularly vulnerable to fishing mortality, habitat loss/degradation, high discard mortality rates, etc.). Fourth, explain how the Council has relied on more traditional measures to manage fishing mortality in the past, and scientific and anecdotal information derived from numerous scoping meetings and MPA workshops organized/sponsored by the Council over the last decade suggests MPAs are capable of providing different/additional types of protections. Finally, we would describe the purpose for action, not just as “to use MPAs as a management tool,” but rather something like, “to explore the potential of a number of alternative MPA sites, identified through a collaborative process, for improving the status of deepwater snapper grouper populations by protecting portions of these populations and their habitat from fishing mortality.” To benefit affected interest groups, list here the eight general locations where the Council is considering implementing MPAs (i.e. Snowy Grouper Wreck, Northern South Carolina, Central South Carolina, Georgia, North Florida, Sea Bass Rocks, East Hump/Un-named Hump, Charleston Deep Reef), and indicate the Council is considering enforcing MPAs using a vessel monitoring system (VMS) program.

3. Suggest expanding the text of the purpose and need statement to include mid-shelf snapper grouper species (e.g., vermilion snapper, red porgy, gag, scamp, red snapper, black sea bass, and others) in addition to deepwater species. Based on the information provided in this draft, it is more likely we can ultimately demonstrate closing the area might have a beneficial effect on some mid-depth species than on the deeper species, since we have far better data showing the presence and abundance of mid-depth species than data showing presence and abundance of deep water species. It seems most of the habitat in these proposed MPAs is shelf edge habitat. Studies show there is not much deep-water habitat in the proposed MPAS (see comments on Affected Environment). Expanding the purpose and need to include mid-shelf species would greatly strengthen the rationale for these MPAs. We could address the beneficial effects these MPAs would have on many species such as red porgy, gag, scamp, black sea bass, vermilion snapper, red snapper, and others. The beneficial effects of these proposed MPAs for mid-shelf species probably outweigh those for deep-water species. To strengthen the discussion of benefits to deep-water species, we could discuss the use of these shelf edge locations as nursery areas for deep-water species, which migrate to deeper water with ontogeny (speckled hind, snowy grouper, and warsaw grouper). We could talk about ecosystem overfishing and how the MPAs will protect community structure in these shelf edge locations where MARMAP has documented the occurrence of shallower species along shelf edge areas.
4. Recommend greater caution about stating conclusions related to the expected outcome/benefits of proposed MPAs here and in subsequent analytical

sections. There are no fishery independent data on species abundance and diversity within three of the MPAs, and the success of individual MPAs will depend on a number of factors, many of which are beyond our control. MPAs would provide greater biological benefits if they were designed without taking into account socioeconomic considerations related to location, size, and type. However, this is why it is important we clearly explain protecting a portion of deepwater snapper grouper populations from fishing mortality is only one of multiple Council objectives.

Section 2: Alternatives

1. Suggest replacing text in ¶3 on page 2-1 describing the purpose of the Council's MPA proposal with text recognizing the Council's process and socioeconomic objectives; for example, something like, "The Council is evaluating in this amendment the potential of a number of alternative MPA sites identified through a collaborative process in improving the status of deepwater snapper grouper populations by protecting portions of these populations and their habitat from fishing mortality."
2. Suggest inclusion of an introductory paragraph before each action (Snowy Grouper Wreck, Northern South Carolina, Central South Carolina, etc.) here and in Section 4.0 explaining the general characteristics of the location leading to its inclusion as an action, and how each range of alternatives was defined. For example, it appears as though the actions (general location of sites) were defined based on anecdotal information on species occurrence and, sometimes, bottom habitat, but then alternative MPA boundaries within each general location were defined and refined based on socioeconomic considerations.
3. Suggest description and evaluation of the effects of each no action alternative before the action alternatives, here and in Section 4, in order to establish baseline (status quo) conditions before description of the potential environmental effects of the MPA alternatives.
4. Suggest inclusion of nm² information in the text of each MPA alternative.
5. The MPA "Charleston Deep Reef" would require establishment of an experimental artificial reef to introduce suitable habitat to the area. More information is needed about who would pay for this artificial reef and when it would be in place. If the state of South Carolina would pay, we need language to emphasize there would be no additional costs to the Council or to federal agencies from establishment of this artificial reef. The document should also include discussion of the possibility of delaying the implementation of this MPA until the artificial reef is in place. The reasoning for designation of this artificial reef as an MPA, rather than a special management zone like all the other artificial reefs in the South Atlantic, should be provided.

6. An action should be added with alternatives detailing who would pay for VMS system installation and operation. Without such an action, it is impossible to determine the effect of the action on fishermen or on the government, since we will not know who would pay.
7. The current VMS action/alternatives should be edited to clarify the VMS requirements would apply only to snapper grouper vessels (not to other types of vessels fishing in or transiting through the area).

Section 3: Affected Environment

1. 13C text is currently used as a placeholder for incomplete socio-economic discussions in this section. We suggest either replacing or deleting this text currently used as a placeholder for incomplete sections before we distribute a revised draft to the Council/public. Otherwise, readers could become confused and believe the 13C text/analyses refer to the proposed actions/alternatives in Amendment 14.
2. It is very important to describe in this section what we do and do not know about the physical/biological/ecological characteristics of the general locations, which are the focus of each action (e.g., Snowy Grouper Wreck, Northern South Carolina, Central South Carolina, etc.). This would be a good place to include MARMAP and anecdotal information on species occurrence, the habitat maps, etc., which will be used in analyzing the environmental effects of the alternatives.
3. Because many of the conclusions about the potential benefits of alternative MPA sites to snapper grouper populations are based on MARMAP data, it is important we include here a description of the MARMAP survey (e.g., sampling methodology, coverage, frequency, etc.).
4. Similarly, a thorough discussion of the SEAMAP data, including the various data sources contributing to it, is necessary since those data are used to discuss available habitat in the proposed sites. A table is needed which shows the percent of hard bottom habitat in each alternative MPA for each action, and the source of the SEAMAP data upon which each percentage is based. Although the current draft of Amendment 14 includes maps with squares indicating different types of habitat, which include a lot of useful information, these maps are hard to read when printed out in black and white and not magnified on a computer screen. In addition, these maps do not provide the specific percentage information, which would be most useful to readers.
5. A comprehensive discussion is needed of the landings data available, and why the Council does or does not consider it representative of landings in the sites evaluated. If it is not considered representative and therefore not used in the DEIS, whether it is the best available data should be discussed. This is where

discussion of the scale of the landings data compared to the scale of the proposed sites would occur. Perhaps discussion of the anecdotal information available from fishermen about each site, which is touched on in Section 2, could be elaborated upon here.

6. An abundance of data indicates the habitat protected by the proposed MPAs is more suitable for mid-shelf species than deep-water species, and this literature should be thoroughly discussed here. For example, Quattrini and Ross (In Review; Bulletin of Marine Science) did submersible work in the proposed Snowy Wreck MPA. They concluded hard bottom was scarce or lacking in this area and suggested the MPA be located elsewhere. In addition, SCDNR personnel have done submersible work in many of the proposed MPAs sites. MARMAP has made submersible dives in the areas described as Alternative 2 of the Northern South Carolina location; Alternative 1 of the Central South Carolina location; Alternative 2 of the Georgia site; Alternative 1 of the Northern Florida Location; and Alternative 2 of the Northern Florida Location. A summary can be found in a report prepared by Sedberry et al. (2004).
7. Other literature pertinent to the proposed MPAs and the species found there should also be reviewed in the document. Sedberry et al. (in press) shows the relationship between reef fish in spawning condition collected by the MARMAP program and the proposed MPAs. The Cooperative Research Program report by Harris and Stephen (2005) shows the degree of coincidence between locations where a fisherman captured different fish species and the proposed MPAs off South Carolina.
8. We suggest removing the discussion of the Oculina Bank HAPC biology, geography, and oceanography, since this area does not overlap with any of the proposed sites. Discussion of its relevance as a tool for protecting deepwater species in the South Atlantic could be helpful here. Otherwise, it could be discussed in the history of management in Section 1.0.

Section 4.0: Environmental Consequences

1. We suggest moving the background text in Section 4.1 describing the status of deepwater snapper grouper species to Section 3.0 (Affected Environment) because this information describes the environment, rather than the environmental consequences of the actions/alternatives.
2. We suggest moving the text located under the heading, “MPAs as a management tool” to the new “Background and Overview” section to help explain the origins of the Council’s MPA proposal. Edit the last sentence of paragraph 3 of this section as follows: “...to estimate the maximum yield that can be sustained over the long term to balance...”. We would edit the last sentence of paragraph 4 to read something like “...multi-species fishery. As a result, regulations intended to better conserve and manage one stock can have

unintended negative impacts on other stocks by affecting bycatch or the distribution of fishing effort.” Delete the second sentence of paragraph 9 related to the Council’s focus on Type 2 MPAs. We think it is better to highlight this decision in the next paragraph, which includes supporting rationale. We would tie the discussion about trolling back to Council objectives to protect a portion of deepwater snapper grouper populations (not all fish populations) from fishing mortality, increase stakeholder support for the Council’s proposal using a collaborative MPA design process, minimize socioeconomic impacts to the extent practicable, etc.

3. The current text describing the physical/biological/ecological impacts of alternative MPA sites should be more fully developed before we file the DEIS. We will need to describe/distinguish both direct and indirect effects of all alternatives, including the no action alternative, and should use references to support our conclusions, whenever possible. We think it is important to clearly acknowledge uncertainty about the benefits of proposed sites, particularly given compromises about size, location, and type resulting from the collaborative stakeholder process and competing biological/socioeconomic objectives. We do not want to give the public (many of whom are already skeptical) false expectations about what the MPAs can/will accomplish.
4. As previously noted, we suggest describing and analyzing the no action alternatives first to establish baseline conditions against which the effects of the action alternatives can be compared. For example, for Action 1 (Snowy Grouper Wreck), we should first explain the effects of allowing continued fishing for snapper grouper species in the general vicinity of the snowy grouper wreck. Then, we should describe the potential impacts of the proposed Snowy Grouper Wreck MPA on deepwater snapper grouper species, other snapper grouper species protected by a Type 2 MPA, other non-target species, habitat, etc.
5. Direct and indirect effects differ because the former occur at the same time and place as the action, while the latter occur later in time or are farther removed in distance. As a result, protective benefits afforded by proposed MPAs to non-deepwater snapper grouper species should still be considered direct effects, even though those species are not the focus of Amendment 14.
6. The tables summarizing presence/absence information are not very meaningful for analytical purposes without more detailed information on the MARMAP survey and on the frequency with which species have been collected in the proposed sites. For example, was one snowy grouper captured within the boundaries of Northern South Carolina A MPA Alternative 1 in 1986, or have ten snowies been captured, on average, in this location each year over the past ten years? We suggest summarizing density data in these tables, particularly because the density figures are difficult to read in color and almost impossible to read in black and white. We also should include in the

titles of figures and tables information indicating over what time period data used in the figures/tables were collected. There appear to be some disconnects between presence/absence data in the tables and density data in the figures. For example, Table 4-13 indicates snowy grouper, speckled hind, and blueline tilefish have been documented within Central South Carolina B MPA Alternative 1, but Figure 4-26 indicates only the speckled hind has been documented in the area. Additional text explaining maps and interpreting the data would be very helpful.

7. Instead of indicating the effects of all alternatives are beneficial “to the extent they protect” deepwater snapper grouper species, the analyses should provide the Council with information it can use to rank the alternatives in terms of which is most likely to provide the most biological/ecological benefits, given habitat and other conditions within the respective areas. Other important issues/effects to discuss in the physical/biological/ecological effects sections include: the depth ranges and habitat needs of the various deepwater species relative to those for the alternative MPA sites and, thus, the potential of species to occur in alternative sites; the migratory vs. sedentary characteristics of species thought to occur in the affected areas and how these impact the potential benefits of MPAs; the adverse effects of potential effort shifting; the potential impacts of the continued use of bottom longline gear within the MPAs by the shark fishery; and the impacts (if any) of the continued use of pelagic trolling gear within the MPAs.
8. A comprehensive discussion is needed of the concerns raised by law enforcement experts and advisors about enforcement of Type 1 vs. Type 2 MPAs, the need for VMS, and the characteristics of MPA boundaries, including buffer zones. Where the actions proposed do not agree with their recommendations, explanation of the reasoning behind the decision is needed before we file the DEIS.

Monitoring and Evaluation Plan

1. Initial and continued public buy-in for the proposed MPAs is somewhat contingent on ultimately demonstrating an effect on targeted fish populations. Therefore, a monitoring and evaluation plan should be considered in Amendment 14 modeled after that developed in Amendment 13A. If such a plan is not ultimately included in this amendment, rationale for its absence should be provided in the document since Amendment 13A included sunset and review provisions. As discussed below in comments on Appendix A, quite a few comments at public hearings on Amendment 14 questioned how we plan to evaluate the effectiveness of MPAs, and several people requested the Council consider sunset and/or review provisions. This plan should provide for baseline data collection, monitoring, and the option to change sites if it is determined there is little or no hard bottom in a proposed site.
2. There is very little baseline information on species occurrence and abundance

for some of the proposed sites. Therefore, monitoring the effectiveness of these MPAs for protecting target species would require an immediate survey of those selected sites which are currently unsurveyed. Such a survey would determine the pre-MPA condition, and subsequent monitoring at later dates would be needed to evaluate changes in condition.

Comments on the Environmental Consequences of Specific Actions

Action 1 (Snowy Grouper Wreck) –

1. We do not reference any MARMAP data here. Are there any available? If so, we should include. If not, we should explain that they do not exist.
2. We need to provide a source for the information indicating the proposed site was once a spawning aggregation site for snowy grouper (literature citation, or perhaps reference specific public hearing date...?)
3. We suggest rewording the sentence on page 4-206, line 4 to read “ However over the long-term these management actions are expected to promote the optimum size, age, and genetic structure of snowy grouper in the designated MPA.” These same changes to similar sentences are recommended for all actions.

Action 2 (Northern South Carolina) – It is unclear from the discussion whether just one or all three alternative MPA sites were previously heavily trawled by roller rigs and are now heavily impacted [delete references to “smurfville”]. It might help to consistently use one term, like location, to refer to the general area defined by the action (e.g., Snowy Grouper Wreck), and another term, like site, to refer to the area defined by a specific MPA alternative. The title of Figure 4-21 (and similar figures) should read “in and around the proposed...”. In addition, the titles of these figures should recognize the figures illustrate more than one proposed MPA. The text describing the meaning of asterisked text in the title of Table 4-12 is not necessary because the table does not include any asterisked text. The current discussion states public comments indicate these areas hold deepwater species, but we received comments to the contrary at the 2004 hearings. Public feedback should therefore be described as mixed, and noting MARMAP has documented deepwater snapper grouper species within the alternative MPA sites. In addition, was the ban on roller rig trawls intended to protect snapper grouper? Information from this may give some insights into the potential for success of the proposed MPA.

Action 5 (North Florida) – Text summarizing anecdotal information on the occurrence of deepwater snapper grouper species within North Florida MPA Alternatives 1 and 2 should be expanded to acknowledge MARMAP data documenting the occurrence of snowy grouper and speckled hind in both areas (Table 4-17). Any available MARMAP data relevant to the third alternative must be included before we file the DEIS.

Action 7 (East Hump/Un-named Hump) – We should include text explaining how this location came to be proposed, and summarize available data on species occurrence, habitat types, etc., within the proposed site. This information will be needed to evaluate the environmental consequences of the alternatives.

Action 8 (Charleston Deep Reef) –

1. We should include text explaining how this location came to be proposed, and why the Council is not considering alternative sites for an artificial reef MPA.
2. Additionally, how would this work? Who would build the reef, and when? Who would cover the costs? We probably should not state, “The Council is considering establishing an experimental artificial MPA to help study some of the questions surrounding MPAs”, unless we actually have a research plan.
3. We should reference the source(s) of statements like “However, sites previously created...have proven to be effective at building a population of snapper grouper species...”.
4. With respect to artificial reefs, there is always the issue of whether such structures merely “attract” or actually “create” fish populations. Has this issue been studied in the mentioned programs in South Carolina? It would be useful to have such a discussion here when evaluating the biological impacts of this proposed site.

Action 9 (VMS) – It appears as though part of the discussion section was accidentally deleted. With respect to biological impacts, the benefits of requiring VMS units on snapper grouper vessels would likely extend far beyond those associated with enforcing the Council’s MPA proposal.

Section 10.1 (Appendix A): Considered but Rejected Alternatives

1. Several alternatives/ideas raised by the public do not appear to be evaluated in the document or included in this appendix. For example, we should explain the Council’s rationale for eliminating from more detailed study alternative MPA types (Type 1 vs. Type 2). In addition, some people requested during the 2004 hearings the Council consider seasonal rather than area closures. Finally, others requested the Council include a provision requiring MPAs be reviewed for effectiveness no more than ten years after they are implemented, based on specific, measurable criteria.
2. It appears as though Option 4A belongs under the Category B options because it meets the Council’s biological objective, but does not meet the Council’s socioeconomic objective. Otherwise, we suggest editing the third sentence of paragraph A as follows to provide rationale for rejecting Option 4A: “...do not meet the Council’s criteria of protecting deepwater snapper grouper species with minimal socioeconomic impact”. We need to provide rationale for rejecting Option 2D. The discussion of Option 3D should note Amendment 13A extended the Oculina Reserve.

Literature cited in comments

Quattrini, A.M., and S.W. Ross. In Review. Fishes associated with North Carolina shelf edge hardbottoms and a proposed marine protected area. *Bulletin of Marine Science*.

Sedberry, G.R., O. Pahsuk, D.M. Wyanski, J.A. Stephen, and P. Weinbach. In Press. Spawning locations for Atlantic reef fishes off the Southeastern U.S. *Proc. Gulf Caribb. Fish.Inst.*

Sedberry, G.R., C.L. Cooksey, S.F. Crowe, J. Hyland, P.C. Jutte, C.M. Ralph and L.R. Sautter. 2004. Characterization of Deep Reef Habitat off the Southeastern U.S., with Particular Emphasis on Discovery, Exploration and Description of Reef Fish Spawning Sites. Final Report. Project Number: NA16RP2697.

Harris, P.J., and J. Stephen. Final Report Characterization of commercial reef fish catch and bycatch off the southeast coast of the United States. CRP Grant No. NA03NMF4540416.