Excerpts from System Management Plan for the Deepwater MPAs for LEAP

Executive Summary

The South Atlantic Fishery Management Council (Council) implemented Deepwater Marine Protected Areas (MPAs) in eight areas off Florida, Georgia, North Carolina, and South Carolina. The areas are known as Snowy Wreck (NC), Northern South Carolina (SC), Edisto (SC), Charleston Deep Artificial Reef (SC), Georgia (GA), North Florida (FL), St. Lucie Hump (FL), and East Hump (FL). The Council and its partners have developed this System Management Plan (SMP) for the Deepwater MPAs. The SMP serves as the framework for resource protection, research and monitoring, outreach, administration, and evaluation of the proposed areas. The intent is for researchers and managers, using the SMP as a guide, to employ adaptive-management techniques in studying and managing these sites; that is, a decision-making process that evolves over time with the goal to improve management through system monitoring.

The Council intended to protect protect a portion of the population and habitat of long-lived species (speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, and blueline tilefish) from directed fishing pressure. The protection should enable the deepwater species achieve a more natural sex ratio, size structure, and age structure. The Council recommended that, within the Deepwater MPAs, fishing for, possession of, and retention of 59 species of snappers and groupers be prohibited; however, harvest and possession of other species, such as dolphin, mackerel, and tuna, would be allowed. By prohibiting fishing for all snapper and grouper species in the area, bycatch and potential release mortality would be reduced.

The SMP includes goals and objectives to guide researchers and managers, background on Deepwater MPAs and existing knowledge gaps, management action items with strategies, potential methods to evaluate management effective, financial plan, timeline, and site characterizations for each proposed Deepwater MPA as well as data collected in the area.

Management Action Items

The SMP contains management action items and strategies to achieve those items. These items are actions that can be taken by partners such as managers, law enforcement personnel, scientists, and education and outreach specialists to achieve goals and objectives of the Deepwater MPAs. Action items were created and separated into four different groups: research and monitoring, outreach and education, resource protection, and administrative. The Research and Monitoring Action Items were developed to describe population demographics, compare densities of deepwater snapper grouper species inside and outside MPAs, map with multibeam the Deepwater MPAs, and gather socioeconomic information. The Outreach and Education Action Items were developed to inform the public on the regulations and purpose for the protected areas and promote compliance, partnership, and ownership of the Deepwater MPAs. The Resource Protection Action Items were developed to monitor compliance with Deepwater MPA regulations, train officers, coordinate and improve enforcement, and report enforcement activities. Finally, Administrative Action Items were created for the development of the SMP and an advisory panel to review draft evaluation reports.

Management Effectiveness Evaluation

The output from the completed and on-going action items will be included in regular evaluations of the Deepwater MPAs, which are needed to ensure effective management. The evaluation of management effectiveness is separated into three categories: biophysical, socioeconomic, and governance indicators. The biophysical indicators of management effectiveness include potential metrics that could be used to evaluate the biological aspects of Deepwater MPAs including number of fish observed, size and age of fish observed, and amount of area mapped using multibeam. The socioeconomic indicators include potential metrics to evaluate the social and economic aspects including collect social and economic data and initiate a citizen science program. The governance indicators include potential metrics to evaluate the Deepwater MPAs through the SMP and enforcement. Through evaluation of the indicators, partners can shift efforts to actions items that will best ensure protection of important spawning habitats and, if needed, changes to management of Deepwater MPAs can be recommended by the SMP Advisory Panel, which will be appointed by the Council. The SMP Advisory Panel will be responsible for reviewing a rough draft of the Deepwater MPAs Evaluation Plan and will provide suggestions to the Council regarding management recommendations.

Financial Plan and Timeline

A financial plan and timeline was developed for documenting estimated costs and tracking progress to accomplish action items.

Site Characterization

The SMP contains detailed information about the Deepwater MPAs. The Deepwater MPA encompass approximately 529 square miles of hard-bottom, live bottom, and artificial reefs located in federal waters. Fishery-independent research has been conducted in the most of the proposed areas and collected biological and bathymetric data are included. Speckled hind, snowy grouper, warsaw grouper, and blueline tilefish have been observed in the Snowy Wreck MPA. Speckled hind, yellowedge grouper, snowy grouper, and blueline tilefish have been observed in the North South Carolina MPA. Speckled hind, snowy grouper, and warsaw grouper have been observed in the Edisto MPA. Two months after the Charleston Deep Artificial Reef was created, one snowy grouper was observed in the MPA. Speckled hind and snowy grouper have been observed in the North Florida MPA. Snowy grouper and blueline tilefish have been observed in the East Hump MPA. Fishery-independent biological data have not been collected for Georgia MPA.

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Resource Protection Action Items

Because the Council chose to allow certain fishing activities (Type 2 protected area) and transit through Deepwater MPAs, enforcement will be very challenging. The LEAP advised the Council throughout the entire process of developing MPAs and created a list of recommendations (SAFMC 2005). The Council followed those recommendations as closely as possible while balancing the biological, social, and economic objectives and impacts of MPAs.

Law enforcement partners provided information on the enforceability of Spawning SMZs and available assets that could be used to monitor them in 2015. Two very large obstacles continue to limit enforcement of some Deepwater MPAs: (1) distance from shore for the majority of Deepwater MPAs and

(2) Type 2 designation, which allows certain fishing activities to take place. Consequently, occasional flyovers by enforcement aircraft, drone, or satellite are not effective for enforcing regulations; therefore, an on-site enforcement presence is necessary in order to determine whether the fishing activity is lawful or not. Despite obstacles, FWC revised the enforceability rating of the Deepwater MPAs off Florida from a Low rating (in Amendment 14) to a High rating (**Table 3.4.1**). Off North Carolina, the Snowy Grouper Wreck MPA was rated as Moderate by the USCG. The remaining MPAs continue to have a Low enforceability rating as originally considered in Amendment 14. The current ratings were based on the same criteria as in Amendment 14:

*"A **"HIGH"** rating means that the area is easily accessible with the assets and personnel already in place. Such an area may already be patrolled and would not require additional assets. Additional funding **may** be required to maintain adequate enforcement patrols.*

*"A **"MODERATE"** rating indicates that with some additional assets, or the relocation of existing assets, patrols could be conducted from time to time and during targeted details. Additional funding **will likely** be required to increase the ability rating to "HIGH".*

*"A **"LOW"** rating means that patrols of the area would only occur during an organized enforcement detail with Federal partners such as NMFS or USCG. The States do not have the assets or personnel with the proper training to patrol the area. Additional funding will be **essential** to increase the ability rating."* (SAFMC 2007)

The available assets to monitor Deepwater MPAs vary by state and agency. NCDEQ currently has one vessel capable of traveling to the Snowy Wreck; however funding for that vessel is currently under review. FWC has five high-speed offshore vessels on the east coast ranging in size from 33 to 40 foot and aircraft for offshore patrols. The recent acquisition of new vessels with soft collars allows FWC to cover a larger offshore area and to conduct inspections in various sea states. NOAA OLE has a 24 foot Rigid Hull Inflatable Boat (RHIB) for available surge operations. The USCG has several types of vessels available (**Table 3.4.2**).

Table 3.4.1.1. The enforceability rating of the Deepwater MPAs in the South Atlantic. State ratings were developed by state enforcement agency in the closest state.

MPA	Closest State	Amendment 14 Rating	State Rating (2015)	USCG Rating (2015)
North Florida	Florida	Low	High	Low
St. Lucie Hump	Florida	Moderate	High	Low
East Hump	Florida	Moderate	High	Low
Georgia	Georgia	Low	Low	Low
Northern South Carolina	South Carolina	Low	Low	Low
Edisto	South Carolina	Low	Low	Low
Charleston Deep Artificial Reef	South Carolina	Low	Low	Low
Snowy Grouper Wreck	North Carolina	Low	Low	Moderate

Table 3.4.1.2. USCG enforcement assets available for monitoring Deepwater MPAs.

Surveillance Type	Asset
On-Water	Coastal Patrol Boats (CPB)
	Fast Response Cutters (FRC)
	Medium Endurance Cutters (MEC)
	High Endurance Cutters (HEC)
Aerial	Helicopters (HH-60)
	Aircrafts (C-130)

As of June 2015, three Notices of Violation and Assessments (NOVA) were issued for violating regulations established for the other protected areas in the South Atlantic. The cases were either settled out of court or uncontested. In the uncontested case, the Administrative Law Judge used several pieces of evidence to support the default judgement that the fishermen violated the MSA including: the vessel was anchored inside an MPA, the fishing gear was not properly stowed, the fisherman was in possession of snapper-grouper species while inside a MPA, and the fishermen was liable for violating fishing regulations under the MSA. If NOVAs are issued for violations within Deepwater MPAs, the regulations established for Deepwater MPAs might be challenged and changes to the regulations may be needed to improve adjudication.

The resource protection action items aim to address the following goals and objectives of the SMP:

Goal 4: <u>Enhance enforceability and compliance within Deepwater MPAs.</u>
Obj. J: Consider the seven criteria from the Law Enforcement AP's report when determining suitable Deepwater MPA sites.
Obj. K: Ensure enforceability of regulations for the Deepwater MPAs.
Obj. L: Improve surveillance and monitoring of Deepwater MPAs.
Obj. M: Maintain or improve application of law and regulations for Deepwater MPAs.
Obj. N: Increase user participation in surveillance, monitoring, and enforcement of Deepwater MPAs.

The following action items would be initiated by either Council staff and/or by potential partners:

Action Item 1: *Develop cooperative enforcement via intelligence and asset sharing, meetings, and training to encourage coordination of Deepwater MPA patrols and investigations.*
Task: Schedule Deepwater MPA enforcement activities and challenges to be reported at LEAP annual meeting to coordinate Deepwater MPA patrols and investigations.
Justification: Coordination among enforcement agencies can help to minimize duplicative effort and provide better coverage with limited resources.
Deliverables: Oral report at LEAP meeting
Schedule: Yearly in March

Budget: OLE partners' time, meeting cost done in conjunction with yearly LEAP meeting
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Tasks: Continue to have officers train at the USCG Southeast Regional Fisheries Training Center.
Justification: The Southeast Regional Fisheries Training Center has been a valuable asset for training officers in enforcement of fisheries regulations, including those pertaining to Deepwater MPAs.
Deliverables: Trained officers
Schedule: Annually
Budget:
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDENR, SCDNR

Tasks: Develop a patrol/sortie reporting form and database for determining compliance in MPAs and develop centralized database for information access.
Justification: A standardized reporting form developed by the law enforcement partners would help collect data to improve frequency and effectiveness of enforcement patrols. A centralized database would assist in reporting of data to requesting agencies such as NMFS or SAFMC.
Deliverables: Form and database to calculate compliance.
Schedule:
Budget:
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Action Item 2: *Maintain the "high" enforceability rating for the Florida Deepwater MPAs and increase the enforceability rating to at least "moderate" for the other Deepwater MPAs.*
Tasks: Purchase and maintain vessels capable of conducting offshore patrols and increase enforcement capacity to monitor the Deepwater MPAs
Justification: Protection of the Deepwater MPAs is crucial to their success. Fishing incursions into MPAs could remove individuals from the population and prevent maintenance of a natural sex ratio, age structure, and size structure. Having enforcement assets to monitor Deepwater MPAs is critical for preventing incursions into the area. If new vessels are needed for enforcement of Deepwater MPAs off each of the states, a vessel costs approximately $150,000 for a large center console vessel with two outboard engines. Some states may require more than one vessel.
Deliverables: Vessels available for offshore patrol
Schedule: Med/Long-term (with funding)
Budget: $200,000/ year
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Action Item 3: *Patrol Deepwater MPAs with aerial and at-sea assets.*
Tasks: Provide a deterrent presence within Deepwater MPAs through routine aerial and at-sea patrols and schedule and conduct dedicated surge operations.

Justification: A deterrent presence is needed in Deepwater MPAs to reduce incursions into the areas. Fishing incursions may prevent attaining the stated biological goals of the MPAs. To monitor the Deepwater MPAs, it was estimated to have three patrol officers per trip. The trip would last approximately 12 hours. The cost per officer was approximately $40 per hour and includes all fringe values. The vessel operating cost is approximately $100 per hour. This adds up to approximately $2,600 per monitoring event. The budget is estimated assuming five monitoring events per MPA and 8 MPAs.
Deliverables: Patrols are conducted in the MPAs
Schedule: Long-term (dependent on Action Item 2)
Budget: $105,000
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Action Item 4: *Initiate a remote monitoring program for the Deepwater MPAs.*
Tasks: Review methods for remote monitoring in offshore areas.
Justification: Patrols in Deepwater MPA are expensive and can occupy an entire day for officers involved in the patrol. Frequently when patrols occur in protected areas, no vessels are sighted. Remote monitoring methods can provide information to enforcement agencies on dates or times when incursions are more likely to occur.
Deliverables: Report on remote monitoring methods.
Schedule: Report- Short/Med-term
Budget: Staff Time
Potential Partners/roles: NMFS MPA Center, NMFS Southeast Fishery Science Center (SEFSC), Southeast Coastal Ocean Observing Regional Association, National Ocean Service, SAFMC Staff

Tasks: Seek funding for remotely monitoring Deepwater MPAs and implement program.
Justification: Funding is limited in the SE for remote monitoring offshore areas. Additional funding will be required if a remote monitoring program is to be developed. The cost estimate is based on ten monitoring events for the eight Deepwater MPAs at an estimated cost of $2,000 per event.
Deliverables: Grant/Funding requests for monitoring offshore areas.
Schedule: Long-term
Budget: $160,000
Potential Partners/roles: NMFS, SAFMC Staff

Action Item 5: *Develop a citizen science/research science program and database for reporting data collected in Deepwater MPAs.*
Tasks: Identify potential partners (federal and state resource agencies, non-governmental organizations (NGOs), academic institutions) to seek funding for a citizen science/cooperative research program focusing on Spawning SMZ compliance; conduct a review of existing citizen science and cooperative research programs to aid in the development of a citizen science program for the South Atlantic; and identify and develop a database to enter data collected in the Spawning SMZs through a citizen science/cooperative research program.
Justification: Citizen science/cooperative research program would promote buy-in from the public and contribute to voluntary compliance over the long-term. Such programs also enhance education and outreach opportunities and promote resource stewardship.

Deliverables: A report on citizen science/cooperative research including potential partners, review of existing citizen science/cooperative research programs, and identifies potential a database to store data collected in Spawning SMZs through citizen science.
Schedule: Short-term/ongoing
Budget:
Potential Partners/roles: SAFMC, NMFS, FWC, GADNR, NCDEQ, SCDNR

Action Item 6: *Report enforcement and compliance activities to the South Atlantic Fishery Management Council.*
Tasks: Annually report enforcement and compliance activities at SAFMC Meetings
Justification: Reporting on enforcement activities enables the enforcement agencies to review the patrolling of Deepwater MPAs to determine if sufficient patrols have been conducted and keeps management informed of law enforcement activities.
Deliverables: Annual enforcement reports (at Council meetings)
Schedule: Short-term
Budget: Law enforcement partners staff time
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Action Item 7: *Provide compliance assistance to user groups through outreach and education.*
Tasks: Communicate to the public about Deepwater MPAs while on patrol in the vicinity of Deepwater MPAs and at outreach and education events.
Justification: Communication by patrol officers can help to educate and increase the public's understanding of the importance of Deepwater MPAs and regulations and increase compliance.
Deliverables: Increased public awareness.
Schedule: Ongoing
Budget: Law enforcement partners staff time
Potential Partners/roles: USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR

Action Item 8: *Encourage North Carolina to commit to a JEA with NOAA.*
Tasks: Have SAFMC Chair send a letter encouraging North Carolina to commit to the JEA with NOAA.
Justification: Currently North Carolina is the only state in the South Atlantic region without a JEA. This limits their ability to enforce federal regulations for all vessels in federal waters. The JEA could also provide funds for purchasing assets or maintaining current assets for patrols in federal waters.
Deliverables: Letter sent to NCDEQ
Schedule: Long-term
Budget: $0
Potential Partners: SAFMC

Action Item 9: *Monitor/Improve adjudication of MPA regulations.*
Tasks: Monitor court decisions and orders to track adjudication of Notices of Violation and Assessment in Deepwater MPAs and, if needed, recommend modifications to regulations or other actions to improve adjudication in favor of enforcement agencies.

Justification: Regulations must be enforceable, and monitoring enforcement decisions and orders provides an opportunity to determine if the current regulations should be altered or if other actions by the Council are needed.
Deliverables: Annual oral updates at LEAP meeting.
Schedule: Short-term
Budget: Law enforcement partners staff time
Potential Partners/roles: SAFMC, USCG, NOAA OLE, FWC, GADNR, NCDEQ, SCDNR, NOAA General Counsel Enforcement Section

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1.1.1 Governance Indicators

The governance indicators of the Deepwater MPA focuses on the SMP after the MPAs were selected. The selection of the MPA is a management decision for the Council and need to be considered in the Amendment Process. The governance indicators cover important aspects of the managing Deepwater MPAs including review of the MPAs, development of the SMP, outreach, compliance with rules and regulations, and enforcement of regulations. Indicators should be addressed on a site specific basis if possible.

Table 3.5.4.1. Governance metrics for establishing and utilizing the SMP for the Deepwater MPA.

Metric	Yes/No
SMP formed Evaluation conducted SMP AP met	

Table 3.5.4.2. Governance outreach metrics for evaluating the Deepwater MPAs.

Metric	Yes/No
Short-term outreach action items created	
Outreach items updated with new management regulations	
POC Designated for MPA in SAFMC, SERO, SEFSC	
List of key contacts created	
SAFMC communicate with key contacts 1 time per year	
Collaboration with agencies and organizations for teacher workshops initiated/maintained	

Table 3.5.4.3. Governance law enforcement metrics for evaluating the Deepwater MPAs.

Enforcement	Yes/No
Number of patrols exceeds 10 patrols/year/MPA	
Enforcement vessels in adjacent state increased or maintained	
Updates on enforcement and adjudication provided	
Ratings maintained/increased for MPA	

Table 3.5.4.4. Governance compliance metrics for evaluating the Deepwater MPAs.

Metric	Yes/No
Number of citations < 2/year	
Percent of patrols with violation < 20%/year	
Remote monitoring methods reviewed	
Remote monitoring method recommended	
Citizen Science Program developed	