Excerpts from System Management Plan for Spawning Special Management Zones (Snapper Grouper Amendment 36) and Deep-water Marine Protected Areas (Snapper Grouper Amendment 14). The actions items listed below are part of periodic reviews that will be conducted for the protected areas to determine their effectiveness. There can and will be some overlap among the actions items, but the goals differ among the areas. Therefore, action items can differ to make sure the protected areas are effective at reaching their management goals. Below will be the goals and objectives with the socio-economic action items from the two system management plans.

Spawning Special Management Zones System Management Plan

1.1 Goals and Objectives

The following goals and objectives were developed for the SMP for the Spawning SMZ sites and to specify the research, monitoring, evaluation, enforcement, and communication action items. The goals and objectives will be reviewed periodically by the SMP Advisory Panel (AP) to determine if the goals and objectives should be modified to more appropriately address current and future management needs. The recommendations from the SMP AP will be reviewed by stakeholders, other APs, and the Council. The Council will approve the final goals and objectives of the SMP and the focal species (**Table 3.1.1**) for the Spawning SMZs.

Goal 1: Develop and adopt an effective process to evaluate and refine management of Spawning SMZs

- Obj. A: Develop a SMP for Spawning SMZs to enhance or improve management of habitats where spawning of multiple snapper grouper species is likely to occur or documented based on input from scientists, fishermen, and the public.
- Obj. B: Implement the SMP.
- Obj. C: Ensure a co-management system that is efficient and representative of fishery stakeholders.
- Obj. D: Develop, increase, or maintain co-management support from fishermen through cooperative research and citizen science projects within the Spawning SMZs.
- Obj. E: Conduct evaluations on the knowledge regarding spawning within and near each site at Council approved intervals.

Goal 2: Increase or maintain knowledge and protection of important spawning locations through research and monitoring

- Obj. F: Acquire and deploy resources to enhance knowledge on the spawning locations in the South Atlantic for the focal species.
- Obj. G: Increase habitat characterization of potential or selected Spawning SMZs.
- Obj. H: Protect habitats where spawning is likely to occur or is documented for multiple snapper grouper species from anthropogenic impacts.

Goal 3: Improve public's environmental awareness and knowledge about Spawning SMZs

- Obj. I: Increase public's level of knowledge about the purpose for, importance of, and regulations in Spawning SMZs.
- Obj. J: Enhance and strengthen stakeholder participation in co-management of Spawning SMZs.
- Obj. K: Enhance or maintain the existence values of the Spawning SMZs.

Goal 4: Enhance enforceability and compliance within the Spawning SMZs

- Obj. L: Increase user participation in surveillance and monitoring.

Obj. M: Maintain or improve surveillance and monitoring of Spawning SMZs via satellites, drones, research vessels, etc.
Obj. N: Increase or maintain compliance with regulations within the Spawning SMZs through targeted communication.
Obj. O: Improve or maintain application of law and regulations within the Spawning SMZs.
Obj. P: Consider Law Enforcement AP recommendations for protected areas when developing, designating, and managing Spawning SMZs.

Goal 5: Research and monitor impact of invasive species
Obj. Q: Improve understanding of invasive lionfish ingress into and near Spawning SMZs.
Obj. R: Identify if lionfish have impacts on fish communities in or near Spawning SMZs.

Table 1.1.1. Focal species considered for establishment and evaluation of the Spawning SMZs.

Family	Common Name	Scientific Name
Amberjack	Greater Amberjack	*Seriola dumerili*
Groupers	Coney	*Cephalopholis fulvus*
	Graysby	*C. cruentata*
	Goliath Grouper	*Epinephelus itajara*
	Nassau Grouper	*E. striatus*
	Red Grouper	*E. morio*
	Red Hind	*E. guttatus*
	Rock Hind	*E. adscensionis*
	Speckled Hind	*E. drummondhayi*
	Snowy Grouper	*Hyporthodus niveatus* formerly *E. niveatus*
	Warsaw Grouper	*H. nigritus* formerly *E. nigritus*
	Yellowedge Grouper	*H. flavolimbatus* formerly *E. flavolimbatus*
	Black Grouper	*Mycteroperca bonaci*
	Gag	*M. microlepis*
	Scamp	*M. phenax*
Snappers	Blackfin Snapper	*Lutjanus buccanella*
	Cubera Snapper	*Lutjanus cyanopterus*
	Mutton Snapper	*L. analis*
	Red Snapper	*L. campechanus*
	Silk Snapper	*L. vivanus*
	Yellowtail Snapper	*Ocyurus chrysurus*
Tilefishes	Golden Tilefish	*Lopholatilus chamaeleonticeps*
	Blueline Tilefish	*Caulolatilus microps*

Socioeconomic monitoring

The purpose of socioeconomic monitoring is to develop a better understand of the social and economic impacts of the Spawning SMZs and monitor stakeholder knowledge and perception about Spawning SMZs. As monitoring studies gather data, they have the potential to detect significant changes in stakeholder perceptions and knowledge about Spawning SMZs. Research findings can help mangers and scientists improve or adapt management of the

Spawning SMZs. The priority rankings for the socioeconomic monitoring are separate from resource monitoring, assessment, and habitat mapping rankings.

Action Item 13: *Collect baseline social and economic data on resource user groups in different areas to understand the social and economic effects of prohibiting access to the Spawning SMZs.*

Priority Ranking: 1

Task: Social and economic data are collected to determine effects of Spawning SMZs on different user groups.

Justification: Understanding social and economic effects of area closures can help managers compare biological benefits to social and economic costs of establishing closed areas. Additionally, detailed information on different user groups in different areas will allow analysis of cumulative effects on fishermen and communities when a closed area is implemented. Collection of baseline data will allow for comparison of future data to better understand how fishing behavior changed, and how fishing businesses and recreational anglers adapted to restricted access.

Deliverables: Report

Priority: Medium

Schedule: Long-term

Budget: $300,000

Potential Partners: NMFS and academic scientists

Projects Completed or Underway:

- A socioeconomic study of the impacts of the *Oculina* Bank has been conducted (Helies et al. 2011).

Action Item 14: *Develop techniques to track the public's knowledge and perception regarding the purpose of, importance of, and regulations in Spawning SMZs.*

Priority Ranking: 2

Task: Techniques are developed to track the public's knowledge and perception of Spawning SMZs.

Justification: Data are needed to evaluate public's knowledge and perception of Spawning SMZs. The data could be collected via online survey to evaluate communication and outreach strategies.

Deliverables: Report

Priority: Medium

Schedule: Long-term

Budget: $10,000

Potential Partners: NMFS, SAFMC, and academic scientists

Projects Completed or Underway: None.

Action Item 15: *Monitor stakeholder perception of Spawning SMZ as a management tool.*

Priority Ranking: 3

Task: Stakeholder perception of Spawning SMZs is monitored through a survey.

Justification: Data are needed to evaluate stakeholder knowledge and perception of Spawning SMZs. Data could be collected via online survey, or during public meetings. The outcomes could be used to evaluate communication and outreach strategies.

Deliverables: Report

Priority: Medium

Schedule: Long-term

Budget: $10,000
Potential Partners: NMFS, SAFMC, and academic scientists
Projects Completed or Underway: None.

Action Item 16: *Engage stakeholders in a citizen science program to collect data used to evaluate the effectiveness of Spawning SMZs.*

Priority Ranking: 4

Task: A citizen science program is initiated and engages stakeholders in the collection of data to evaluate the effectiveness of Spawning SMZs.
Justification: Due to a limited budget, a Citizen Science Program is needed to gather data to assist in the evaluation of the Spawning SMZs to determine if the area is a spawning area for snapper grouper species. Additionally, cooperative research and involvement of resource users in data collection will increase buy-in for area-based management as a management tool and foster a better understanding of the purpose of Spawning SMZs.
Deliverables: Information to be included in the Spawning SMZ Evaluation Report
Priority: Medium
Schedule: Short-term
Budget:
Potential Partners: NMFS, SAFMC, fishermen, and academic scientists
Projects Completed or Underway:

- SAFMC is developing a Citizen Science Program.

Deep-water Marine Protected Area System Management Plan

1.1.1 Goals and Objectives

The overall goal of the Deepwater MPAs is to provide deepwater snapper grouper species (speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, and blueline tilefish) with an area where deepwater species have refugia from harvest pressure. With the reduced fishing effort in the area, the snapper grouper species should have a more natural sex ration, size structure and age structure. During the development of Amendment 14, all species with known statuses in **Table 3.5.1** were overfished or experiencing overfishing. Since Amendment 14, snowy grouper and golden tilefish stock statuses have improved; however, snowy grouper remains overfished. Improving the deepwater stocks to sustainable levels will remain a primary goal of the Deepwater MPA. The goals and objectives of the SMP will need to be reviewed periodically to adapt management to management and objectives from the fishery management plan. The following sections contain metrics for evaluating the Deepwater MPAs and accomplish SMP Goals and Objectives:

Goal 1: Adopt and utilize an effective process to evaluate and refine management of Deepwater MPAs.
- Obj. A: Utilize public input from scientists, fishermen, APs, and the public to evaluate and refine management of Deepwater MPAs.
- Obj. B: Ensure a management system that is efficient and representative of fishery stakeholders.

Goal 2: Maximize biological benefits of the Deepwater MPAs.
- Obj. C: Restore or maintain populations of speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, and blueline tilefish at sustainable levels within Deepwater MPAs.
- Obj. D: Prevent exploitation of deepwater species within Deepwater MPAs.
- Obj. E: Protect populations of deepwater species from harvest in some nursery areas and habitats from fishing/human impact through creation of Deepwater MPAs.
- Obj. F: Increase or sustain replenishment rate of fishery stocks outside of Deepwater MPAs.

Goal 3: Minimize adverse social and economic effects of Deepwater MPAs.
- Obj. G: Minimize economic impact of Deepwater MPAs to stakeholders targeting species other than snapper-grouper species.
- Obj. H: Enhance respect for understanding of local knowledge.
- Obj. I: Prevent compromise of boater safety due to the placement of and regulations in Deepwater MPAs.

Goal 4: Enhance enforceability and compliance within Deepwater MPAs.
- 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.

Goal 5: Maximize research and monitoring capabilities in Deepwater MPAs.
- Obj. O: Utilize fishery-independent and fishery-dependent data to increase scientific knowledge and understanding of Deepwater MPAs.
- Obj. P: Enhance information collected on the biological, socioeconomic, and

governance metrics for Deeepwater MPAs through a Citizen Science Program.

Goal 6: Enhance research and monitor impact of invasive species in Deepwater MPAs.

- Obj. Q: Maintain or enhance a program to reduce or eliminate invasive lionfish in Deepwater MPAs.
- Obj. R: Increase scientific knowledge on lionfish and ecosystem impacts in Deepwater MPAs.

Goal 7: Improve environmental awareness and public knowledge about the Deepwater MPAs.

- Obj. S: Increase level of public's knowledge about the purpose of, importance of, and regulations in Deepwater MPAs.
- Obj. T: Strengthen and enhance stakeholder participation in management of Deepwater MPAs.
- Obj. U: Enhance or maintain existence value of Deepwater MPAs.

1.1.1 Socioeconomic Indicators

When the Council selected the Deepwater MPAs, they considered several factors beyond biological and habitat data. The Council wanted to select areas and a management strategy that would minimize impacts to fishermen and other fisheries and minimize potential safety issues. Metrics were selected by the IPT to rate the effectiveness of the MPAs based on the socioeconomic indicators (**Table 3.5.3.1**).

Table 1.1.1.1. Socioeconomic metrics for the Deepwater MPA System Management Plan.

Metric	Yes/No
Study developed to collect baseline social and economic data to understand effects of MPA	
Fishermen targeting species outside the snapper grouper complex are not impacted by the MPA	
Data on stakeholder's knowledge of the Deepwater MPAs are collected	
Data on perception of the Deepwater MPAs are collected	
Citizen Science Program Initiated	
Citizen Science Program assisting in the monitoring of the Deepwater MPAs	