System Management Plan Workgroup Evaluation Report of Spawning Special Management Zones

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Executive Summary

This report summarizes advisory panel input collected during the evaluation of the South Atlantic Spawning Special Management Zones (SSMZ) established through Amendment 36 to the Snapper Grouper Fishery Management Plan. The evaluation was conducted to assess whether the existing SSMZ network continues to support its intended conservation and fisheries management objectives, while also identifying implementation gaps, operational constraints, and opportunities for adaptive management moving forward.

The review focused on five SSMZs:

- South Cape Lookout
- Devil's Hole / Georgetown Hole
- Warsaw Hole
- Area 51
- Area 53

South Cape Lookout, Devil's Hole, and Warsaw Hole are SSMZs that contain natural hard bottom areas and have a sunset provision with regulations scheduled to expire in July 2027 unless renewed through Council action.

The review currently includes comments from the Law Enforcement Advisory Panel (LEAP), Habitat and Ecosystem Advisory Panel (HEAP), and Snapper Grouper Advisory Panel (SGAP). Additional review and scientific input from the Scientific and Statistical Committee (SSC) will be incorporated during future stages of the evaluation process as well as recommendations from the System Management Plan Workgroup (SMP Workgroup).

Across advisory groups, the evaluation revealed a consistent pattern: while stakeholders continue to recognize the conservation rationale and potential long-term ecological value of the SSMZ network, implementation effectiveness remains constrained by limited enforcement capacity, insufficient monitoring resources, uneven stakeholder awareness, and substantial uncertainty regarding measurable biological outcomes.

Despite these challenges, advisory panels and workgroup supported retaining the SSMZs. The groups recommended improving:

- monitoring and evaluation,
- stakeholder outreach and education, and
- enforcement and compliance.

Key Findings

- The original purpose of the SSMZs remains supported by most advisory panel members.
- Enforcement limitations represent the most significant challenge affecting implementation effectiveness.
- Existing monitoring and research programs are insufficient to fully evaluate long-term biological outcomes.
- Outreach and stakeholder awareness require improvement.
- Current evidence (direct or indirect evidence of spawning in all locations) does not support for removing protections.

- Most advisory groups favored precautionary retention while improving evaluation and implementation capacity.

The evaluation also highlighted the importance of continued adaptive management. Advisors repeatedly emphasized that the absence of definitive evidence regarding population-level benefits should not necessarily be interpreted as evidence of ineffectiveness, particularly given the complexity of measuring spawning protection outcomes in offshore marine systems.

Contents

1. Introduction and Background

1.1 Purpose of the Evaluation

The South Atlantic Fishery Management Council (SAFMC) initiated this evaluation to assess the effectiveness of the Spawning Special Management Zones (SSMZ) established through Amendment 36 implemented in 2017. The review was intended to determine whether the existing zones continue to support their original conservation objectives and whether current management measures remain appropriate given available scientific information, implementation capacity, and stakeholder perspectives. Emphasis was placed on the three natural reef SSMZs (South Cape Lookout, Devil's Hole / Georgetown Hole, and Warsaw Hole) which had sunset provisions scheduled to expire in July 2027. The evaluation also sought to identify operational strengths and weaknesses, gaps in monitoring and enforcement, stakeholder concerns, and opportunities for adaptive management improvements.

1.2 Creation of SSMZ in Amendment 36

Amendment 36 established a network of five Spawning Special Management Zones intended to protect important spawning habitat and spawning fish for snapper grouper species.

The amendment was developed between 2012 and 2016 and implemented in 2017 following extensive Council review and stakeholder engagement.

The purpose and need for Amendment 36 was to:

> "*Protect important spawning habitat for snapper grouper species that can be designated for protection to enhance spawning. Reduce bycatch and bycatch mortality of snapper grouper species, including speckled hind and warsaw grouper. Prevent overfishing and achieve optimum yield (National Standard 1); reduce bycatch and bycatch mortality of economically and ecologically important snapper grouper species, including speckled hind and warsaw grouper, to the extent practicable (NS 9); and achieve conservation goals while minimizing to the extent practicable negative social and economic effects to snapper grouper fishermen and fishing communities (NS 8).*" (SAFMC 2016)

The management strategy was designed as an approach focused on protecting locations believed to support predictable spawning activity and important reef habitat characteristics.

1.3 SSMZ Network Description

The current SSMZ network includes five protected areas distributed across the South Atlantic region including natural reef sites and artificial reef sites. Collectively, the SSMZ account for 17.7 square miles which is less than 0.001% of the South Atlantic region.

The natural reef sites were selected based on habitat characteristics and evidence suggesting recurring spawning activity for multiple species. The sites are

- South Cape Lookout off North Carolina
- Devil's Hole off South Carolina
- Warsaw Hole off Florida

The artificial reef sites (Area 51 and Area 53) were originally established as unmarked artificial reefs to test the idea of using artificial reefs as protected areas.

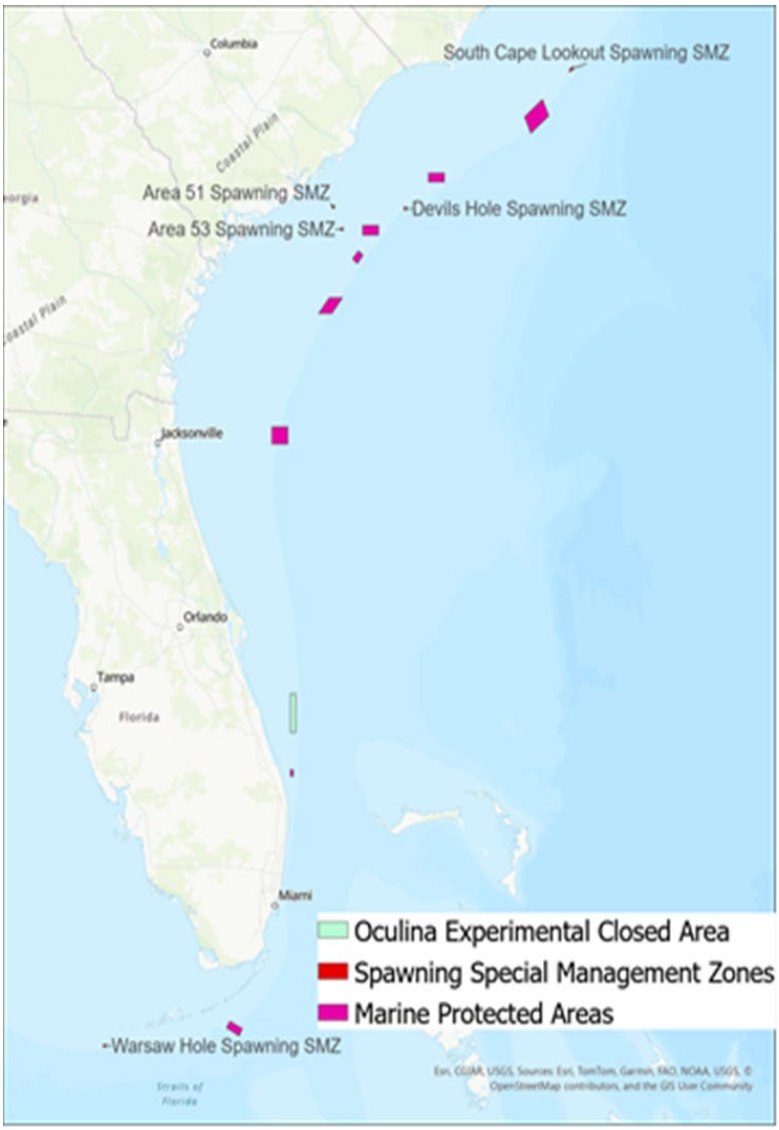


Figure 1. Map of protected areas established through the Snapper Grouper Fishery Management Plan. The Spawning Special Management Zones created through Amendment 36 are labelled.

1.4 Existing Management Measures

Current regulations within SSMZs are:

> "*Any fishing vessel in a spawning SMZ is prohibited to fish for or harvest species in the snapper-grouper fishery management unit year-round. For a fishing vessel to possess snapper-grouper species on board while in a spawning SMZ, the vessel must be in transit and fishing gear must be appropriately stowed…*" (Code of Federal Regulations, 2026)

1.5 Focal Species

The SSMZs were developed to support management of 23 species in the snapper grouper complex.

Focal species include:

Greater Amberjack	Speckled Hind	Cubera Snapper
Coney	Snowy Grouper	Mutton Snapper
Graysby	Warsaw Grouper	Red Snapper
Goliath Grouper	Yellowedge Grouper	Silk Snapper
Nassau Grouper	Black Grouper	Yellowtail Snapper
Red Grouper	Gag	Golden Tilefish
Red Hind	Scamp	Blueline Tilefish
Rock Hind	Blackfin Snapper	

The Council's original intent was to establish protections that would support spawning success, reduce fishing mortality associated with spawning behavior, and contribute to long-term stock sustainability.

2. Evaluation Methods and Process

The evaluation was designed as a structured review of both management implementation and outcomes. It assessed whether the SSMZs remain biologically relevant and whether the broader management approach is functioning effectively from operational, enforcement, and stakeholder perspectives. The evaluation examined SSMZ planning and design, enforcement and compliance, outreach and stakeholder engagement, monitoring and data collection, and biological and socioeconomic outcomes.

2.1 Advisory Panel Engagement

This initial evaluation is designed to gather input from a variety of stakeholders and provide the Council with a variety of perspectives. Staff have reached out to different advisory panels using in-person meetings, webinar meetings, and evaluation tools to gather input. Currently, input has been received from Law Enforcement (LEAP), Habitat and Ecosystem (HEAP), and Snapper Grouper Advisory Panels (SGAP) with additional input to be gathered from the Scientific and Statistical Committee.

2.2 Evaluation Categories

The discussion from the advisory panels focused on five key topics: planning and design, roles and coordination, resource and capacity, management implementation, and outcomes. Some topics (e.g. planning and design) are well suited to discuss as broad topics while others are better suited for individual areas (e.g. outcomes).

2.3 Evaluation Limitations

Advisory groups identified several limitations affecting the evaluation process and interpretation of findings. These included few advisors completing evaluation tool, many advisors were unfamiliar with all sites, limited biological datasets, absence of nearby comparison areas, and challenges associated with offshore monitoring (biological and enforcement). Advisors also emphasized that many biological processes associated with spawning protection and larval recruitment are inherently difficult to measure directly, particularly within relatively small offshore protected areas. As a result, advisory groups frequently characterized the evaluation as an early-stage adaptive review rather than a definitive assessment of long-term effectiveness.

3. Cross-Cutting Findings

3.1 Overview

Although each advisory panel approached the evaluation from a different perspective, several common themes emerged consistently across discussions. These themes provide important context for understanding both the strengths and limitations of the current SSMZ management.

Overall, advisory groups viewed the original conservation rationale underlying the SSMZ network as valid but repeatedly emphasized that implementation effectiveness is constrained by operational limitations, insufficient monitoring capacity, and uncertainty regarding measurable outcomes.

3.2 Enforcement and Compliance Constraints

Enforcement capacity emerged as the single most consistent concern across all advisory groups.

Advisors repeatedly emphasized that the offshore location, small spatial footprint, and limited patrol resources associated with the SSMZs created persistent challenges. The LEAP noted that there were vessel range limitations, limited staff to conduct offshore trips, weather conditions, lack of Joint Enforcement Agreement between NC Division of Marine Fisheries and NOAA Fisheries, and competing enforcement priorities significantly reduced the frequency of offshore patrol activity.

The LEAP also discussed limitations associated with existing monitoring technologies. While Vessel Monitoring System (VMS), Automatic Identification System (AIS), radar systems, and aerial patrols may improve targeting efficiency, these tools cannot independently verify illegal fishing activity without additional observation or investigation.

Several advisory groups expressed concern that inconsistent enforcement visibility may undermine stakeholder confidence in the effectiveness of the protections.

3.3 Outreach and Stakeholder Awareness

Outreach and stakeholder education were identified as major opportunities for near-term improvement.

Members across all panels noted that awareness of the SSMZs remains inconsistent among portions of both the recreational and commercial fishing sectors. Several members indicated that many fishermen remain unfamiliar with the location and regulations for the SSMZs.

Advisory panels emphasized that improved outreach may represent one of the most practical and cost-effective approaches for improving compliance in offshore areas where routine enforcement presence is limited.

Suggested improvements included:

- expanded integration into chart plotters and electronic navigation systems,
- improved visibility within fishing applications,
- targeted outreach through marinas and tackle shops,
- social media campaigns,
- printed educational materials,
- and highlight enforcement actions in closed areas.

3.4 Biological Effectiveness

A recurring theme throughout the evaluation was the difficulty of measuring biological effectiveness and relevance of the SSMZs.

Advisory panels acknowledged that spawning activity has been documented in all the SSMZs and larval connectivity modeling suggests potential regional contribution for most sites.

Several advisors described the challenge of demonstrating measurable spillover or recruitment benefits as one of the central scientific limitations affecting marine protected area evaluations more broadly. For SSMZs, the discussions highlighted the need for additional data on spawning fish, monitoring through existing programs is insufficient, and population-level benefits will be difficult to assess.

Although there was concern about the biological effectiveness of the SSMZs, some members cautioned against interpreting limited evidence as evidence of ineffectiveness.

3.5 Monitoring and Research Needs

All advisory panels identified monitoring limitations as a major constraint affecting evaluation of the SSMZs. Members noted the need to expand the biological sampling to include areas nearby the SSMZs, develop a long-term monitoring program, and improve data on social and economic impacts of the closed area.

Advisory panels repeatedly stressed that improved monitoring capacity is essential for strengthening future management decisions and evaluating long-term effectiveness.

3.6 Advisory Panel Perspectives on Retention

Most stakeholder perspectives favored retaining the SSMZs while continuing to improve outreach, enforcement, monitoring, and evaluation. Supportive comments emphasized the value of protecting important spawning habitat and the precautionary role of closures, while more skeptical comments focused on offshore enforcement challenges, limited evidence of measurable outcomes, potential effort displacement, and the small size of the protected areas. Overall, the advisory panels did not recommend removing the SSMZs outright, but several individuals noted that additional information would help guide future management decisions. Suggestions for management of the SSMZs from advisory panel members included:

- Keeping regulations and management the same with increased biological and enforcement monitoring;
- Increasing spawning season closures due to low compliance; and
- Allowing for rotating closures of artificial reefs.

3.7 System Management Plan Workgroup Perspectives on Retention

The System Management Plan Workgroup concluded that the available information did not support removing protections for the five SSMZs. While members acknowledged that additional biological, ecological, and fisheries information would improve future evaluations, they found that the existing evidence was insufficient to remove continued protection of the sites.

The workgroup recommended retaining the sunset provisions to ensure the SSMZs are periodically re-evaluated as new biological, ecological, fisheries, social, economic, and enforcement information becomes available.

The workgroup emphasized that information from nearby habitats would provide valuable context for evaluating the relative importance and representativeness of each SSMZ. The workgroup noted that spawning by focal species has been documented within the natural SSMZs, reinforcing the value of continued protection during spawning periods. Members also identified opportunities to improve outreach and education to increase awareness of SSMZ regulations among the fishing community. Finally, the workgroup recognized that enforcement will continue to be challenging because of the offshore location of the sites. Although emerging technologies may improve the ability to detect potential violations, effective enforcement will still require on-water patrols and vessel inspections to document violations and support enforcement actions. Additional details are provided in the site-specific findings.

4. Site-Specific Findings

Although the advisory panels identified several common implementation themes across the SSMZs, advisors also discussed important differences among the individual sites. Perceived effectiveness, stakeholder support, available monitoring information, and implementation challenges varied substantially by location.

Overall, Devil's Hole received the most consistently positive feedback regarding biological relevance and management effectiveness, while South Cape Lookout generated greater uncertainty regarding measurable outcomes and implementation capacity. The artificial reef sites, Area 51 and Area 53, received little discussion with some members supportive of using artificial reef sites as protected areas.

4.1 South Cape Lookout

Advisory panels consistently identified South Cape Lookout as one of the more challenging sites within the SSMZ network. They noted the limited monitoring coverage, lack of Joint Enforcement Agreement between North Carolina Division of Marine Fisheries and NOAA Fisheries, uncertain compliance rates, and insufficient biological data to evaluate long-term outcomes.

Several advisors also noted that stakeholder familiarity with the site and its management objectives appears relatively limited.

Despite uncertainty regarding outcomes, most advisory advisors favored retaining protections at South Cape Lookout while improving monitoring capacity, outreach, and enforcement. Some advisory panel members suggested increasing seasonal closures as opposed to area closures.

Workgroup Recommendation

The System Management Plan Workgroup considered the South Cape Lookout SSMZ the most difficult of the five sites to evaluate. Unlike the other natural SSMZs, South Cape Lookout is not associated with a distinct bathymetric or habitat feature that clearly distinguishes it from adjacent areas, making it more difficult to assess its relative importance as a spawning location. Although members identified several information gaps and agreed that additional biological, fisheries, and habitat data would improve future evaluations, the available evidence documenting spawning by focal species did not support removing the existing protections.

The workgroup expressed a preference for retaining the current regulations while maintaining the sunset provision to ensure the site is re-evaluated as additional information becomes available.

Members emphasized that improved monitoring, additional information from surrounding habitats, and expanded outreach would strengthen future evaluations of the site's effectiveness and importance. The lack of a Joint Enforcement Agreement between North Carolina and NOAA Fisheries will be an additional challenge.

4.2 Devil’s Hole / Georgetown Hole

Among all evaluated sites, Devil’s Hole received the strongest support regarding:

- biological relevance,
- management effectiveness, and
- justification for continued protection.

Advisors frequently referenced the area as one of the stronger examples supporting the broader SSMZ concept. Sampling efforts documented spawning condition and spawning-associated activity for gag and scamp.

Advisory groups also noted that monitoring and data collection efforts at Devil’s Hole appear somewhat more developed than at several other sites. Nevertheless, advisors continued to emphasize the need for expanded monitoring and increased enforcement.

Most advisory groups supported retaining the existing protections at Devil’s Hole with relatively limited discussion regarding modifications to management or boundaries.

Workgroup Recommendation

The System Management Plan Workgroup considered Devil's Hole to have the strongest support for retaining existing protections among the five SSMZs. The site is associated with a distinct bathymetric feature that has been identified through multiple studies as an important spawning location for reef fish. Members highlighted the strong biological evidence documenting spawning by focal species within the area, as well as larval dispersal modeling indicating that larvae produced at Devil's Hole have moderate retention and rank among the higher-performing spawning locations for contributing recruits to the South Atlantic region.

Based on the available biological and modeling information, the workgroup reached consensus that the existing regulations for Devil's Hole should be retained.

4.3 Area 51

Area 51 is an artificial reef SSMZ originally established as an unmapped reef site and became a SSMZ through Amendment 36. Compared with several natural reef sites, Area 51 generated somewhat more neutral or mixed responses regarding biological outcomes and compliance. Panel members acknowledged the site's habitat and conservation value, though uncertainty regarding spawning benefits remained common.

Monitoring efforts documented use of the site by black sea bass, gag grouper, and red snapper. Advisory groups noted that artificial reef monitoring efforts have contributed useful observational information but remain insufficient for comprehensive long-term evaluation.

Most advisors supported continued protection while emphasizing the need for expanded monitoring, clearer management objectives, and improved evaluation metrics.

Workgroup Recommendation

The System Management Plan Workgroup considered the artificial reef SSMZs to be unique opportunities to evaluate how protected artificial reef habitats can support spawning by reef fish. Members recognized that these sites were established as artificial reefs where fishing for snapper grouper species has been prohibited since their creation, providing a rare opportunity to evaluate long-term biological responses under reduced fishing pressure. The workgroup also noted that Area 51 continues to support ongoing research and monitoring efforts and that additional information on spawning activity and fish use of the site would strengthen future evaluations.

Based on the available information, the workgroup recommended retaining the existing regulations for Area 51.

4.4 Area 53

Area 53 is an artificial reef SSMZ originally established as an unmapped reef site and became a SSMZ through Amendment 36. Monitoring efforts documented the presence of black sea bass, gag grouper, red snapper, and evidence of spawning-associated activity.

Advisors emphasized that monitoring remains limited, compliance information is incomplete, and long-term performance indicators remain uncertain.

While many Advisory Panel members supported retaining protections, others suggested that future adaptive modifications or alternative management approaches may warrant consideration such as rotating closures among artificial reefs or seasonal openings.

Workgroup Recommendation

The System Management Plan Workgroup considered the artificial reef SSMZs to be unique opportunities to evaluate how protected artificial reef habitats can support spawning by reef fish. Members recognized that these sites were established as artificial reefs where fishing for snapper

grouper species has been prohibited since their creation, providing a rare opportunity to evaluate long-term biological responses under reduced fishing pressure. The workgroup also noted that additional information on spawning activity and fish use of the site would strengthen future evaluations.

Based on the available information, the workgroup recommended retaining the existing regulations for Area 53.

4.5 Warsaw Hole

The advisory panels described Warsaw Hole as biologically important but difficult to monitor and enforce due to its offshore location and limited resources. Biological sampling showed warsaw grouper and greater amberjack in spawning condition, supporting continued management for spawning fish, though the evidence base was acknowledged as limited.

Most advisory groups supported retaining the existing protections at Warsaw Hole with relatively limited discussion regarding modifications to management or boundaries.

Workgroup Recommendation

The System Management Plan Workgroup considered Warsaw Hole SSMZ to have strong support for retaining the existing protections. The site is centered on a distinct bathymetric feature that has been identified as an important spawning location for reef fish. Members noted observations of spawning-condition warsaw grouper within the hole, as well as spawning-condition greater amberjack in the SSMZ, providing biological evidence that the site supports spawning by focal species.

Based on the available biological and modeling information, the workgroup recommends that the existing regulations for Warsaw Hole should be retained.

5. Advisory Panel Perspectives

5.1 Overview

Each advisory panel approached the evaluation from a distinct perspective. Although substantial overlap existed among many conclusions, the panels differed in emphasis regarding implementation priorities, operational concerns, and long-term management considerations. Collectively, the advisory process provided an assessment of the SSMZs that incorporated enforcement realities, ecological considerations, stakeholder perspectives, and fishery management concerns.

5.2 Law Enforcement Advisory Panel

The Law Enforcement Advisory Panel focused primarily on enforceability, compliance, offshore patrol limitations, and practical implementation constraints. They emphasized that offshore SSMZs are inherently difficult to patrol consistently due to vessel range limitations, staffing shortages, weather constraints, and competing enforcement priorities. Advisors also stressed that

compliance depends heavily on public awareness, and outreach may provide one of the most practical near-term tools for improving effectiveness.

Key discussion themes included limitations of VMS-only enforcement, difficulties proving violations offshore, importance of coordinated federal and state enforcement, and the growing challenge associated with modern vessel technology.

The Law Enforcement Advisory Panel generally supported retaining the SSMZs while improving enforcement coordination, stakeholder education, and monitoring support tools.

5.3 Habitat and Ecosystem Advisory Panel

The Habitat and Ecosystem Advisory Panel focused primarily on ecological function, habitat protection, biological uncertainty, and adaptive monitoring needs. They discussed the broader ecological rationale supporting spawning habitat protection, even in situations where measurable fishery outcomes remain difficult to quantify. The panel emphasized limited long-term monitoring capacity, insufficient comparison data, uncertainty regarding recruitment contribution, and the need for expanded biological and socioeconomic research.

The group also discussed emerging technologies and integrated monitoring frameworks as potential future tools for improving evaluation capacity.

The Habitat and Ecosystem Advisory Panel favored precautionary retention of the SSMZs while expanding monitoring programs, biological sampling, and adaptive evaluation frameworks.

5.4 Snapper Grouper Advisory Panel

The Snapper Grouper Advisory Panel focused heavily on the fishery, stakeholder awareness, management clarity, and long-term conservation tradeoffs. Advisors discussed both the biological rationale for protecting spawning habitat and the operational realities associated with offshore fishing activity. They highlighted limited awareness of the SSMZs among fishermen, concerns regarding enforcement feasibility, uncertainty regarding measurable biological outcomes, and the importance of stable long-term management areas for scientific evaluation.

Several advisors also emphasized that even relatively small protected areas may still provide meaningful biological value.

The Snapper Grouper Advisory Panel supported maintaining the SSMZs while improving outreach, evaluation transparency, and future monitoring efforts.

6. Management Implications and Recommendations

The advisory process identified several important implications for future Council deliberations regarding the SSMZs. Although uncertainty remains regarding the magnitude of long-term

biological benefits, the evaluation demonstrated broad support for continuing a precautionary and adaptive management approach while improving implementation effectiveness.

Overall, advisors viewed the SSMZ network as a potentially valuable conservation tool whose long-term success depends heavily on improved monitoring, stronger stakeholder awareness, enhanced enforcement coordination, and more systematic evaluation frameworks.

6.1 Preliminary Management Direction

Based on advisory input collected during the evaluation, the prevailing management direction included retaining the existing SSMZ network in the near term, maintaining protections pending additional information, and improving implementation capacity before considering major changes.

Few advisors advocated removing protections outright, and most groups concluded that existing uncertainty does not provide a sufficient basis for eliminating the current management measures.

6.2 Recommended Management Priorities

Recommended Priority 1: The Council should prioritize improved public communication and stakeholder education.

Recommended outreach improvements include expanded integration into chartplotters, improved fishing application visibility, marina and tackle shop outreach, social media campaigns, and updated educational materials. Improved stakeholder awareness was consistently identified as one of the most practical near-term opportunities for improving compliance.

Recommended Priority 2: The Council should also continue exploring integrated monitoring technologies including AIS or VMS, satellite imagery, passive acoustic monitoring, and AI-assisted detection tools.

Recommendation Priority 3: Advisors consistently emphasized the need for expanded long-term monitoring programs capable of supporting adaptive management decisions. Priority needs include expanded biological sampling, recruitment and connectivity analysis, socioeconomic monitoring, comparison-site evaluation, and standardized performance metrics.

Recommended Priority 4: The advisory process supported continued management review of the SSMZ network.

Future evaluations should incorporate standardized metrics, improve stakeholder participation, establish clearer performance benchmarks, and continue integrating emerging scientific information. Advisors emphasized that long-term ecological processes associated with spawning protection may require extended evaluation timeframes before measurable outcomes become fully detectable.

The workgroup emphasized that future monitoring, research, outreach, and enforcement activities should be coordinated among NOAA Fisheries, the U.S. Coast Guard, state resource agencies, non-governmental organizations, and the Council. Members noted that funding for SSMZ-related activities should, where practical, be coordinated with existing programs and collaborative initiatives to maximize efficiency, leverage partner expertise, and avoid duplication of effort.

Advisors also recognized that offshore enforcement resources remain limited, making strategic patrols essential. Improved coordination among enforcement agencies, combined with collaborative monitoring and research efforts, was viewed as an opportunity to increase effectiveness while improving the information available for future evaluations of the SSMZs.

Appendices

Advisory Panel Comments

Comments have been collected from advisory panel members of Law Enforcement, Habitat and Ecosystem, and Snapper Grouper. Additional information will be gathered from the Scientific and Statistical Committee at a later date. The panel members were given an opportunity to comment at the meeting and to use the tool developed for the Workgroup. Response rate for using the tool has been low with 1 or 2 members from each group using it.

Law Enforcement Advisory Panel

Charleston, SC
January 20, 2026

Overview

The meeting focused on evaluating South Atlantic spawning special management zones (SMZs), including three hard-bottom areas with a sunset clause expiring in July 2027 and two South Carolina artificial reef areas created in the late 1990s/early 2000s. Law enforcement and advisory panel members discussed whether these areas should remain as-is, be modified, or have management removed, with recurring themes of weak enforcement capacity, limited monitoring resources, and the need for better outreach and education.

Purpose of the Evaluation

The presenter explained that the session was intended to gather law enforcement advisory panel input to inform the System Management Plan Workgroup, a broader group made up of fishermen, scientists, outreach staff, and law enforcement. The goal was to assess whether the SMZs are effective and how they should be managed going forward, especially given the upcoming 2027 sunset for the three hard-bottom areas.

Background on the Areas

The protected areas discussed include three hard-bottom spawning SMZs and two artificial reef areas managed by the South Carolina Department of Natural Resources. The artificial reefs were created over sand bottom and were not originally placed on public maps; they were intended more as fish refuge areas than traditional fishing reefs. The presenter noted that, although the reef areas do not have a sunset clause, management can still be changed if warranted.

Prior Advisory Panel Concerns

The presenter reviewed conclusions from Amendment 36 and earlier law enforcement advisory panel comments. Key concerns included:

- The sites are very small, far offshore, and difficult to enforce.
- Buoys were suggested, but they could create issues near shipping channels and may be problematic for protected species such as whales.
- Transit rules and stowage requirements were considered consistent with other closed areas.
- The areas are mostly square or lat/long-based boxes, with one area following a depth contour more closely.

- The spawning SMZs should appear on NOAA charts, but NOAA's line office does not allow permanent inclusion because the areas are not permanent.
- The team has worked with providers such as Garmin and Fish Rules to improve visibility of the closures on electronic tools.

Research and Monitoring Efforts

The presenter said this was the first evaluation cycle for these areas, even though it should have happened more regularly. Research has been limited by funding and has focused on likely spawning seasons for target species:

- Warsaw Hole: sampling around Warsaw grouper and greater amberjack spawning periods.
- Devil's Hole: sampling during scamp spawning season.
- South Cape Lookout: sampling around red grouper spawning season.
- The two artificial reef areas: sampling has occurred, but mostly to document species presence rather than spawning condition.

Survey Results Shared With the Group

The presenter summarized survey responses, noting that only four responses were received and that the results were mixed but generally leaned positive on the original planning:

- Planning and purpose: respondents agreed that the management purpose and objectives were clearly defined.
- Boundaries: most felt the boundaries were clear and based on habitat or known aggregation sites.
- Roles and responsibilities: responses were weaker, with some disagreement or neutrality about whether monitoring and implementation responsibilities were clearly defined.
- Coordination: this received more negative feedback, with several respondents saying coordination was limited.
- Resources and enforcement: respondents said there were not enough monitoring and enforcement resources, particularly for South Cape Lookout.
- Outreach and communication: this was identified as needing improvement.
- Enforcement and compliance: responses suggested irregular enforcement and weak compliance in some areas.
- Outcomes: respondents were divided or unsure about whether to retain, modify, or remove the areas.

Discussion on Effectiveness of Closures

A key discussion point was whether closures like these actually improve fish stocks. One participant argued that protected areas often fail to show clear biomass benefits outside the closed box and cited the Gulf of Mexico as an example where closures did not deliver the expected results. In response, the presenter acknowledged that strong proof is difficult to produce and described that the "holy grail" of research would be directly showing movement from protected spawning areas into broader populations.

The presenter said current science offers only limited evidence, mostly through:

- simulation studies of larval drift,
- spawning-season sampling,

- and new techniques such as close-kin mark recapture.

The group also discussed examples where closures may have worked better, especially Riley's Hump in the Florida Keys, where members said mutton snapper populations appeared to improve after closure. That example was repeatedly described as a strong success story.

Enforcement Challenges

Enforcement was a major theme throughout the discussion. Several participants said these offshore closures are difficult to patrol consistently, especially more than 60 miles offshore. Key points included:

- VMS can help identify vessels in closed areas, but VMS alone does not prove illegal activity without on-water or aerial confirmation.
- Patrol frequency is limited by vessel range, personnel, and available resources.
- In some states, enforcement coverage is especially thin, relying heavily on NOAA, Coast Guard, JEA, and air support.
- Radar and modern boat technology make enforcement harder because fishermen can detect patrols sooner.

Despite these limitations, participants said VMS, flights, and coordinated patrols can still help target enforcement more effectively.

Outreach and Education

Several speakers emphasized that better public education may be one of the most practical improvements. Suggestions included:

- Put more effort into outreach rather than buoys.
- Distribute flyers, rack cards, and similar materials more widely.
- Improve visibility in fishing apps and electronic tools.
- Make sure the public clearly understands coordinates, boundaries, and the purpose of the zones.

The presenter also noted that a flyer for the spawning SMZs already exists and includes coordinates in latitude/longitude format.

Views on Buoys and Mapping

There was strong skepticism about using buoys as a primary compliance tool. One participant said buoys should not matter from an enforcement perspective because coordinates and GPS are the real standard offshore. Others agreed that buoys can disappear, create confusion, or become unreliable as evidence. The group favored better information delivery over physical markers.

Participants also asked whether the zones could appear in logbook-related mapping tools or fishing apps used daily by anglers. The presenter said they are working with providers to improve that visibility, though the process is slow.

Compliance and Public Perception

Multiple participants stressed that compliance is essential for these areas to be effective. If people ignore closures and avoid being caught, then the zones may protect only the people who already follow the rules. Speakers said low compliance undermines stakeholder confidence in management.

One participant argued that the public needs to see actual enforcement cases and outcomes after adjudication so that violators understand there are consequences. Another noted that enforcement perceptions differ between recreational and commercial sectors, with recreational violations sometimes receiving less lasting scrutiny because of political influence or public attitudes.

Retention Views

By the end of the discussion, there was no clear consensus to remove the zones. Instead, the main recommendations were:

- improve outreach and education,
- consider VMS or similar monitoring tools where possible,
- strengthen coordination among NOAA, Coast Guard, state agencies, and other partners,
- and focus on better documentation of effectiveness.

The presenter summarized the group's feedback as leaning toward keeping the zones in place for now while improving compliance strategies and public awareness, especially since the current evidence base is not strong enough to justify major changes with confidence.

Key Takeaway

The group broadly agreed that the spawning SMZs and related artificial reef protections may have value, but their success is constrained by limited enforcement, poor public awareness, and weak evidence of measurable biological outcomes. The strongest near-term path forward identified in the meeting was to improve outreach, monitor compliance more effectively, and continue evaluating whether these areas should remain unchanged, be modified, or eventually be removed.

Habitat and Ecosystem Advisory Panel

Webinar
January 29, 2026

Overview

The meeting focused on evaluating the Council's spawning special management zones (SMZs), created in Amendment 36 in 2017 to protect spawning habitat, reduce bycatch, and support conservation goals while minimizing social impacts. The discussion reviewed the zones' design, monitoring history, preliminary survey results, and whether the areas should be retained, modified, or removed.

Purpose and Design of the SMZs

The five spawning SMZs were established to protect important spawning habitat and species that may aggregate in predictable locations year after year. The areas are intended to reduce bycatch and bycatch mortality, particularly for speckled hind and Warsaw grouper, while also helping prevent overfishing and achieve optimum yield under National Standard 1.

The five zones are:

- South Cape Lookout
- Devil's Hole / Georgetown Hole
- Warsaw Hole

- Area 51
- Area 53

These areas are very small, with the largest about 5 square miles. The natural reef sites were selected because they appeared to host multiple spawning species and had distinctive habitat features, while the artificial reef sites were originally created for fish population rebuilding and later designated as spawning SMZs.

Regulations and Scope

The SMZ regulations prohibit harvest and possession of snapper-grouper species within the zones, using a broad definition that covers the full fishery complex. The rules also allow transit through the areas if gear is properly stowed and prohibit anchoring by fishing vessels.

The three natural reef SMZs have a sunset clause, meaning the regulations will expire after July 2027 unless renewed.

Habitat, Focal Species, and Monitoring

The natural reef sites include different habitat types, including promontory-like areas with strong edges and a flatter pavement area. Monitoring and research discussed included:

- A larval connectivity model by Brothers et al.
- Sampling by The Nature Conservancy and LGL during spawning seasons
- Monitoring of artificial reefs by the South Carolina Aquarium
- Opportunistic data collection by the Southeast Reef Fish Survey

The research suggested some sites may contribute more than others, but overall the small size of the zones means their measurable contribution may be limited.

Why the Evaluation Is Happening

The evaluation was described as necessary to make sure the SMZs are doing what they were intended to do and are not functioning as a "black box." The review is focused on planning and design, inputs such as resources and capacity, processes such as enforcement and outreach, and outputs and early outcomes. The evaluation also considers whether management should stay the same, be modified, or be changed in some other way.

Main Survey Findings

Overall, responses were more positive on planning and design than on implementation capacity and outcomes.

Planning

Responses were mostly positive on whether the areas were clearly designated, whether the objectives matched the purpose of spawning protection, and whether documentation was sufficient. Responses were more neutral on whether the boundaries fully encompass known spawning areas.

Roles and Responsibilities

The review suggested the Council did well on defining roles and making decisions transparently. Coordination among agencies and stakeholder engagement were less positive.

Resources and Data Collection

Resources were viewed as inadequate across the areas, including funding, personnel, vessels, and access to data. Data collection programs were also often seen as insufficient.

Management Measures

Responses were mixed on whether management measures are being implemented as intended, with some sites viewed more positively than others.

Outcomes

For several sites, outcomes were rated as negative or insufficiently known for biological indicators, habitat condition, non-target species trends, compliance, and stakeholder buy-in

In many cases, the main response was to retain the areas as is or to say there was not enough information to decide.

Site-by-Site Themes

South Cape Lookout

This site received mixed to negative feedback on resources and data programs. Biological indicators, habitat condition, non-target species outcomes, compliance, and stakeholder buy-in were all viewed as weak or uncertain. The dominant response was retain as is or insufficient information.

Area 51 and Area 53

These artificial reef sites were viewed somewhat more positively than South Cape Lookout, especially for biological indicators, habitat condition, and non-target species trends. Compliance remained largely unknown, and stakeholder buy-in was still mixed.

Devil's Hole

This site received the strongest overall feedback. Data collection, management implementation, and biological outcomes were viewed more positively, though there was still a need for better information overall.

Warsaw Hole

This site showed inadequate resources, weak or uncertain data collection, and mixed views on management implementation. Outcomes remained uncertain, though stakeholder engagement was somewhat more positive.

Cross-Area Evaluation

Across all areas, the review suggested planning is the strongest area, enforcement, compliance, and outreach need improvement, funding, staffing, and monitoring capacity are weak, outputs show limited progress, and outcomes are variable and often uncertain.

The most common improvement priorities were:

- More biological, social, and economic research
- More funding and capacity for monitoring and management
- Better compliance and enforcement
- Stronger outreach and education
- Ongoing monitoring of biological, economic, social, and environmental trends

Major Concerns and Ideas

A recurring concern was that the zones are offshore and difficult to monitor, especially because most are more than 30 miles offshore. Another major issue was the lack of comparison data from nearby unprotected areas.

Several monitoring and enforcement tools were discussed as possible solutions:

- Satellite imagery
- Vessel Monitoring Systems
- AIS data
- Passive acoustic monitoring
- AI-based detection of spawning fish and vessel activity
- Multi-method predictive models combining several data sources

A separate offshore sanctuary study was described as an example of how combining AIS, satellite imagery, hydrophones, cameras, vessel surveys, and aerial surveys can identify visitation patterns and improve enforcement targeting.

Retention Views

The overall direction of the discussion leaned toward retaining the zones. The main rationale was that the original conservation purpose still appears valid, there is evidence of spawning activity in the closed areas, and there is not enough information to justify removing protections.

Snapper Grouper Advisory Panel

Charleston, SC

April 23, 2026

Overview

The meeting focused on the South Atlantic Snapper Grouper Advisory Panel's review of the spawning special management zones (SSMZs), including the purpose, research basis, evaluation tool, and whether the existing sunset provisions should remain. Discussion centered on three natural reef areas with sunsets—South Cape Lookout, Devil's Hole, and Warsaw Hole—and the panel ultimately leaned toward keeping the zones in place while improving outreach and education.

Background on the SSMZ Program

The presentation reviewed why the council created the spawning SMZs in Amendment 36 and established them in 2017 after work from 2012–2016. The core purpose was to protect important spawning habitat, enhance spawning, reduce bycatch and bycatch mortality for species such as speckled hind and Warsaw grouper, prevent overfishing, and achieve optimum yield while minimizing social and economic impacts.

The areas discussed are very small in total—less than 20 square miles combined, comparable in scale to a downtown area. Because of their size, presenters noted that the bycatch reduction and mortality-reduction goals are ambitious, but the areas may still provide meaningful spawning protection and some spillover benefits.

Regulations and Management Purpose

The regulations prohibit fishing for harvest of, and possession of, snapper grouper species inside the zones, and anchoring is not allowed. A transit provision allows possession of snapper grouper species if gear is properly stowed. The management goal is to protect multiple spawning species where fish may aggregate, while supporting long-term conservation and minimizing negative effects where practical.

The focal species list included groupers, greater amberjack, several snappers including blackfin, cubera, mutton, red, silk, and yellowtail, plus golden tilefish and blueline tilefish. It was noted that some of the current sites are not expected to be ideal habitat for golden or blueline tilefish, but those species were included for flexibility if new protected areas are created later.

Research and Evidence Discussed

A substantial portion of the meeting reviewed existing habitat mapping, underwater video, biological sampling, and larval connectivity research. Speakers noted that although the areas are tiny, research indicates they can produce larvae that recruit back into the South Atlantic region.

Biological samples collected through work supported by The Nature Conservancy, LGL Associates, and South Carolina DNR showed spawning condition in focal species at the natural reef sites:

- Warsaw Hole: Warsaw grouper and greater amberjack
- Devil's Hole: gag grouper and scamp grouper
- South Cape Lookout: red grouper and red snapper

For artificial reefs, monitoring by the South Carolina Aquarium and other efforts have documented species such as black sea bass, gag grouper, and red snapper, with some observations of spawning condition at Area 53. The Southeast Reef Fish Survey and a master's thesis were also referenced as contributing evidence.

Evaluation Tool and Panel Feedback

The council's system management plan workgroup created an evaluation tool to assess whether the SSMZs are meeting their goals. The evaluation covered planning, implementation, management measures, outcomes, and stakeholder support.

For the two zones evaluated by that morning—Area 53 and Warsaw Hole—the feedback was mixed to negative on operational issues:

- Adequate resources for monitoring and enforcement: disagreed or strongly disagreed
- Enforcement sufficiency: disagreed or strongly disagreed
- Data collection: neutral
- Gear/possession/transit rule implementation: one disagreed
- Outreach and education materials: neutral
- Enforcement actions/compliance: disagreed or strongly disagreed
- Biological outcomes: mixed, with some disagreement about effectiveness in abundance/spawning activity

- Habitat condition: neutral
- Non-target impacts: strongly disagreed on displacement/crowding concerns for Area 53
- Stakeholder support: negative for Area 53, but more favorable for Warsaw Hole

Based on the written responses, Area 53 was recommended for a modified approach, including the idea of cycling different spawning special management zones on and off rather than keeping them closed continuously. Warsaw Hole was also recommended for modification, with comments that the area should have been larger to protect more habitat.

Advisory Panel Discussion on Survey Limitations

Several panel members said the survey questions were too vague or difficult to answer for sites they do not know well, especially South Cape Lookout. Multiple members asked for an "NA / not applicable" option so they could avoid guessing on questions they were not qualified to answer.

Members also said many AP participants were unfamiliar with the SSMZs, especially recreational and even some commercial fishermen, and that the current information is not always accessible in a digestible format. Staff acknowledged the challenge of presenting extensive research in a short meeting and explained that the advisory panel input, along with online responses, would be consolidated into a written summary.

Outreach and Enforcement Themes

Outreach emerged as one of the strongest themes. Members suggested:

- Include the zones on electronics and chartplotters
- More physical marking, though cost and practicality were concerns
- Social media, magazines, tackle-shop outreach, and newsletters
- Clearer enforcement communications showing that violations do occur
- Better education for anglers who may not realize the zones exist

Several participants noted that newer electronics often already show the zones, but older systems and casual users may not. Others argued that enforcement is limited by the sheer size and offshore location of some areas, making awareness and education more important than relying on enforcement alone.

Views on Keeping or Removing the Zones

The panel discussion trended toward keeping the SSMZs in place. Supporters cited:

- Evidence of spawning fish in the zones
- The importance of protecting high-value spawning habitat
- The value of long-term, stable management areas for research and monitoring
- The possibility that even small protected areas can matter biologically

Those more skeptical emphasized:

- Limited enforcement capacity

- Very small area size relative to the broader spawning range
- Uncertainty about how effective area closures are compared with time-based closures
- Confusion over how much fishing actually occurs inside the zones

Despite those concerns, the informal show of hands suggested the AP was comfortable with the zones remaining effective rather than letting the sunset clauses expire.

Clarification on Deepwater MPAs vs. SSMZs

The discussion also clarified that the Deepwater MPAs are distinct from the spawning SMZs. Deepwater MPAs were created to reduce discard mortality and protect juvenile fish, while SSMZs are focused on protecting spawning fish and spawning habitat. Some participants initially confused the two systems because both involve protected fishing areas.

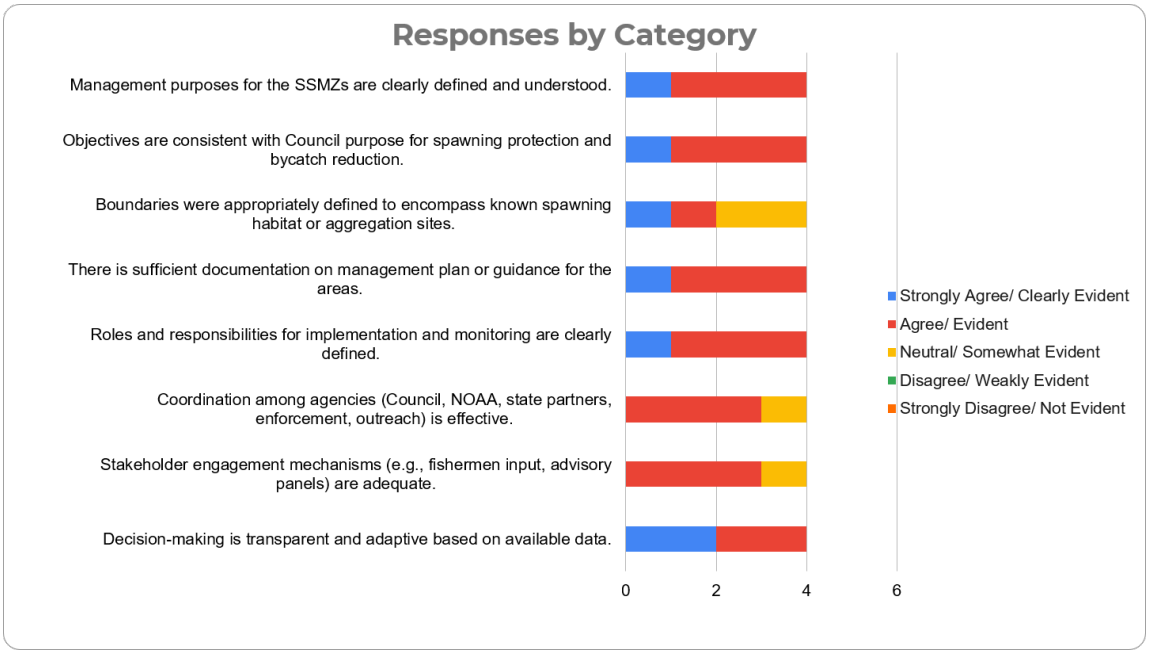
Staff explained that the Deepwater MPAs do not have sunset clauses, while the natural reef SSMZs do. The Council is specifically reviewing whether the SSMZ regulations for South Cape Lookout, Devil's Hole, and Warsaw Hole should remain, be modified, or be removed.

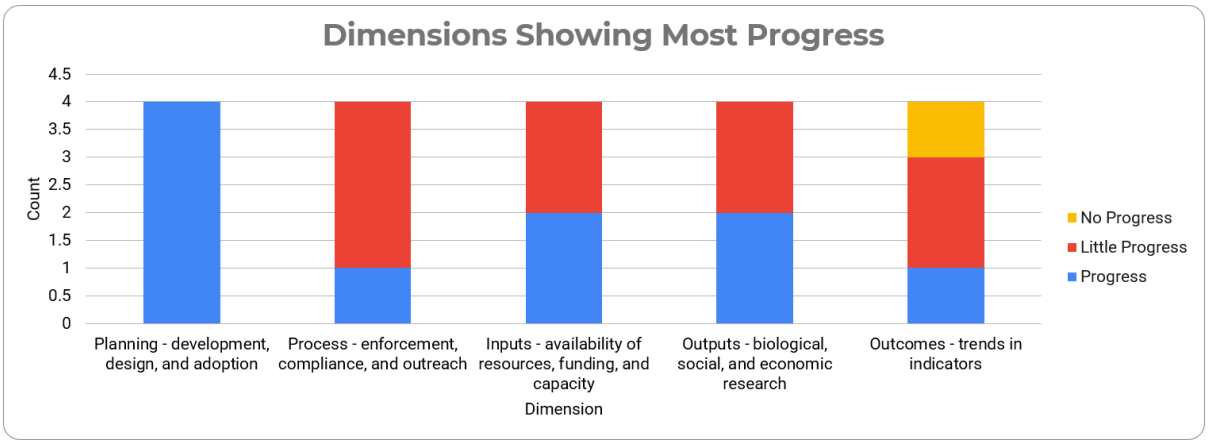
Retention Views

The AP's discussion ended with a consensus to support keeping the SSMZs, while recognizing the need for better outreach, clearer education materials, and more systematic evaluation of site effectiveness. There was also interest in better data collection in the future, including comparisons of inside-versus-outside catch rates if a properly designed survey becomes available.

SMP Workgroup Preliminary Responses to Evaluation Survey

Four members fill out the evaluation survey tool and the responses were used as a strawman for discussion by the workgroup. The below figures are not the final recommendations from the workgroup. The report represents the final recommendations.




Dimensions Showing Most Progress
Count
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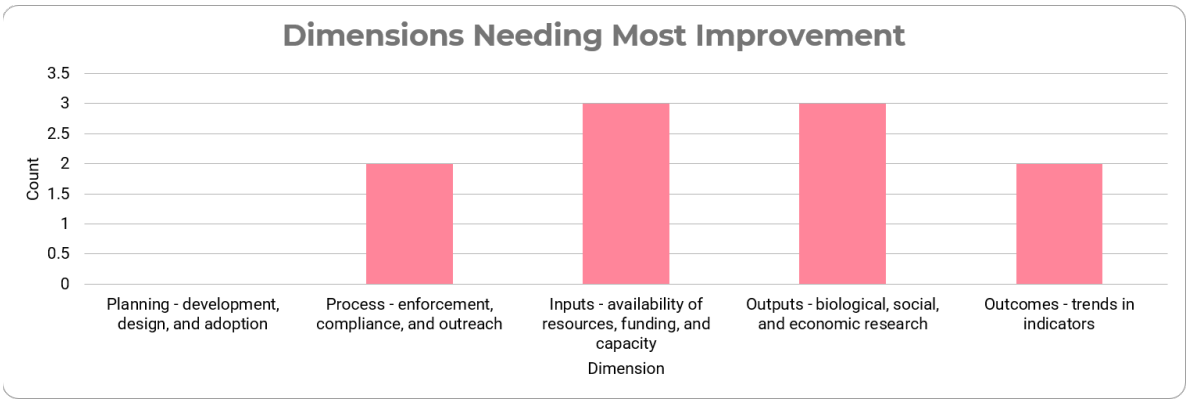
4
3.5
3
2.5
2
1.5
1
0.5
0
Planning - development, design, and adoption
Process - enforcement, compliance, and outreach
Inputs - availability of resources, funding, and capacity
Outputs - biological, social, and economic research
Outcomes - trends in indicators
Dimension
No Progress
Little Progress
Progress


Dimensions Needing Most Improvement
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2.5
2
1.5
1
0.5
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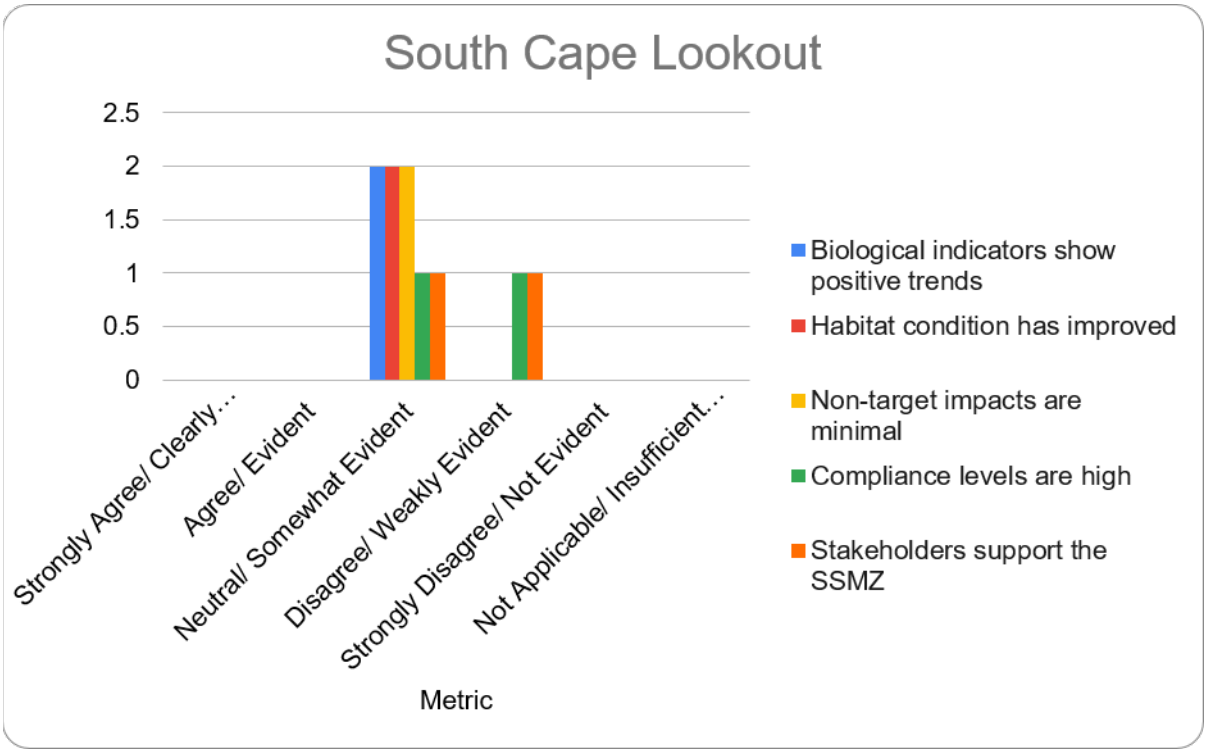
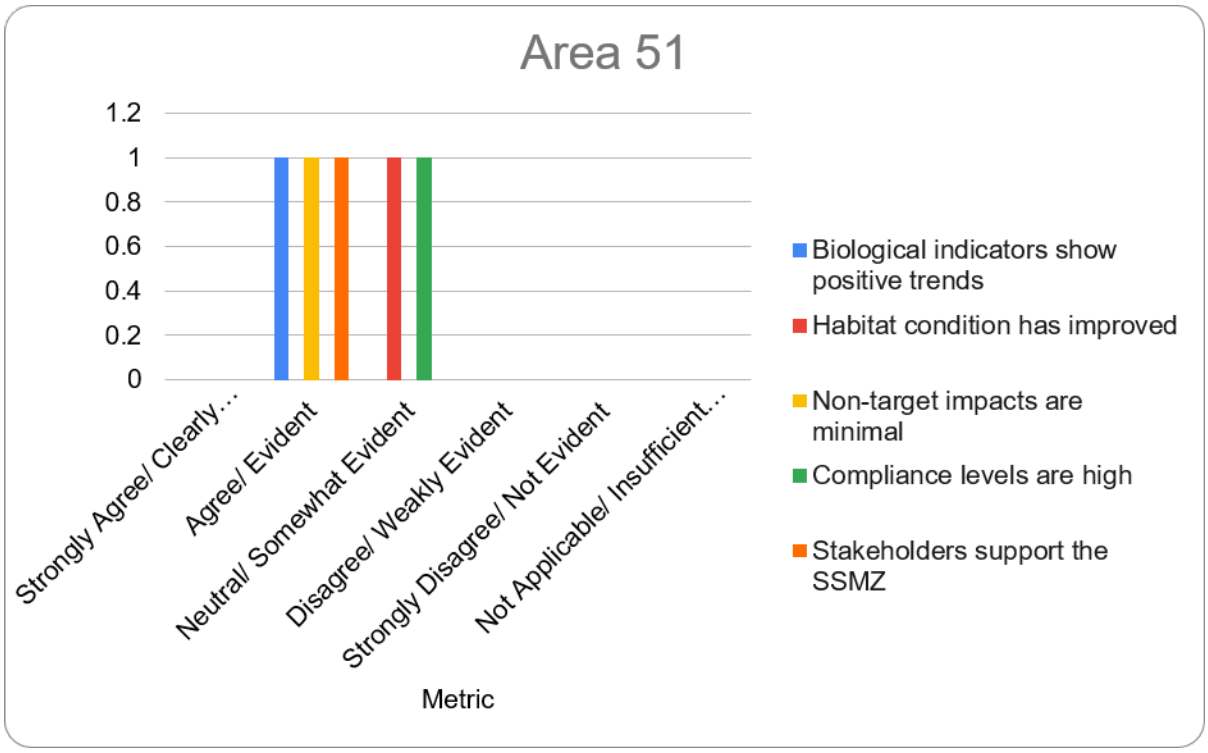
Planning - development, design, and adoption
Process - enforcement, compliance, and outreach
Inputs - availability of resources, funding, and capacity
Outputs - biological, social, and economic research
Outcomes - trends in indicators
Dimension


South Cape Lookout
2.5
2
1.5
1
0.5
0
Strongly Agree/ Clearly…
Agree/ Evident
Neutral/ Somewhat Evident
Disagree/ Weakly Evident
Strongly Disagree/ Not Evident
Not Applicable/ Insufficient…
Metric
Biological indicators show positive trends
Habitat condition has improved
Non-target impacts are minimal
Compliance levels are high
Stakeholders support the SSMZ


Area 51
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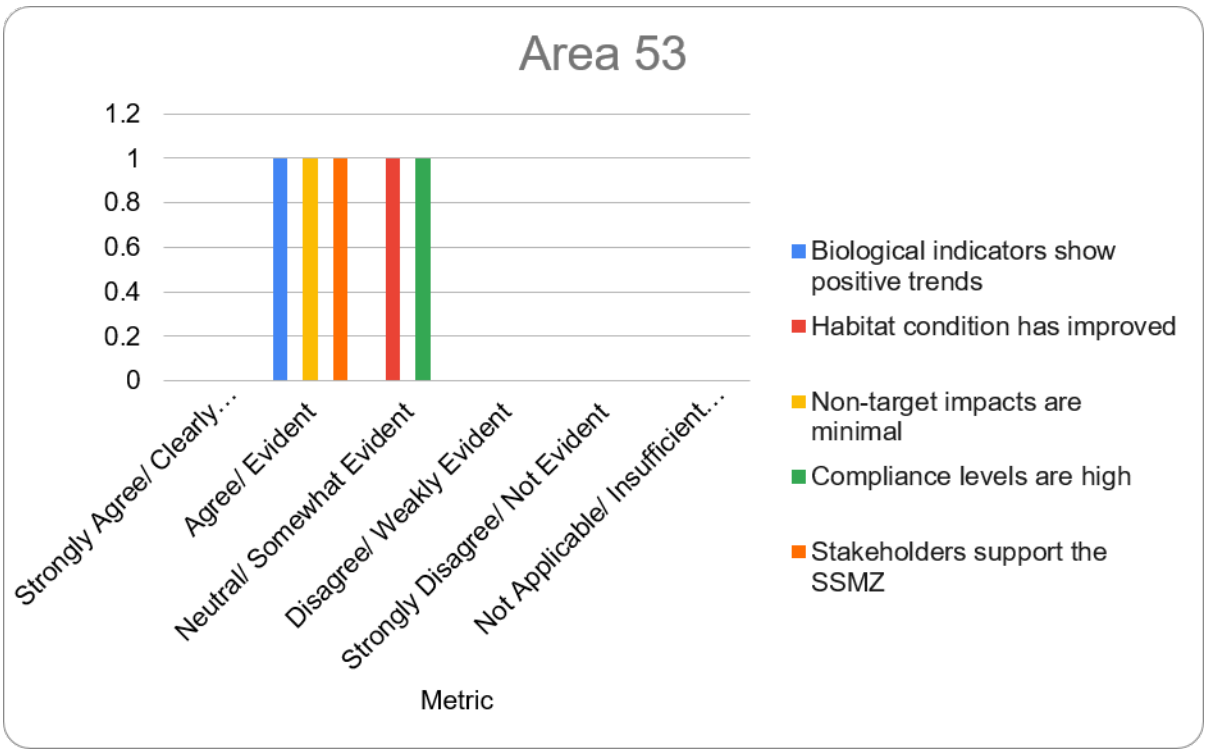
1
0.8
0.6
0.4
0.2
0
Strongly Agree/ Clearly…
Agree/ Evident
Neutral/ Somewhat Evident
Disagree/ Weakly Evident
Strongly Disagree/ Not Evident
Not Applicable/ Insufficient…
Metric
Biological indicators show positive trends
Habitat condition has improved
Non-target impacts are minimal
Compliance levels are high
Stakeholders support the SSMZ


Area 53
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0.8
0.6
0.4
0.2
0
Strongly Agree/ Clearly…
Agree/ Evident
Neutral/ Somewhat Evident
Disagree/ Weakly Evident
Strongly Disagree/ Not Evident
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Metric
Biological indicators show positive trends
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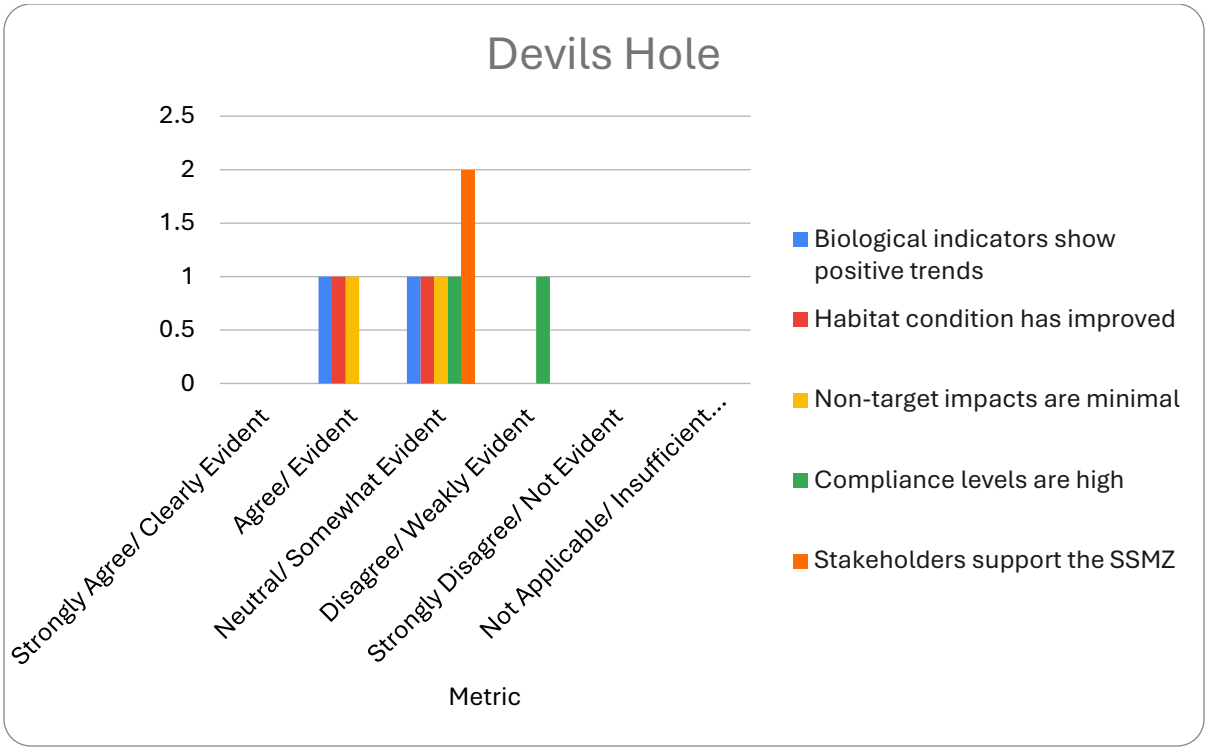

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