

DRAFT REPORT

BEST FISHING PRACTICES OUTREACH EVALUATION WORKSHOP

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Executive Summary

Best Fishing Practices Outreach Evaluation Workshop Background

Regulatory measures, combined with increased fishing effort in the South Atlantic snapper grouper fishery, particularly from the recreational sector, have led to a sharp rise in the number of non-target snapper and grouper species that must be released. Because many released fish do not survive, improving release practices has become essential for sustaining fish stocks. While best fishing practices (BFPs), including the use of descending devices, are promoted by both managers and fishermen, more consistent outreach and education are needed to ensure widespread adoption.

To support this effort, the South Atlantic Fishery Management Council (Council) expanded its BFP Outreach Initiative and in early 2025 convened a workshop with researchers and outreach partners to evaluate progress, share findings, and develop recommendations to strengthen future outreach and evaluation efforts. Workshop attendees received presentations on social norm messaging in environmental conservation, best fishing practices research and evaluation efforts, and the role of best fishing practices in the science and management project. After each set of presentations, attendees were broken up into “think tanks” to discuss outreach and research recommendations. The resulting recommendations were then discussed with the entire group during plenary sessions, resulting in a final list of action-oriented recommendations.

Best Fishing Practices Outreach Evaluation Workshop Objectives

Develop recommendations for executing and evaluating best fishing practices outreach efforts to incorporate into ongoing outreach campaigns and future strategic planning, such as the South Atlantic Research and Monitoring Prioritization Plan for 2025-2029.

- **Objective 1:** Discuss the effectiveness of current outreach efforts and suggest improvements.
- **Objective 2:** Identify gaps in knowledge and stakeholder understanding of best fishing practices.
- **Objective 3:** Identify connection points between outreach, outreach evaluation, and the science and management process

Best Fishing Practices Outreach Evaluation Workshop Priority Actions

- An understanding of existing norms within different groups and communities participating in the recreational snapper grouper fishery including how anglers identify themselves within their perceived group and in relation to other groups, angler sentiment on a variety of species, and trip satisfaction tradeoffs.
- A meta-analysis across a range of species and best fishing practices to understand the range of benefits, including identification of high-effect, low-adoption practices.
- An evaluation of the current Council outreach programs to understand program outcomes versus goals and objectives, barriers to success, and to define clear and measurable success metrics to guide future program adjustments.
- Data collection on prevalence of use and knowledge of descending devices from citizen science work as well as observer coverage to validate angler submitted data and aggregation of this data across platforms.
- Stock assessment simulations/sensitivities or management strategy evaluations to estimate how adoption of best fishing practices affects stock dynamics and future productivity.

Introduction

Regulatory measures combined with growing fishing effort in the South Atlantic snapper grouper fishery, particularly from the recreational sector, have led to a drastic increase in the number of non-target snapper and grouper that must be released. Due to the multispecies nature of the snapper grouper fishery, it is common for non-target species to be caught and released due to regulatory or other reasons, while fishing for other species. The increase in releases has led to an increase in the number of fish that do not survive after being caught and released. While there are management and fishermen efforts in place aimed at improving survival after release through best fishing practices (BFP) and the use of descending devices, more outreach and education are needed to ensure these practices become ubiquitous throughout the fishery.

The South Atlantic Council's Best Fishing Practices Outreach Initiative was expanded in December 2022. Evaluation of the outreach efforts conducted is key in ensuring that the goal of increasing the use of BFP in the South Atlantic snapper grouper fishery is achieved. Yet, it can be challenging for Council staff to complete this work due to time and funding constraints as well as policy constraints due to the Paperwork Reduction Act (PRA). Fortunately, in recent years, there has been increased interest in exploring stakeholder perception and usage of BFP, namely barotrauma mitigation tools like descending devices. Several survey-based studies have been completed throughout the South Atlantic and Gulf of Mexico region. However, they all ask slightly different questions, focus on different areas, or are not longitudinal in nature, making it challenging to determine changes in fishing behavior throughout the South Atlantic region. To help aid the Council, researchers conducting work on BFP perceptions, outreach, and usage were invited to a workshop to present their work and discuss how it may benefit the Council's BFP program.

Goals and Objectives

Overall Goal: Develop recommendations for executing and evaluating best fishing practices outreach efforts to incorporate into ongoing outreach campaigns and future strategic planning, such as the South Atlantic Research and Monitoring Prioritization Plan for 2025-2029.

- **Objective 1:** Discuss the effectiveness of current outreach efforts and suggest improvements.
 - Think Tank Deliverable: Recommendations on how to incorporate normative messaging into current best fishing practices outreach in the South Atlantic and what information may be needed to ensure campaigns are effective.
- **Objective 2:** Identify gaps in knowledge and stakeholder understanding of best fishing practices.
 - Think Tank Deliverable: Recommendations for future data collection efforts that would fill identified gaps in our understanding of best fishing practices knowledge and compliance rates in the South Atlantic region.
- **Objective 3:** Identify connection points between outreach, outreach evaluation, and the science and management process
 - Think Tank Deliverable: Recommendations on how outreach staff and researchers can ensure their efforts are providing information that will better inform the science and management processes.

Theme One: Social Norms in Environmental Conservation

Introduction to Social Norms and Angler Behavior – Dr. Chelsey Crandall, FWRI

Workshop participants received an introduction to social norm theory, highlighting the powerful role of social norms in shaping fishermen behavior and outlining practical strategies incorporating social norms into best fishing practices outreach efforts.

Explaining classic social psychology theory, the presentation defined norms as both the behaviors people observe in others (descriptive norms) and what they believe others expect of them (injunctive norms). Studies from outside fisheries, such as energy conservation campaigns, demonstrate that visible, modeled behaviors drastically increase compliance, underscoring the importance of peer influence. Within Florida's reef fisheries, research on barotrauma mitigation showed that while attitudes and self-efficacy influenced intentions, social norms were the strongest predictor of whether fishermen intended to use venting tools or descending devices. This suggests that outreach efforts emphasizing community practices and social approval may be more effective than relying solely on education or regulation.

The take-home messages stressed that social norms are a key driver of behavior change in fisheries, often more influential than knowledge or personal attitudes; outreach should highlight what peers are doing and what the community approves of, making desired behaviors more visible; outreach efforts can leverage both descriptive norms (most fishermen are doing this) and injunctive norms ("responsible anglers approve of this behavior") to encourage compliance; and messaging must be crafted carefully, since drawing attention to negative behaviors can unintentionally reinforce them. Ultimately, the presentation called for a more deliberate and evidence-based use of social norms in best fishing practices outreach to foster long-term behavioral change.

Social Norms and Conservation: Case Studies – Christina Wiegand, SAFMC Staff

Workshop participants then received a presentation exploring how conservation outreach efforts outside of fisheries leveraged social norms in their campaigns. The first case study was an example of wildlife viewing in national parks, where effectively encouraging safe and respectful behavior depended not on warning against harmful actions, but instead on promoting appealing, practical alternatives. This communication strategy drew park visitors toward positive behavior rather than reacting to negative ones. The second case study focused on landowner behavior in Minnesota, demonstrating that outreach campaigns are most successful when they foster landowners' sense of responsibility, personal norms, and self-efficacy. The individuals in the study were more likely to act when they felt capable and morally motivated to do so. The final case study focused on best hunting practices, highlighting the importance of tapping into hunter identities. By framing ecosystem stewardship as consistent with hunters' values and roles, outreach was able to help internalize desired behaviors as part of a hunter's identity and commitment to sustainable practice.

The take-home message of the presentation was that successful outreach campaigns emphasize positive alternatives, grounded in values and identity, and are crafted in ways that inspire confidence and responsibility. This can be translated to best fishing practices outreach by utilizing messaging that emphasizes that best fishing practices are feasible and connected

to fishermen values. Positive messaging is more likely to encourage behavioral change than messaging that simply focuses on preventing negative outcomes (like high discard mortality).

Think Tank Discussions

Think tanks explored the ways normative messaging is currently used in fisheries outreach, where management agencies can better use injunctive and descriptive norms in outreach and what information is still needed to develop successful normative messaging campaigns for best fishing practices. Think tanks provided the following comments:

Current Use of Normative Messaging in Fisheries Outreach

- Communication from trusted fishermen, captains, and community leaders is emphasized over agency-driven messaging.
- In-person engagement at tackle shops and industry events, meeting fishermen where they get trusted information.
- BFP MVP program invites respected fishers to participate and share practices with members of their communities.
- Self-policing has started emerging in some fisheries:
 - Shark and billfish fisheries: negative practices highlighted on social media.
 - Rockfish fishery on the west coast: community pressure around descending device use.
- Self-policing is an example of a shift from injunctive to descriptive norms:
 - Injunctive: rack cards and agency messages (“do this, it helps you”).
 - Descriptive: community leaders are modeling best practices.

How Can Management Agencies Use Normative Messaging in Outreach Campaigns

- Outreach should do a better job of connecting the dots and explaining how best fishing practices directly improve the fishery and benefit fishermen.
 - Show how descended/tagged fish reappear and support science/management.
 - Illustrate how individual actions feed into the bigger picture.
- Providing ownership to the fishery by using language like “your fishery” will reinforce responsibility.
- Target fishermen not currently using best fishing practices and incentivize participation with positive reasons and examples.
 - Focus on the “why” behind best fishing practices—what fishermen are able to control with each fish.
 - Avoid overpromising the effect descending device usage can have on stock assessment results.
 - Frame descending devices and best fishing practices as skill or technique to be mastered and an additive to the overall fishing experience.
- Remove barriers to best fishing practices usage such as providing full toolkits (descending devices, weights, and clear instructions).

What Challenges Exist for Using Social Norms and What Research is Needed

- Significant mistrust between stakeholders and managers due to lagging data integration vs. on-the-water observations and disconnect between regulations and real-world fishing experiences.

- Management agencies prefer to control narratives, but partnerships with stakeholders require trust in external messengers.
- It is difficult to illustrate the positive effect of best fishing practices use due to long timelines for fish recovery. This makes linking individual actions to population outcomes challenging.
- More information is needed on the prevalence and patterns of best fishing practices adoption:
 - Who is or is not using descending devices and best fishing practices?
 - Characteristics of adopters vs. non-adopters.
- A better understanding of fishing communities is needed to properly tailor outreach messaging that would address social norms:
 - Who are the trusted messengers within different groups.
 - Where do fishermen share concerns (social media, local networks).
 - How norms spread through different communities and where does the tipping point occur for behavior adoption.
 - What scale of outreach (local, regional, community-specific) resonates most with different communities?
 - What are the differences across fisherman types (casual, charter, tournament, subsistence, commercial).
 - What do fishermen understand about the science and management process and how does that influence their willingness to adopt best fishing practices.
 - What defines a successful trip for different kinds of fishermen and how can best fishing practices fit into that experience.
- Species-specific perspectives are critical. There is a long of research around fishermen sentiment towards red snapper, but there needs to be a better understanding across a range of snapper grouper species.
 - Are some species more likely to trigger the use of best fishing practices than other species?

Recommendations

There are many different types of anglers targeting snapper grouper species, there is a need to better understand existing norms within these different groups and communities.

- How do anglers identify themselves within their perceived group and in relation to other groups.
- Angler sentiment on different species to allow information to be communicated in a more positive way.
- How do different groups of anglers view a successful trip? What are the key drivers and tradeoffs for trip satisfaction.

Better understanding how different types of anglers value the snapper grouper fishery would allow outreach efforts to be designed in a way that is an additive to a positive fishing experience.

- Example: if fishermen are driven by mastering different techniques, descending device usage could be marketed as another technique mastered by anglers.

Theme Two: Best Fishing Practices Outreach Research and Evaluation Efforts

Return ‘Em Right: Measuring Behavior Change through Angler Surveys– Dr. Nancy Montes, Return ‘Em Right Consultant

Workshop participants received a presentation on the Return ‘Em Right program, which provides free training and descending gear to anglers, aiming to reduce mortality among reef fish in the Gulf of America caused by barotrauma.

To measure its impact, the program conducted two surveys: the Southwick Associates Human Dimensions Survey, which targeted Gulf reef fish anglers, and a second survey focused specifically on Return ‘Em Right participants. The Southwick survey provides valuable insights into angler behavior, knowledge, and attitudes. A comparison of results from 2021 (n=3,905) to 2024 (n=3,413) displayed measurable progress. Notably, the use of descending devices increased by 21%, and more anglers reported adopting practices to reduce fish stress, such as minimizing handling and relocating when predators were present.

Beginning in 2022, the program conducted a device follow-up survey which asked anglers who had taken the Return ‘Em Right education module and had the descending devices for at least six months on their experiences with barotrauma, their device use, and their satisfaction with information and devices. Overall, anglers that participated in the program showed an increase of knowledge about the term barotrauma and how to detect it. Additionally, the survey showed high satisfaction with both the gear and the information provided with over 90% expressing being "extremely satisfied". It also showed that participants were using more venting tools before their training, but after the training and receiving their descending devices, they are using more descending and slightly more dehooking tools.

The program’s outreach efforts include social media campaigns, in-person events, and word-of-mouth promotion by participating anglers. Testimonials from users highlight the program's positive impact, with many reporting that they’ve shared the knowledge with fellow anglers. By continuously monitoring and refining its approach, Return ‘Em Right is effectively promoting conservation-minded angling and supporting the long-term health of the Gulf’s recreational fishing industry.

Reeling in Insights and Data: Collaborating with Fishermen through SAFMC Release – Meg Withers, SAFMC Staff

Workshop participants then received a presentation on the citizen science project, SAFMC Release. SAFMC Release engages commercial, for-hire, and recreational anglers through the free SciFish mobile app, which collects key information on released shallow water grouper and red snapper such as depth caught, fish length, and venting and descending device use. With the number of released fish continuing to increase in the South Atlantic and with traditional dockside sampling methods only capturing information on kept fish, the project provides a collaborative framework to address long-standing data needs. By leveraging the on-the-water knowledge of anglers, the information in SAFMC Release could be used in scientific assessments and inform management decisions.

In 2023, 73.7% of submissions came from the private recreational sector, with red snapper accounting for 71.9% of all logged releases. Most fish were caught using non-offset circle

hooks and hooked in the jaw. Fish caught at deeper depths showed an increased use of barotrauma mitigation tools, particularly descending devices. Outreach and recruitment remain key to the program's growth, employing tackle shop visits, seminars, social media engagement, and direct mailings, while retention efforts include newsletters, recognition programs, and annual data summaries.

The program highlights the essential role of anglers in data collection and the importance of ongoing outreach and relationship-building. SAFMC Release continues to showcase the value of citizen science in fishery management, fostering collaboration between scientists and anglers.

Southeast Florida and South Carolina Anglers' Release Practices and Their Attitudes Towards Descending Devices – David Moss, The Nature Conservancy

Lastly, participants received a presentation on a 2021 survey from The Nature Conservancy and Responsive Management that examined the awareness, attitudes, and release practices of anglers in Southeast Florida (n=1,188) and South Carolina (n=449).

The survey found that while most anglers recognized barotrauma symptoms, many were unfamiliar with the term. Awareness was higher among captains, with 67% of Florida anglers and 40% of South Carolina having heard of barotrauma. Despite general awareness, knowledge and use of descending devices varied. Around 60% of Florida anglers and 55% of South Carolina anglers knew of descending devices, but fewer used them. Venting tools were more commonly recognized, with 74% of Florida anglers and 70% of South Carolina anglers familiar with them. Among those who noted they release any fish, only 35% of Florida anglers and 25% of South Carolina anglers used descending devices. It was noted that many anglers were unaware of the regulation requiring them on board. Additionally, those that used both venting tools and descending devices were asked which method they preferred to use when a fish is showing signs of barotrauma. 54% of Florida anglers and 64% of South Carolina anglers indicated they preferred venting, mostly due to the ease of use and being able to mitigate barotrauma quickly.

Key factors affecting adoption included ease of use, cost, and a need for more education. Anglers relied on word-of-mouth, regulatory guides, and online resources for fishing information, suggesting that outreach through these channels, along with hands-on training and incentives, could improve adoption rates.

Think Tank Discussions

Breakout groups explored gaps in stakeholder knowledge and understanding of BFP, challenges in evaluating outreach efforts, and the role of data collection in enhancing education and engagement. Breakout groups provided the following comments:

- Consider the outreach that provides the most value.
 - Identify the preferred platforms for anglers to not just receive information, but also their preferred methods to share information on their own accord.
 - Determine the best outreach methods for resource-limited scenarios and what can have a long-term impact.
 - Direct (in-person) vs. indirect (social media, website) outreach have different impacts.

- In-person outreach messaging can be adjusted to each individual, but that cannot be done when doing bulk messaging on a website, social media, etc.

The effectiveness of outreach is difficult to quantify.

- There needs to be a better understanding of motivations and barriers to the adoption of BFP, specifically if anglers are using descending devices and if they are using them correctly.
- Outreach effectiveness depends on angler's fishing experience and community-specific needs.
- Trust in the messenger plays a large role.

There is a need for alternative evaluation methods of outreach programs beyond self-reported surveys.

- We can measure real-world adoption beyond outreach exposure (e.g., website hits, UTM codes, cost per click).
- It was suggested to send "secret shoppers" on charter trips to conduct research on whether outreach efforts lead to real behavior change.
- Open-ended approaches may provide richer insights but require more effort to analyze.

Surveys have a consistently low response rate (often below 5%), increasing the risk of bias.

- Respondents tend to be those already engaged or interested in outreach efforts. Those that are less involved need to be engaged.
- Survey fatigue is growing, and individuals may feel their feedback is not being used effectively, further discouraging participation.
- Some participants may intentionally provide misleading responses, though this is likely a small group.
- The identity of the data collectors may influence responses and trust levels.
- Long surveys discourage participation; shorter, more focused surveys may produce better results.
- Numeric rating scales (e.g., 0-10 surveys) can be frustrating for users.

Limited funding and personnel can constrain the ability to conduct thorough outreach evaluations.

- The lack of basic fisheries dependent data has made outreach more challenging.
- There needs to be a focus on what information is really needed to make effective outreach campaign improvements and management decisions.

Data collection has highlighted areas where more education is needed.

- Understanding how anglers prefer to receive information has shaped outreach methods, creating more personalized approaches.
- Offers opportunities for fishery-dependent monitoring staff and law enforcement to build relationships with stakeholders and disseminate information and materials.

Direct engagement and feedback loops increase angler buy-in by showing that their input informs management decisions.

- This includes citizen science efforts and study fleets to provide biological data and filling data gaps for stock assessment and management.

- It is very ineffective for purely applied research scientists to be responsible for their own outreach. Working with individuals who have experience with communication is critical in disseminating this information in a digestible way.

Evaluations may yield undesirable results, which can be difficult for agencies to address.

Recommendations

A thorough review of existing data collection efforts is needed to better understand the scope of angler perceptions.

- Synthesize the information we have and identify gaps that need to be filled.

Conduct a meta-analysis across a range of species and BFPs.

- Review studies to estimate conservation benefits associated with different BFPs.
- Identify high-impact, low-adoption (especially non-regulated) practices.
- Highlight where targeted outreach efforts could help improve adoption of the most effective BFPs.

An evaluation of the current SAFMC outreach programs is essential to understand what is working and where improvements are needed.

- Compare program outcomes to goals and objectives to assess their effectiveness.
- Identify key barriers to success, such as adoption challenges, regulatory constraints, or gaps in outreach.
- Define clear and measurable success metrics to guide future program adjustments.

Theme Three: The Role of Best Fishing Practices in Science and Management

Mechanisms for Integrating Best Fishing Practices into Science and Management **Dr. Judd Curtis, SAFMC Staff**

Workshop participants received a presentation on how best fishing practices, including descending device usage and alternative data sources, may be incorporated into the stock assessment process. The presentation highlighted how discard mortality estimates from barotrauma, hook-induced mortality, handling, improper venting, heat stress, and other factors are considered in developing discard mortality rates that are combined with estimates of the total number of released fish to obtain an overall estimate of discard fishing mortality for a stock assessment. Uncertainty around these estimates are modeled using sensitivity analyses to determine the influence of the discard mortality parameter within the stock assessment framework, and how these uncertainties may affect the overall status of the fishery compared to current benchmarks.

Another parameter in the stock assessment framework identified as responsive to changes in fishing behavior, usage of best fishing practices, or gear modifications is selectivity. Changes in selectivity are modeled using time blocks that consider changes to management actions as well as changes in fishing behavior and an example was provided using the SEDAR 73: South Atlantic Red Snapper stock assessment that utilized a series of time blocks to account for the regulatory requirement to transition from J-hooks to circle hooks, and the increased usage of descending devices. Accounting for time-varying selectivity provides a more robust and accurate estimate of the total fishing mortality rate over time that accounts for the changes in management actions and angler behavior.

Citizen science data collection can serve as an invaluable supplement to standard data collection methods in stock assessments by filling data gaps not covered by fishery-dependent or fishery-independent data sources. FISHstory, an example of a citizen science driven data collection approach, was presented as an example of how citizen science data has been utilized for filling data gaps. Historical length composition data for King Mackerel were obtained by observing historic fishing photos and developing methods to estimate and validate fish length from the photographs. Data obtained from this project helped to supplement length composition data from more recent years obtained through traditional survey methods to enable a longer time series of length composition information in the fishery and to explore changes in the size selectivity through time.

Some of the challenges with integrating best fishing practices information into the stock assessment process were described and served as the focal point for prompting discussion among the participants. These challenges included: estimating the knowledge and execution of best fishing practices in general and the prevalence of use of descending devices to mitigate barotrauma; sampling strata limitations by depth, season and area; stationarity of estimates of discard mortality through time; and potential experimental and sampling biases.

Incorporating Descending Device Use in Recreational Discard Mortality Rates in Pacific Groundfish

Merit McCrea, Pacific Fisheries Management Council Groundfish Advisory Subpanel

A case study using the Pacific Fishery Management Council (PFMC) managed rockfish species was presented as an example of how recreational discard mortality rates when using descending devices have been incorporated into the groundfish fishery management plan and recreational catch accounting with the goal of reducing fishing mortality attributed to released fish and to simultaneously retain recreational access and encourage stock rebuilding. Pacific rockfish (genus *Sebastes*), comprised of 102 species, reside on deep rocky reef habitat along the Pacific coastline with a variety of life history strategies, ecological niches, and susceptibility to barotrauma. Three species-specific cumulative discard mortality rates for canary rockfish, yelloweye rockfish, and cowcod have been used to modify discard mortality based on the use of descending devices for recreational fisheries since 2014. Recent analysis conducted in 2022 by the Northwest Fishery Science Center and PFMC Groundfish Management Team has updated the 2014 approach to provide updated estimates for the three species and extended the approach to include 22 other rockfish species from the fishery management plan.

For species without sufficient data, discard mortality rates (DMRs) are applied on a *guild basis* rather than strictly by individual species. A “guild” refers to groups of species that share similar habitat, behavior, and vulnerability to barotrauma, such as benthic rockfish, midwater rockfish, or flatfish. Using guilds simplifies management by applying one DMR estimate across similar species rather than requiring detailed, species-specific data for each. This approach reflects both practical data limitations and biological similarities that influence post-release survival. For example, deep-dwelling benthic species tend to have higher barotrauma risk and thus higher mortality without descending devices, while midwater or more mobile species may show greater resilience. The presentation stresses that incorporating descending-device use into guild-based DMRs allows managers to more accurately represent survival benefits at the group level, even when species-specific studies are limited. By adjusting DMRs within guilds to account for whether descending devices are used, the PFMC can apply more realistic mortality estimates in catch accounting. This guild-based framework supports more flexible and adaptive management: it helps maintain conservation goals while also providing fishing opportunities by recognizing the benefits of improved release practices. Ultimately, the guild-based system represents a balance between scientific precision and management feasibility, ensuring that groundfish regulations better reflect actual survival outcomes while still being workable for enforcement and compliance.

Incorporating descending devices into catch accounting mechanisms enables better conservation outcomes and more balanced management by allowing anglers to release fish with reduced mortality impact. It underscores how these scientific, enforcement, and advisory layers within the PFMC work collectively to adapt management measures—such as adjusting discard mortality rates—to improve both fish survival and recreational access.

Think Tank Discussions

What are the challenges in integrating data on best fishing practices (e.g., descending devices, dehooking tools, etc.) into stock assessments and management?

- **Timing of credits:** Unclear when conservation credits for DDs/BFPs appear (assessment vs. management phase) → affects angler participation.
- **Transparency issues:** Stakeholders lack clarity on how/when BFP use is factored into management decisions.
- **Validation of angler-reported data:** Concerns over bias; “trust but verify” principle. Need more observer coverage.
- **Resolution of data:** Landings and effort data by depth not fine-scaled enough to estimate conservation benefits.
- **Lag in assessments:** Stock assessment outputs lag behind real-world conditions, reducing stakeholder trust.
- **Uncertainty in data:** Variation in BFP effectiveness across species; modest mortality reductions in assessments.
- **Behavioral challenges:** Hard to incentivize fishermen when benefits are long-term, not immediate (e.g., season length).
- **Communication gaps:** Overemphasis on “credits” instead of long-term benefits; need clear messaging.
- **Social dynamics:** Fishermen must act as ambassadors (“BFP MVPs”), but tragedy of the commons persists.
- **Trust issues:** Scientists and anglers need stronger mutual trust; resistance to observers remains.

What gaps in current research or data need to be addressed for integration of best fishing practices into stock assessments and management?

- **Better discard data:** Accurate estimates of discard numbers and disposition are lacking.
- **Prevalence of use:** Need reliable data on who uses DDs/BFPs, how often, and whether they’re used correctly.
- **Sampling frames:** By state, sector, depth, and season.
- **Angler demographics:** Accurate count of permit holders and effort levels (occasional vs. frequent anglers).
- **Social science:** Why do some anglers not use BFPs; define non-adopters and measure their influence.
- **Meta-analysis & literature reviews:** Consolidate existing research, reduce duplication, and highlight consensus.
- **Messaging research:** Market research and education studies could improve outreach effectiveness.
- **Information overload:** Prioritize impactful practices (e.g., descending devices, venting) over minor tips.
- **Value beyond assessments:** Need ways to quantify conservation and stewardship benefits outside of stock models.

What additional research or what future studies are planned to better understand the impact of best fishing practices on stock assessments?

- **Meta-analyses:** Examine species-specific responses to DDs/BFPs.
- **Guild-based approaches:** Use congeners/related species to estimate mortality for data-poor stocks.
- **Observer & citizen science data:** Collect prevalence and usage data more systematically.
- **Simulation studies:** Stock assessment sensitivities and management strategy evaluations on BFP adoption impacts.
- **Discard data improvements:** Especially for private recreational fisheries.
- **Red snapper focus:** Priority because of high discard rates, but need expansion to other species (especially deep-water).
- **Deepwater fish studies:** Important as fishing pressure shifts due to regulation and technology.
- **Regional comparisons:** Look at data from outside the South Atlantic to expand knowledge base.
- **Outreach-driven research:** Focus groups, messaging matrices, and communication feedback loops.
- **Prioritization of BFPs:** Determine which practices are most effective, widely used, and impactful.
- **Angler behavior studies:** “Stages of an angler,” tipping points for adoption, evolving nature of BFPs.

Recommendations

- **Increase transparency and consistency** in how BFP data (e.g., descending devices) are incorporated into stock assessments and management, with clear communication to anglers on expectations and outcomes.
- **Improve data quality and validation** through better discard estimates, observer coverage, and verification of angler-reported data, while addressing trust issues between scientists and fishermen.
- **Prioritize research on effectiveness and adoption** of key BFPs (especially descending devices), using meta-analyses, guild-based approaches, and studies on angler behavior to identify tipping points for widespread use.
- **Integrate social science and outreach** by understanding why some anglers do not adopt BFPs, tailoring messaging to long-term benefits rather than short-term “credits,” and empowering fishermen as conservation ambassadors.
- **Develop a structured, long-term strategy** that links science, management, and outreach, recognizing that BFP adoption provides cumulative, modest but meaningful mortality reductions and fosters stewardship for future fisheries sustainability.

Action Planning

Priority Recommendations

Understanding of existing norms within these different groups and communities participating in the recreational snapper grouper fishery including how anglers identify themselves within their perceived group and in relation to other groups, angler sentiment on a variety of species, and trip satisfaction tradeoffs.

- Better understanding how different types of anglers value the snapper grouper fishery would allow outreach efforts to be designed in a way that is an additive to a positive fishing experience.

A meta-analysis across a range of species and best fishing practices to understand the range of conservation benefits, including identification of high-effect, low-adoption practices.

- A thorough review of existing recreational data collection efforts is needed to better understand the scope of angler perceptions.

An evaluation of the current Council outreach programs to understand program outcomes versus goals and objectives, barriers to success, and to define clear and measurable success metrics to guide future program adjustments.

Data collection on prevalence of use and knowledge of descending devices from citizen science work as well as observer coverage to validate angler submitted data and aggregation of this data across platforms.

- Improved data collection efforts of discard mortality, including better resolution of landings and effort across sectors, depths and seasons and use of “guild-analysis” to obtain better estimates of discard mortality for species where data is lacking.

Stock assessment simulations/sensitivities or management strategy evaluations to estimate how adoption of best fishing practices affects stock dynamics and future productivity.

Next Steps

Following this workshop, the next steps will focus on translating discussions into actionable strategies that can strengthen the Council’s best fishing practices outreach and evaluation efforts.

Based on the priority recommendations, this will include developing consistent, coordinated messaging that clearly explains both the immediate and long-term benefits of best fishing practices use, particularly descending devices, while framing these practices as integral skills within the fishing experience. Building on the insights shared during the workshop, the Council will continue to expand partnerships with trusted community leaders and tackle shops to amplify fishermen-to-fishermen communication and reduce barriers to adopting best fishing practices. At the same time, there is a need to integrate social science more directly into fisheries management by conducting coordinated, longitudinal surveys that track changes in angler perceptions and behaviors across the South Atlantic region.

Finally, outcomes from this workshop will inform the South Atlantic Research and Monitoring Prioritization Plan (2025–2029), ensuring that outreach, evaluation, and science are more tightly linked, resources are better targeted, and normative messaging strategies are tested and refined to achieve widespread, lasting adoption of best fishing practices.

Appendix A. Workshop Agenda

Best Fishing Practices Outreach Evaluation Workshop

Thursday, February 20, 2025 – 9:00 A.M. to 5:00 P.M.

Welcome and Participant Introductions – Ana Zangroniz

1. Workshop Introduction
 - a. Meeting Overview and Goals – Christina Wiegand
 - b. Current South Atlantic Council Outreach Efforts – Ashley Oliver
 - c. Group Survey – Ashley Oliver
2. Social Norms in Environmental Conservations
 - a. Introduction to Social Norms and Angler Behavior – Dr. Chelsey Crandall
 - b. Social Norms and Conservation Case Studies – Christina Wiegand

Breakout Discussions

Report Out and Recommendations – Ana Zangroniz

3. Research and Evaluation: Presentations
 - a. Reeling in Insights and Data – Collaborating with Fishermen Through SAFMC Release – Julia Byrd and Meg Withers
 - b. Southeast Florida and South Carolina Anglers' Release Practices and Their Attitudes Toward Descending Devices – David Moss
 - c. Return 'Em Right: Measuring Behavior Change through Angler Surveys – Dr. Nancy Montes

Breakout Discussions

Report Out and Recommendations – Ana Zangroniz

Friday, February 21, 2024 – 9:00 A.M. to 12:30 P.M.

Day One Recap and Day Two Goals – Ana Zangroniz

4. Science and Management: Presentations
 - a. Mechanisms for Integrating Best Fishing Practices into Assessments – Dr. Judd Curtis
 - b. Incorporating Descending Device Use in Recreational Discard Mortality Rates in Pacific Groundfish – Merit McCrea

Breakout Discussions

Report Out and Recommendations – Ana Zangroniz

Wrap-Up and Next Steps – South Atlantic Council Staff

Other Business
Public Comment
Adjourn

Appendix B. Workshop Attendees

| Invited Participants | | |
|----------------------|---|---------------|
| Name | Affiliation | Workshop Role |
| Kevin Aman | NC Division of Marine Fisheries | Participant |
| Scott Baker | North Carolina Sea Grant | Participant |
| Jill Christopherson | FL Fish and Wildlife Commission | Participant |
| Dr. Chelsey Crandall | FL Fish and Wildlife Research Institute | Presenter |
| Dr. Marcus Drymon | MS-AL Sea Grant Consortium | Participant |
| Bryan Fluech | Georgia Sea Grant | Participant |
| Nick Haddad | Return 'Em Right | Participant |
| Tyler Jones | GA Coastal Resources Division | Participant |
| Dr. Kai Lorenzen | University of Florida | Participant |
| Amanda Macek | NC Division of Marine Fisheries | Participant |
| Merit McCrea | PFMC Groundfish Advisory Subpanel | Presenter |
| Dr. Nancy Montes | Return 'Em Right | Presenter |
| David Moss | The Nature Conservancy | Presenter |
| Dr. Will Patterson | University of Florida | Participant |
| Matt Perkinson | SC Department of Natural Resources | Participant |
| Dr. Jamie Reinhardt | NOAA Office of Habitat Conservation | Participant |
| Alexis Sabine | Texas Sea Grant | Participant |
| Tara Topping | Harte Research Institute/TAMUCC | Participant |
| Greyson Webb | South Atlantic Sea Grants | Participant |
| Ana Zangroniz | Florida Sea Grant | Facilitator |
| Council Members | | |
| Name | Position | Workshop Role |
| Amy Dukes | SC Department of Natural Resources | Participant |
| Kerry Marhefka | At-Large Member | Participant |
| Council Staff | | |
| Name | Position | Workshop Role |
| Myra Brouwer | Deputy Director of Management | Participant |
| Julia Byrd | Citizen Science Program Manager | Participant |
| Dr. Chip Collier | Deputy Director of Science | Participant |
| Dr. Judd Curtis | Quantitative Fishery Scientist | Organizer |
| Kim Iverson | Public Information Officer | Participant |
| Ashley Oliver | BFP Outreach Specialist | Organizer |
| Dr. Mike Schmidtke | Fishery Scientist | Participant |
| Christina Wiegand | Fishery Social Scientist | Organizer |
| Meg Withers | Citizen Science Project Coordinator | Presenter |