



SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

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August 19, 2024

Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St. Ste. 200 A-N
Arlington, VA 22201

We are pleased to submit the proposal titled, "FY25: Enhancing Recruitment & Retention for the *SAFMC Release* Citizen Science Project". The proposal objectives are summarized below:

- Continue data collection through the *SAFMC Release* citizen science project on released shallow-water grouper (Black, Gag, Red, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby) and Red Snapper in the South Atlantic
- Use license data from the National Saltwater Angler Registry (NSAR) to recruit private recreational fishermen for the *SAFMC Release* citizen science project
- Continue opportunistic strategies to recruit fishermen for the *SAFMC Release* citizen science project
- Enhance *SAFMC Release*'s participant retention and reactivation within the project

The proposed work will help address key research needs on released shallow water grouper and Red Snapper – characterizing the size of released fish and helping to better understand how many released fish survive. It incorporates use of the NSAR as a recruitment tool - adding a statistical design element to recruit project participants. Data collection is done via the SciFish platform, using ACCSP data standards and making the data more easily accessible for assessment and management.

This proposal is being submitted as a new project. It builds on work from the FY20-FY22 ACCSP funded SciFish projects, but several objectives have changed. Thus, we felt it was more appropriate for submission as a new proposal as opposed to a maintenance proposal.

This proposal has been revised based on the reviewers' feedback. The requested funding amount in the cover sheet is the amount requested from ACCSP. The total proposal cost, which includes in-kind funding, is available in the budget. In this submission, the bold text indicates sections that help with the ranking process and yellow highlighted text indicates changes from our initial submission.

Please let us know if you have any questions or would like any additional information.

Best,

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Applicant Names: South Atlantic Fishery Management Council (SAFMC)
NOAA Fisheries' Southeast Fisheries Science Center (SEFSC)
NOAA Fisheries' Office of Science & Technology (S & T)

Project Title: FY25: Enhancing Recruitment & Retention for the *SAFMC Release*
Citizen Science Project

Project Consultants: South Carolina Department of Natural Resources (SCDNR) &
Georgia Department of Natural Resources (GADNR)

Project Type: New

Requested Award Amount: \$137,356

Requested Reward Period: One year upon receipt of funds

Submission Date: August 19, 2024

FY25 Atlantic Coastal Cooperative Statistics Program (ACCSP) Proposal for the SAFMC, NOAA SEFSC and NOAA S & T

OBJECTIVES:

- Continue data collection through the *SAFMC Release* citizen science project on released shallow-water grouper (Black, Gag, Red, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby) and Red Snapper in the South Atlantic
- Use license data from the National Saltwater Angler Registry (NSAR) to recruit private recreational fishermen for the *SAFMC Release* citizen science project
- Continue opportunistic strategies to recruit fishermen for the *SAFMC Release* citizen science project
- Enhance *SAFMC Release*'s participant retention and reactivation within the project

NEED:

Fishery managers often consider the biology and sustainability of a fish stock in concert with socio-economic values of the resource and fishery when developing fishery management plans. Despite substantial efforts, perennial data gaps still exist. If addressed, new data could be useful in developing improved stock assessment models and associated management considerations.

Citizen science is growing in the United States and other countries (McKinley et al. 2017) and has been used for research, management, policy, and public engagement (Poisson et al. 2020). **A growing number of publications has shown that diverse citizen science projects can produce data on par with traditional scientific data when properly designed, implemented, and evaluated (McKinley et al. 2017, Kosmala et al. 2016, Freitag et al. 2016). Data that are self-reported by fishermen show increasing promise to address multiple data limitations (Johnston et al. 2021; Oremland et al. 2022).** Indeed, citizen science approaches are currently being investigated to address state and federal management needs including catch at size, shark depredation, biological data, and post release fishing mortality. Examples of this can be seen in recent efforts by the South Atlantic Fishery Management Council's (SAFMC) [SAFMC Release](#) project, North Carolina Division of Marine Fisheries' Catch U Later project, Massachusetts Division of Marine Fisheries' [Striped Bass Citizen Science Project](#), and Florida Atlantic University's [Shark Depredation Grant](#). Additionally, ACCSP **recognized the potential of citizen science to fill data gaps and developed the SciFish platform to support, develop, and administer this type of research.**

Discard mortality has been an increasing contributor to the total mortality experienced by many stocks and is a major source of mortality for Red Snapper as well as other species in the snapper-grouper complex (SEDAR 73, [SEDAR 2021a](#)). Importantly, released fish are not available for sampling by typical dockside monitoring programs. In the South Atlantic, observer coverage ranges from limited in commercial and for-hire fisheries to non-existent in private recreational fisheries. As such, there is often no or limited information available to characterize the size and fate of these losses for stock assessment modeling. **Improving information on released fish is commonly highlighted in stock assessment research recommendations and is often a top priority in agency research plans. This project will focus on characterizing the size distribution of shallow-water grouper and Red Snapper releases in the South Atlantic region and gathering information to help understand how**

many of these releases survive. In the ACCSP request for 2025 proposals, improved recreational fishery release data as well as biological sampling for recreational fisheries separate from MRIP are the #3 and #5 recreational priorities, respectively. Additionally, Red Snapper, Gag Grouper, and Red Grouper are in the top 25% of the biological priority matrix, and the snapper grouper hook and line fishery is in the top 25% of the bycatch matrix. Discard characterization and information on barotrauma mitigation practices are priorities in the South Atlantic Fishery Management Council’s (SAFMC) Research and Monitoring Plan for 2023-2027 and for the SAFMC’s Citizen Science Program.

The *SAFMC Release* project was developed through the SAFMC’s Citizen Science Program. It provides a streamlined approach for fishermen to provide a photograph of released fish along with details such as length, release location and depth caught, condition, and use of barotrauma mitigation techniques. The project focuses on collecting data on the size of released fish and information that helps characterize how many released fish survive. *SAFMC Release* began as a pilot project in June 2019 partnering with recreational, for-hire, and commercial fishermen to gather information on released Scamp Grouper via the *SAFMC Release* mobile application. In August 2021, *SAFMC Release* transitioned to the ACCSP’s SciFish mobile application/platform and expanded to collect information on all shallow-water grouper species. In April 2022, Red Snapper was added to the project.

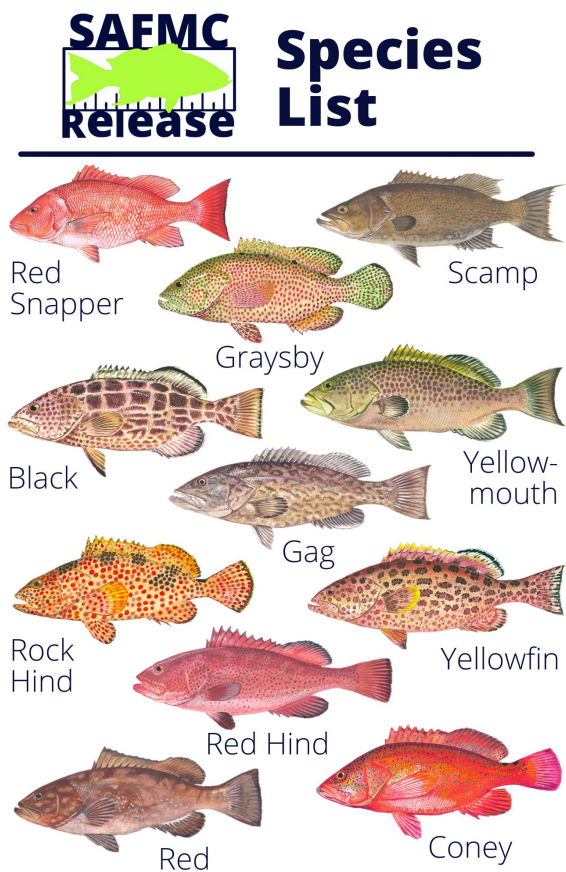


Figure 1. *SAFMC Release* Species List.

Recruitment for *SAFMC Release* has largely been through opportunistic outreach strategies (e.g., tackle shop visits, fishing seminars and expos, SAFMC-related meetings, online and media, etc.) and has been limited by capacity and resources (e.g., personnel, time, funding). Through collaborations with the SAFMC’s Best Fishing Practices initiative, Sea Grant, state agencies, and other partners, the project has reached broader audiences than Citizen Science **Program** staff could have done alone. In spring 2022, the Council collaborated with the North Carolina Division of Marine Fisheries (NCDMF) to mail information to 10,000 NC recreational fishing license holders to recruit participants to the Catch U Later and *SAFMC Release* projects. In June 2023, the Council collaborated with Florida Fish and Wildlife Commission (**FL** FWC) on an email solicitation to Florida State Reef Fish Designees on the Atlantic Coast to encourage participation in **FL** FWC’s State Reef Fish Survey and recruit fishermen to the *SAFMC Release* project.

The number of project participants and data submissions within the *SAFMC Release* project have been growing over time. Each year, *SAFMC Release* develops Annual Data Summaries which are initially shared with project participants and then posted to the project webpage. The 2021, 2022, and 2023 SAFMC Annual Data Summaries are available at the following links: [SAFMC Release Data Summary 2021](#), [SAFMC Release Data Summary 2022](#), and [SAFMC Release Data Summary 2023](#). Aggregate length composition for Red Snapper and aggregate release treatment by depth figures are provided below as an example of the data collected through the project over time (Figure 2 and Figure 3).

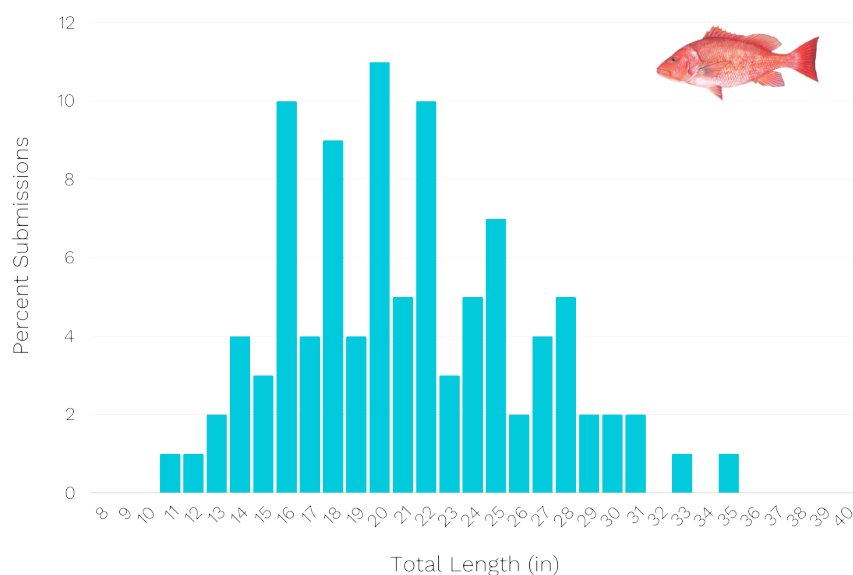


Figure 2. Red Snapper release length frequency logged through *SAFMC Release*, April 2022 – **July 2024**. Red Snapper was added to *SAFMC Release* in April 2022.

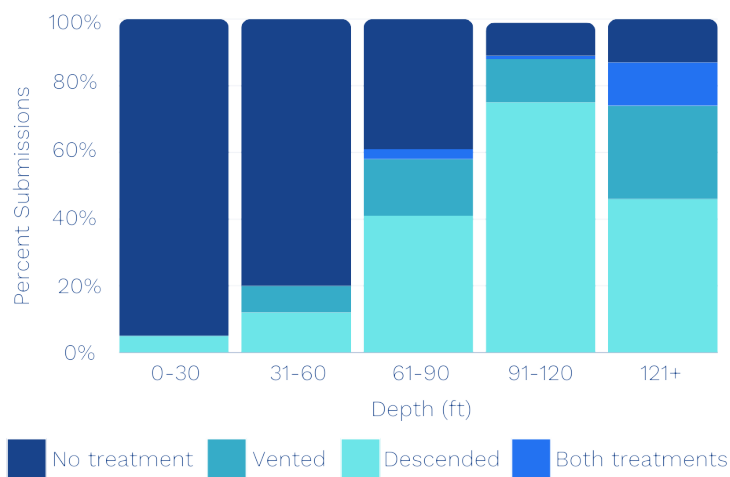


Figure 3. Release treatment by depth logged through *SAFMC Release*, June 2019 – July 2024.

When new participants sign up for *SAFMC Release*, they are asked to share where they heard about the project via an open-ended question. Based on these data, **in-person outreach (41%) and directed recruitment mailings in collaboration with state partners (NCDMF mailing – 21% and the FL FWC solicitation email -12%)** have been critical recruitment strategies for the project to date (Figure 4).

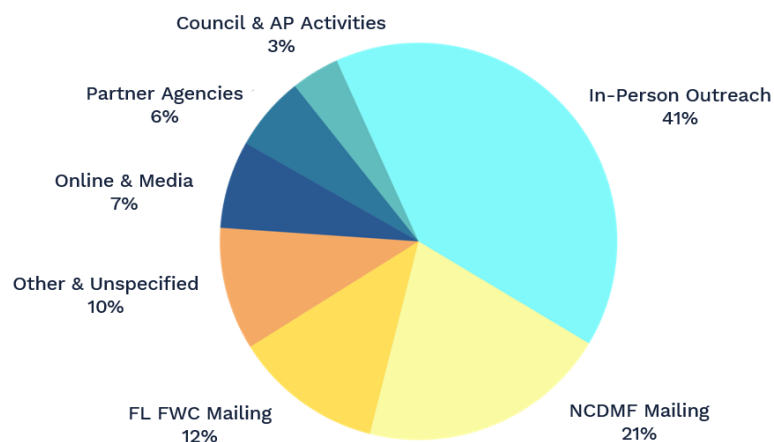


Figure 4. *SAFMC Release* participants by origin (June 2019 – April 2024).

Through *SAFMC Release* outreach efforts, staff have been able to build new and strengthen existing relationships with project participants and other stakeholders within the fishing community. However, participant recruitment and retention remain a challenge for the project. **This proposal will support the continuation of opportunistic outreach strategies to assist with participant recruitment and relationship building within the fishing community, focusing on in-person outreach that has been critical for project participation. Additionally, it will use data from the National Saltwater Angler Registry (NSAR) as a recruitment tool for private recreational fishermen in Georgia**

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(GA) and South Carolina (SC). *SAFMC Release* has not had an opportunity to do recruitment mailings to saltwater recreational fishing license and permit holders in GA and SC, in part due to limitations in license holder confidentiality. Partnering with NOAA Fisheries to use the NSAR data in collaboration with state partners provides an opportunity to increase project participation rates in GA and SC. Direct mailings to license holders in these states will likely reach a broader group of fishermen, many of whom may not be in the Council's current network.

To help with participant retention *SAFMC Release* launched a Participant Recognition Program (PRP) in spring 2023. **When volunteers reach identified milestones, they receive participant recognition or awards.** Participant recognition programs are often beneficial to improve volunteer retention within citizen science projects (Robinson et al. 2021). Such programs have been shown to increase the quantity of data submissions and support retention by providing recurring volunteer engagement opportunities (Dickinson et al. 2012; Diekert et al. 2023). Thus, a recognition program is an important element of a retention strategy for the *SAFMC Release* project.

Programs such as Catch a Florida Memory (CAFM), in which anglers submit catch information to the Florida Fish and Wildlife Conservation Commission to earn rewards, have had success in motivating continued participation by providing a variety of incentives for participants to earn (J. Christopherson, personal communication, May 1, 2024). Of CAFM participants surveyed in 2023, 88% reported that earning prizes was 'somewhat important' or 'very important' motivation for participating in the program and approximately 54% of respondents reported being 'very satisfied' with the prize packages they earn (internal CAFM data). Also cited as contributing to program success are goals that re-engage volunteers after reaching all available milestones (J. Christopherson, personal communication, May 1, 2024).

Due to SAFMC funding limitations and stipulations, *SAFMC Release* initially provided only public recognition (e.g. listed in monthly newsletters or annual data summary) to participants who met PRP milestones. In 2024, the Council partnered with Sea Grant to adopt some of the PRP milestones ([2024 PRP milestones](#)). As participants meet these adopted milestones, they earn Sea Grant "recognition packets" and may win best fishing practices gear. However, Sea Grant can only provide best fishing practices-related items. As participants continue to meet milestones and build their repertoire of best fishing practices gear, the motivation to earn these items is likely to wane. **The success demonstrated by programs such as CAFM indicates that incorporating a more substantial recognition program into *SAFMC Release*'s retention strategy can increase the quantity of data collected through the project, improve participant satisfaction, and support the long-term engagement of participants.**

RESULTS & BENEFITS:

This project will continue to collect data on released fish via *SAFMC Release*, building on the work done through the FY20-FY22 ACCSP-funded SciFish projects. Observer funding for most fisheries along the Atlantic Coast has never been adequate. Many fisheries, such as the private recreational or the commercial snapper grouper hook and line, are challenging to sample through conventional observer techniques due to their small vessels which could present safety concerns, potential liability issues, and logistical challenges. Although a few specific fisheries are highlighted in this project, **the proportion of catch attributed to releases is increasing in many popular fisheries**

along the Atlantic Coast so the insights, tools, and best practices developed through this project may be beneficial to other partners.

SAFMC Release will continue collecting biological information on the component of catch that is released, addressing the ACCSP FY25 Request for Proposal priority 1b and Recreational Technical Committee priority 3. ***SAFMC Release*** will continue to collect biological and fishery data that is independent of APAIS/MRIP, addressing Recreational Technical Committee priority 5.

The specific benefits to each data type and the rank of the target species within priority matrices included in the project are addressed below.

Primary Program Priority: Biological Sampling: 90%

Biological information from the commercial, for-hire, and recreational fisheries will continue to be collected on released shallow-water groupers (Black, Gag, Red, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby) and Red Snapper. Gag Grouper, Red Grouper, and Red Snapper are in the top 25% of the ACCSP biological sampling priority matrix. *SAFMC Release* data collection includes:

- Data collected for each trip: trip type (commercial, recreational, headboat, charter), date, user (ACCSP ID);
- Data collected for each fish released: species (user's determination), length (based on ACCSP standards), location (state required, specific latitude/longitude optional), depth, time, fate (dead or alive release), hook type, hook location, use of barotrauma mitigation (descending device, venting, line cut), shark depredation, and photograph (to validate and evaluate species IDs and lengths); and
- Users may also file a 'no fish released' report to share information on harvested fish

Secondary Module as a by-product: Bycatch: 10%

The snapper-grouper hook and line fleet is ranked in the top quartile of the ACCSP bycatch priority matrix (ranked 9th out of 19 fleets). Information collected through *SAFMC Release* can help provide information on length of released shallow water grouper and Red Snapper and release treatment (e.g., use of barotrauma mitigation devices) to supplement the data available through observer coverage and discard logbooks to help characterize the bycatch within this fleet.

Stock Assessment and Management Benefits and Impact:

By continuing data collection on released fish through the *SAFMC Release* project, the positive impact of this project to stock assessments could be substantial and realized. Stock assessments rely upon accurate information on total catch and removals from the stock and accurately allocating those removals to year classes. For fish that are landed, these requirements can be addressed through straightforward methods such as catch reporting or creel surveys to estimate removals and dockside sampling to collect length measurements and age samples. Surveying and dockside sampling approaches do not work when the fish are released on the water. Using the South Atlantic as an example, very limited information is available to classify the size composition of released fish in the commercial snapper grouper hook and line fleet, the private

recreational fleet, or the charter fleet. In some areas, fisheries observers are used to collect information on released fish, but observer coverage is limited due to high cost. Moreover, even if funding were available, logistics and liabilities remain a concern for some fisheries due to the small size of many commercial and private recreational vessels and lack of safety gear requirements on private recreational vessels. Limited observer coverage is available for the headboat fleet and charter fleet (FL only), but changes in fleet size, targeted species, and behavior raise concerns about the validity of such data to characterize removals from other fishery sectors. This lack of information is a major source of stock assessment uncertainty, as assumptions must be made to assign released and discarded fish into length and thus age classes.

In years past, the lack of accurate information on discarded fish was not a major assessment concern or source of uncertainty as landed fish generally accounted for the majority of stock removals. However, this is changing as regulations and fishing behavior are leading to increased discarding. The most recent Red Grouper assessment (SEDAR 53, **SEDAR 2017**) indicated that over fifty percent of the fishing mortality experienced by Red Grouper is due to discard losses. Given that this stock was found to be overfished and overfishing was occurring, these discard removals are significant, and therefore the assumptions made regarding their size and composition are critical. In this instance, the length composition and selectivity for the discard losses was based on observer records from the headboat fishery and it was assumed these data were representative of all fishery sectors. As noted above, there are no data to test this assumption so its impact on assessment uncertainty and bias is unknown. The most recent assessment of South Atlantic Gag Grouper (SEDAR 71, **SEDAR 2021b**) indicated the stock was overfished and overfishing was occurring. Although discards accounted for a small proportion of fishing mortality in the assessment, the restrictive management measures implemented in response to the assessment through SAFMC's Snapper Grouper Amendment 53 will increase the proportion of discards within the fishery. SEDAR 71 relied on limited headboat observer data to characterize the size of discards from the recreational fleet with no data available from the charter and private recreational sectors. Having additional data sources to supplement these data will become increasingly important as the discards in the Gag fishery increase. In SEDAR 73, the most recent South Atlantic Red Snapper assessment, the stock was found to be overfished and undergoing overfishing. In recent years, discards have accounted for over 90% of removals so characterizing their size is critical. Length compositions and selectivity for discards were based on limited commercial, headboat, and charter (Florida only) observer data. Sampling recommendations in the report noted that it remains important to monitor discards year-round and any potential methodological or sampling improvements should be implemented if possible. Having additional information to help characterize the substantial discards could help meet this critical need.

A similar lack of information exists to classify the depth where fish are captured and released and the use of tools to address barotrauma, such as venting tools and descending devices. Fishing depth is positively correlated with release mortality rates for most species due to impacts of barotrauma. However, it is challenging to estimate release mortality for use in a stock assessment without having information on the depths where fish are caught and when the species is impacted by barotrauma.

Small improvements in estimates of discard mortality, based on data rather than assumption, can result in large changes in the estimated removals from a fish stock. Based on the results of

ACCSP-funded headboat observer studies, as cited in the FY2019 Recreational Technical Committee proposal, the Red Snapper release mortality was reduced from 37% to 28.5% due to the use of circle hooks. Applying this percentage change to the estimated 2018 MRIP discards reduced the discard losses to the population by 274,000 fish. This is quite a difference when compared to the 2018 recreational annual catch limit of 29,656 fish. The ability to accurately characterize discards could substantially improve stock assessments and management decisions.

The SAFMC's Snapper Grouper Regulatory Amendment 29, which requires descending devices on-board vessels fishing for or possessing snapper grouper species, was implemented in July 2020. Federal law requires comparing the No Action alternative (not requiring) with proposed management actions. Having information on usage of descending devices would have benefited the analysis for impacts of requiring a descending device both in the cost to anglers and for estimating changes in the estimate of discard mortality. Luckily, most stakeholders regarded this as a positive management action. But quantitative information on fishing practices that can be collected through a data collection app could be used to make more informed decisions on the impact of management actions. When reviewing the SEDAR 73 (South Atlantic Red Snapper) assessment at their April 2021 meeting, the SAFMC's Science and Statistical Committee raised concerns about the level of descender device usage due to the lack of information on how widespread usage is in the fishery. This is of note since the assumed level does have an impact on recommended catch levels - highlighting the need for this data. The upcoming South Atlantic Red Snapper assessment terms of reference (SEDAR 90) include consideration of the *SAFMC Release* data.

DATA DELIVERY PLAN:

The SciFish application for the *SAFMC Release* project will collect and deliver data directly to ACCSP through the SciFish API and will be stored in SAFIS. Data can be entered by fishermen when no internet connection is available and later uploaded to SAFIS when a connection exists.

APPROACH:

Task A: *SAFMC Release* Participant Recruitment via National Saltwater Angler Registry Overview

- Recruit new *SAFMC Release* participants from GA and SC using the National Saltwater Angler Registry (NSAR) database via random stratified mailings. Mailings will include a recruitment letter with an individual's license number, quick response (QR) code to NSAR specific *SAFMC Release* account sign up page, and a *SAFMC Release* promotional item. State specific recruitment letters can be used to share information on *SAFMC Release* in context with other initiatives being conducted within the state.
- Target to send recruitment mailings to a total of 24,000 NSAR licensees evenly distributed between GA and SC. Mailings will be iterative and consist of an initial mailing during March and a subsequent mailing during May. These mailings will target unique licensed anglers between the ages of 16 and 85 that are coastal county residents of the target state that currently possess an active annual saltwater fishing license or permit. Mailings will coincide with peak activity of the fishery as identified from the NOAA Marine Recreational Information Program (MRIP) dockside survey (May-October).

- The proposed stratification scheme for solicitation mailings will include the following strata: state, wave, county of residence, and zip code. The stratification scheme was informed by effort and catch data from the (MRIP) Access Point Intercept Survey (AP AIS) (1981-2023). Records were selected that included catch (kept or discarded fish) from any of the constituent *SAFMC Release* species. See Appendix 1 for more details on the proposed stratification methodology.

Roles of Collaborators

NOAA

- NSAR mailing selection draw for all recruitment mailings
- Draft recruitment letter in collaboration with SAFMC and states
- Coordinate with contractor to complete NSAR recruitment mailings

SAFMC

- Draft recruitment letter in collaboration with NOAA and states; provide *SAFMC Release* promotional item for mailing
- Set up and monitor *SAFMC Release* project account creation forms
- Create user accounts and onboard new participants (sharing login details, training materials, add to **SAFMC Release** email list & PRP if opt in, troubleshoot SciFish login/app issues)

SCDNR & GADNR

- Consult on NSAR recruitment letter and stratification for their states, respectively

Task B: Continue and expand current *SAFMC Release* recruitment strategies

Roles of Collaborators

SAFMC

- Visit tackle shops in South Atlantic states (NC, SC, GA, and FL) to distribute *SAFMC Release* and Best Fishing Practices materials for project promotion and recruitment
- Participate in relevant fishing expos, seminars, collaborations with fishing organizations to promote *SAFMC Release* and best fishing practices and recruit new project participants
- Collaborate with state partners to share information on *SAFMC Release* at events and via other outreach efforts and communication platforms, as appropriate
- Share *SAFMC Release* project information at Council related meetings and via Council communication platforms (e.g., South Atlantic Bite newsletter, social media)
- Set up and monitor *SAFMC Release* project sign up forms
- Create user accounts and onboard new participants (sharing login details, training materials, add to **SAFMC Release email** list & PRP if opt in, troubleshoot SciFish login/app issues)

SCDNR & GADNR

- Consult on participant recruitment strategies

Task C: *SAFMC Release* Participant Retention Strategies

Overview

- The *SAFMC Release* team will employ a multi-pronged approach to support year-round participant engagement with the project including regular participant communications, development of data summaries, and the expansion of the PRP.
- To support engagement with the *SAFMC Release* project year-round, recognition program milestones will reward participants using multiple strategies. Figure 5 outlines the proposed strategies for milestones, associated rewards, and other forms of recognition.

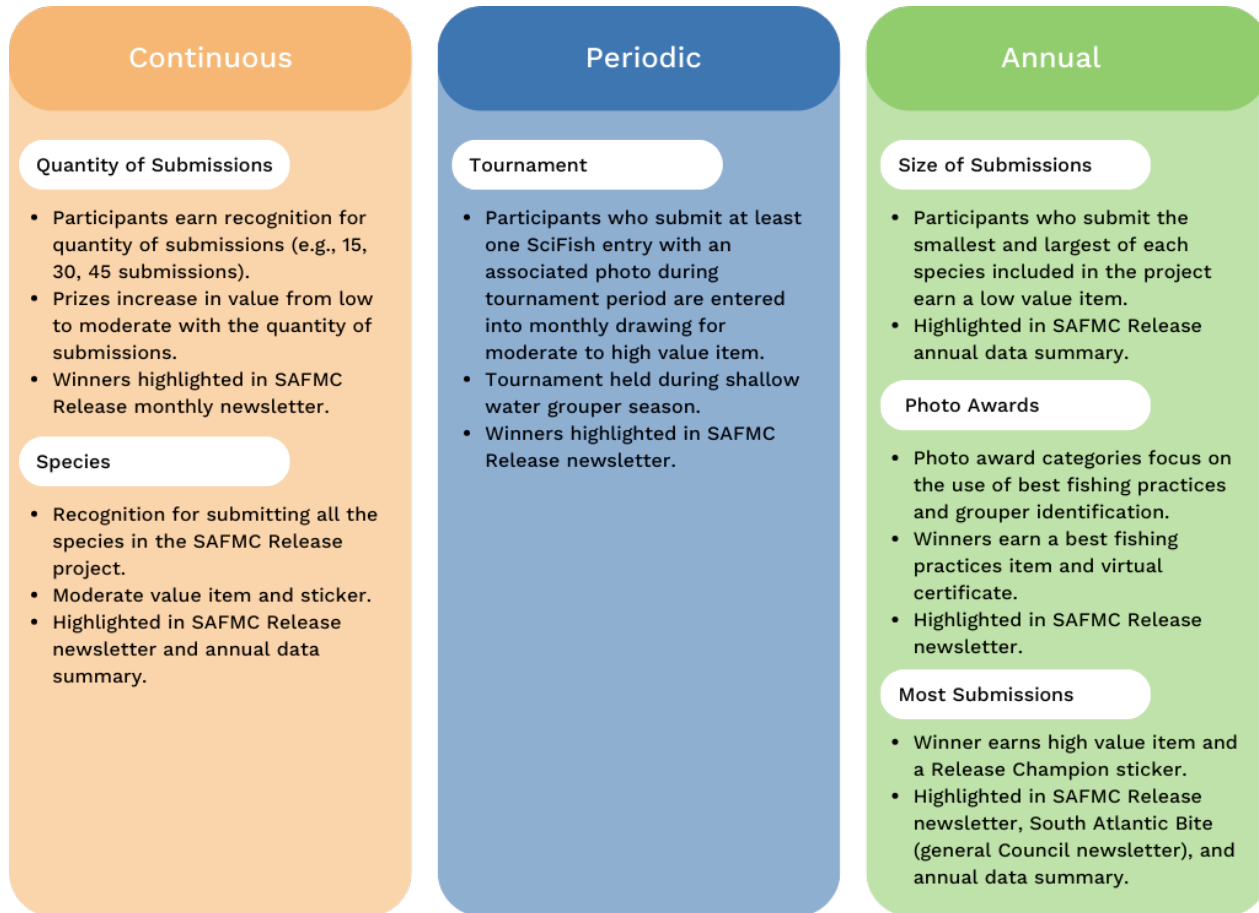


Figure 5. *SAFMC Release* proposed PRP milestones, rewards, and recognitions.

Roles of Collaborators

SAFMC

- Participant Communications
 - Distribute monthly e-newsletters to participants
 - Email and phone communication with participants to thank them for submissions, troubleshoot issues, etc.
- Annual Data Summary
 - Provide annual data summary to participants and post to project webpage
 - Explore additional data summary options for participants
- Participant Recognition Program (PRP)
 - Monitor participant PRP progress

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- Provide participant awards for PRP milestones

SCDNR & GADNR

- Consult on participant retention strategies

Task D: Data collection, QA/QC, and analysis

Roles of Collaborators

SAFMC

- Data successfully submitted via app to SAFIS/Data Warehouse
- SAFMC provide QA/QC for data collected through project; edit/correct as necessary
- Share summary data with project partners
- Data made available for assessment and management, as necessary
- Continue to explore long term solutions for addressing QA/QC and validation needs of the data (e.g., photographic and species identification), considering volunteers and citizen science approaches
- Compare data collected via NSAR recruited participants to those collected by participants recruited via other strategies, as appropriate
- Review success of recruitment strategies and make recommendations for future efforts

NOAA

- Assist with the development of data management strategies for NSAR vs opportunistically recruited participants
- Assist with data analytics

GEOGRAPHIC LOCATION:

The *SAFMC Release* project partners with fishermen to collect data on released fish in South Atlantic waters in North Carolina, South Carolina, Georgia and the east coast of Florida through the Florida Keys. Project partners include SAFMC, NOAA SEFSC, and NOAA Office of Science & Technology. Project consultants include SCDNR and GADNR. Letters of support have been provided by NCDMF, SCDNR, and FL FWC (see Appendix 2). Data collected through the project will be available for consideration in South Atlantic stock assessments and management.

In addition to contributing data for consideration in stock assessments and management, this project will collect information on the effectiveness of various recruitment and retention strategies for *SAFMC Release*. With the growing interest in using citizen science as a tool to help supplement marine fisheries data collection, the information gained on volunteer recruitment and retention could be informative for other citizen science projects being pursued by partners along the Atlantic coast.

FUNDING TRANSITION PLAN:

Project PI's will be developing additional proposals and exploring other funding opportunities to help support additional years of funding for this project.

MILESTONE SCHEDULE:

Table 1. Milestone Schedule

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Finalize NSAR mailing stratification in consultation with states	x	x										
Complete NSAR Mailings in SC & GA				x		x						
<i>SAFMC Release</i> Opportunistic Recruitment Outreach Strategies: Tackle shop outreach, seminars, fishing expos, etc.	x	x	x	x	x	x	x	x	x	x	x	
<i>SAFMC Release</i> Retention Strategies: Regular Communication, Newsletters, PRP coordination & implementation	x	x	x	x	x	x	x	x	x	x	x	
Data Collection, QA/QC & Analysis	x	x	x	x	x	x	x	x	x	x	x	
Semi & Annual Report Writing						x					x	x

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PROJECT ACCOMPLISHMENTS MEASUREMENTS:

Table 2. Project Accomplishments Measurements

Project Component	Deliverables
<i>SAFMC Release</i> NSAR Recruitment Mailing	Total of 24,000 <i>SAFMC Release</i> recruitment letters sent to saltwater recreational fishing license holders in SC and GA; new SC and GA participants recruited to <i>SAFMC Release</i> via mailing
<i>SAFMC Release</i> Opportunistic Recruitment Outreach	Continue outreach to promote <i>SAFMC Release</i> in South Atlantic states with a target to visit tackle shops and collaborate on a seminar/outreach event at least once per state; new participants recruited to <i>SAFMC Release</i> via in-person and online outreach
<i>SAFMC Release</i> Retention Strategies	Monthly newsletters and annual data summary distributed to project participants; continuous, periodic, and annual milestones incorporated into Participant Recognition Program (PRP); increase in participants submitting data and meeting PRP milestones
Data Collection, QA/QC & Analysis	Participants continue to submit data on the targeted species using the application; QA/QC completed; data available for management and assessment, as needed
Report Writing	Progress and final reports submitted

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Bold text indicates sections that help with the ranking process.

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McKinley, D.C, A.J. Miller-Rushing, H.L. Ballard, R. Bonney, H. Brown, S.C. Cook-Patton, D.M. Evans, R.A. French, J.K. Parrish, T.B. Phillips, S.F. Ryan, L.A. Shanley, J.L. Shirk, K.F. Stepenuck, J.F. Weltzin, A. Wiggins, O.D. Boyle, R.D. Briggs, S.F. Chapin, D.A. Hewitt, P.W. Preuss, and M.A. Soukup. 2017. Citizen science can improve conservation science, and natural resource management, and environmental protection. *Biological Conservation* 208: 15-28.

Oremland, L., A. Furnish, J. Byrd, and R. Cody. 2022. How fishery managers can harness the power of the crowd: using citizen science and nontraditional data sources in fisheries management. *Fisheries*. 47 (11): 459-462.

Poisson, A. C., McCullough, I. M., Cheruvilil, K. S., Elliott, K. C., Latimore, J. A., Soranno, P. A. 2020. Quantifying the contributions of citizen science to broad-scale ecological databases. *Frontiers in Ecology and the Environments*, 18(1): 19-26.

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SEDAR. **2021a**. SEDAR 73 South Atlantic Red Snapper Stock Assessment Report. SEDAR, North Charleston SC. 194 pp. available online at: <http://sedarweb.org/sedar-73>.

SEDAR. **2021b**. SEDAR 71 South Atlantic Gag Stock Assessment Report. SEDAR, North Charleston SC. 164 pp. available online at: <http://sedarweb.org/sedar-71>

SEDAR. 2017. SEDAR 53 – South Atlantic Red Grouper Assessment Report. SEDAR, North Charleston SC. 159 pp. available online at: <http://sedarweb.org/sedar-53>.

FY25 COST SUMMARY (BUDGET):

Item	ACCSP Share	Partner Share	Total
PERSONNEL COSTS			
SAFMC Citizen Science Project Coordinator – 6 months	\$24,024		
<i>SAFMC Release</i> hourly position (part-time)	\$10,400		
SAFMC Personnel Julia Byrd, Citizen Science Program (10%)		\$9,700	
NOAA Personnel Drew Cathey, SEFSC (5%) Lauren Dolinger Few, S & T (~ 1 week)		\$3,950 \$3,400	
FRINGE			
SAFMC Citizen Science Project Coordinator – 6 months	\$14,294		
SAFMC Personnel Julia Byrd, Citizen Science Program (10%)		\$5,772	
CONTRACT			
NSAR recruitment mailing	\$54,363		
SUPPLIES			
Promotional materials	\$4,000		
Participant Recognition Program incentives	\$15,000		
Software packages	\$3,300		
TRAVEL			
Travel to support outreach and promotional	\$4,430		

Bold text indicates sections that help with the ranking process.

Yellow highlighted text indicates changes made from the initial proposal.

opportunities for <i>SAFMC Release</i>			
Indirect Costs (10% of non-contract costs)	\$7,545		
TOTAL	\$137,356	\$22,822	\$160,187
Percentage	86%	14%	100%

FY25 BUDGET NARRATIVE:

Personnel (\$34,424): Personnel funds of \$24,024 will support 6 months of the SAFMC Citizen Science Project Coordinator position who leads daily project management for the *SAFMC Release* project. The remaining personnel funds (**\$10,400**) will be used by SAFMC to hire a part-time hourly at \$20/hour for 520 hours for the *SAFMC Release* project to help with account creation, coordination of the Participant Recognition Program, and QA/QC.

Fringe (\$14,294): Fringe funds will support 6 months of benefits for the SAFMC Citizen Science Project Coordinator position. Fringe benefits charged at 59.5% of total compensation.

Contractual (\$54,363): NOAA Fisheries will contract with Gallup to coordinate and implement the NSAR recruitment mailings to GA and SC. Target is to send 24,000 recruitment letters (12,000 to each state). Costs are estimated at ~\$2.27 per piece for \$54,363.

Supplies (\$22,300): Partners will utilize funds to print promotional materials (e.g., wallet cards, rack cards, stickers, etc.) to promote and recruit users for *SAFMC Release*. Cost for promotional materials range from wallet cards (~\$0.05 each) to stickers (~\$1.50 each). Using an average cost of \$0.77 per item, \$4,000 will allow us to print ~5,195 items for distribution. The PRP will include low, medium, and high value items when participants meet identified milestones. Cost for low value items range between \$10-\$20, medium value items range between \$25-\$100, and high value items range between \$200-\$600. Using an average cost of \$15 for low value items - \$13,000 will allow us to distribute ~860 items; an average of \$63 for medium value items - \$500 will allow us to distribute ~8 items; and an average of \$400 for high value items - \$1500 will allow us to distribute ~4 items. Costs for software include an annual subscription to Wufoo (\$330) for online forms for account creation and an upgrade to the shiny application to provide an additional tool for project participants to explore and query their data.

Travel (\$4,430): Travel by partners will be used to promote *SAFMC Release* by visiting tackle shops, fishing clubs and expos, and other related venues to allow for distribution of outreach and promotional materials. Funds are requested to support travel for staff members for 4 trips, approximately 3-4 days each. Costs are estimated for a total of 14 hotel nights at \$120/night (\$1,680), 16 days per diem at

\$75/day (\$1,200), ~1200 miles at \$0.625/mile (\$750), and two airplane fares at ~\$400/ticket (\$800). Travel rate estimates are based on federal reimbursement and per diem rates.

Indirect (\$7,545): Indirect charges of 10% are applied to the non-contract budget items for a total of \$7,545. The contract with Gallup will be administered through NOAA Fisheries, so was excluded from the indirect calculations.

SUMMARY OF PROPOSAL FOR RANKINGS:

Proposal Type: New

Primary Program Priority: Biological 90%

Biological information from the commercial, for-hire, and recreational fisheries will be collected on released shallow-water groupers (Black, Gag, Red, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby) and Red Snapper. Gag Grouper, Red Grouper, and Red Snapper are in the top 25% of the ACCSP biological sampling priority matrix. *SAFMC Release* data collection includes:

- **Data collected for each trip: trip type (commercial, recreational, headboat, charter), date, user (ACCSP ID)**
- **Data collected for each fish released: species (user's determination), length (based on ACCSP standards), location (state required, specific latitude/longitude optional), depth, time, fate (dead or alive release), hook type, hook location, use of barotrauma mitigation (descending device, venting, line cut), shark depredation, and photograph (to validate and evaluate species IDs and lengths)**
- **Users may also file a 'no fish released' report to share information on harvested fish**

Data Delivery Plan:

The SciFish application for the *SAFMC Release* project will collect and deliver data directly to ACCSP through the SciFish API and will be stored in SAFIS. Data can be entered by fishermen when no internet connection is available and later uploaded to SAFIS when a connection exists.

Project Quality Factors:

- **Multi-partner/Regional impact including broad applications:**
The *SAFMC Release* project partners with fishermen to collect data on released fish in South Atlantic waters in North Carolina, South Carolina, Georgia and the east coast of Florida through the Florida Keys. Project partners include SAFMC, NOAA SEFSC, and NOAA Office of Science & Technology. Project consultants include SCDNR and GADNR. Letters of support have been provided by NCDMF, SCDNR, and FL FWC. Data collected through the project will be available for consideration in South Atlantic stock assessments and management.

In addition to contributing data for consideration in stock assessments and management, this project will collect information on the effectiveness of various recruitment and retention strategies for *SAFMC Release*. With the growing interest in using citizen science as a tool to help supplement marine fisheries data collection, the information gained on volunteer recruitment and retention could be informative for other citizen science projects being pursued by partners along the Atlantic coast.

- **Contains funding transition plan:**
Project PI's will be developing additional proposals and exploring other funding opportunities to help support additional years of funding for this project.
- **In-kind contribution: 14%**
- **Improvement in data quality/quantity/timeliness**
 - Provides improvement in data quality and quantity
 - There are currently no data available to assign released shallow water groupers and Red Snapper to length classes other than limited commercial and for-hire observer effort. *SAFMC Release* collects data on length of released shallow water group and Red Snapper for commercial, for-hire, and recreational fishermen.
 - There are limited data available to classify the depth where fish are captured and released and the use of barotrauma reduction techniques which are significantly correlated with release mortality rates. The data collected through *SAFMC Release* provides finer scale information on released fish which can help refine the overall release mortality rate applied for a stock assessment.

Potential secondary module as a by-product: Bycatch 10%.

The snapper-grouper hook and line fleet is ranked in the top quartile of the ACCSP bycatch priority matrix (ranked 9th out of 19 fleets). Information collected through *SAFMC Release* can help provide information on length of released shallow water grouper and Red Snapper and release treatment (e.g., use of barotrauma mitigation devices) to supplement the data available through observer coverage and discard logbooks to help characterize the bycatch within this fleet.

Impact on stock assessment:

Stock assessment impacts are significant. Assessments rely on accurate catch data for individual species, accurate assignments of catches to length and thus age classes, and accurate accounting of total population removals including release mortality. **Limited data are available to classify the size composition of released fish in the commercial snapper grouper hook and line fleet, the private recreational fleet, or the charter fleet.** When the SAFMC's Science and Statistical Committee reviewed recent stock assessments (SEDAR 73 – South Atlantic Red Snapper), they raised concerns about the level of descender device usage due to lack of information on how widespread usage is in the fishery. *SAFMC Release* will provide data to help fill these data gaps which are important to assessments.

Other Factors:

- **Innovative**
Interest in using citizen science to help fill data gaps in marine fisheries has been growing in recent years. This project will support the continuation of the *SAFMC Release* citizen science project which is helping address key research priorities on released fish. In

addition to using opportunistic recruitment strategies, it uses the NSAR adding a statistical design to recruit citizen scientists. This will allow for comparison of data collected via NSAR recruited participants to those collected by participants recruited via other strategies.

- **Properly prepared**

This proposal follows the guidelines under the ACCSP Funding Decision Process Document.

- **Merit**

This project supports the continuation of the *SAFMC Release* citizen science project that addresses key research needs on released shallow water grouper and Red Snapper – helping to characterize the size of released fish and helping better understand how many of those released fish survive. It incorporates using the NSAR as a recruitment tool adding a statistical design element to recruit project participants. Data collection is done via the SciFish platform, using ACCSP standards and making the data easily accessible for assessment and management. *SAFMC Release* data will be considered in the upcoming South Atlantic Red Snapper assessment per the SEDAR 90 Terms of Reference. Additionally, this project will collect information on the effectiveness of various recruitment and retention strategies for *SAFMC Release* which could be informative for other citizen science projects along the Atlantic coast.

Appendix 1. Proposed stratification scheme for NSAR recruitment mailing for *SAFMC Release*

SAFMC RELEASE: ACCSP FY25 RFP

Leveraging the National Saltwater Angler Registry to Solicit a Stratified Random Sample of Participants for the SAFMC RELEASE Project

Prepared by Andrew Cathey

Stratified random sampling (SRS) is useful when a population consists of multiple equivalent groups. For these populations, initial stratification can be paired with SRS to select samples from each group (Fricker 2008). Importantly, a stratified approach can reduce cost and logistical difficulties of reaching the target audience. This approach is readily applicable to collect data from specialized recreational fisheries due to the small number of participants relative to the total population of recreational anglers (NCDMF 2023. Chapter 5).

The South Atlantic recreational shallow-water grouper complex fishery is boat-based with catch predominantly originating offshore in the EEZ. As such, it is characteristic of a recreational fishery well suited for applying a stratified random sampling approach. The current methodology uses intercept data from the National Oceanic and Atmospheric Administration (NOAA) Access Point Angler Intercept Survey (APAIS) to identify an appropriate stratification scheme for species included in the current iteration of *SAFMC RELEASE* (Figure 1.). Effort and Catch data from the APAIS (1981-2023) were selected that included catch (kept or discarded fish) from any of the constituent RELEASE Species. The proposed stratification scheme includes the following strata ***State/Wave/County of Residence/Zip Code***.

Figure 1) SAFMC *RELEASE* Species



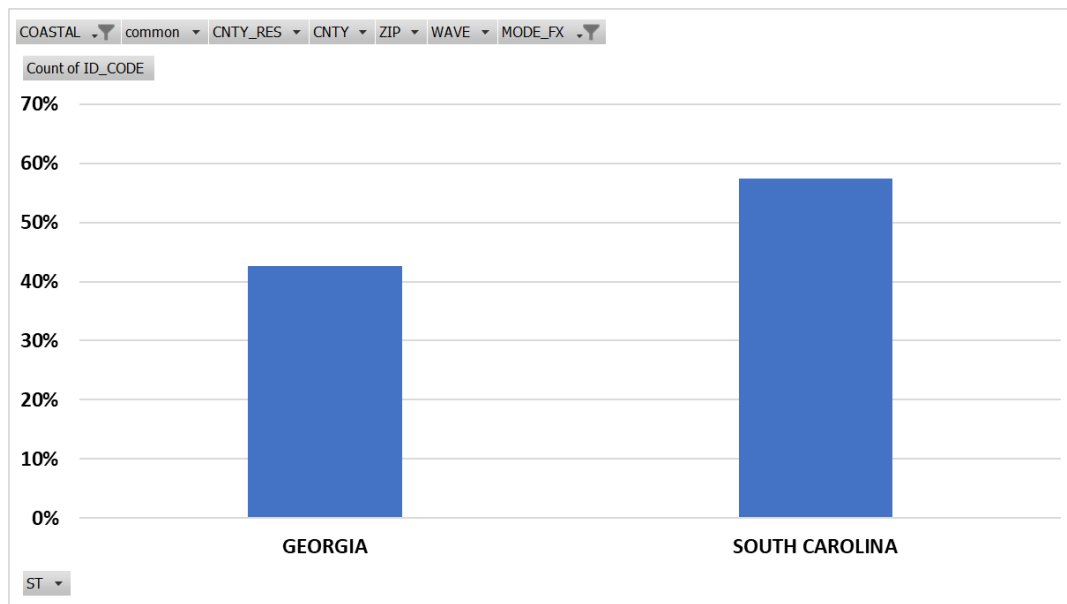
Bold text indicates sections that help with the ranking process.

Yellow highlighted text indicates changes made from the initial proposal.

Strata 1: *State/Wave/County of Residence/Zip Code*

An initial spatial sampling strata will be identified for our area of interest and include South Carolina and Georgia. Figure 2. demonstrates a spatial differential regarding the number of intercepted anglers with observed or reported catch of RELEASE species. These records are from coastal residents intercepted from private boat mode. South Carolina and Georgia contributed 58% and 42% respectively. These results suggest an initial spatial stratification by state that is proportional to state contribution.

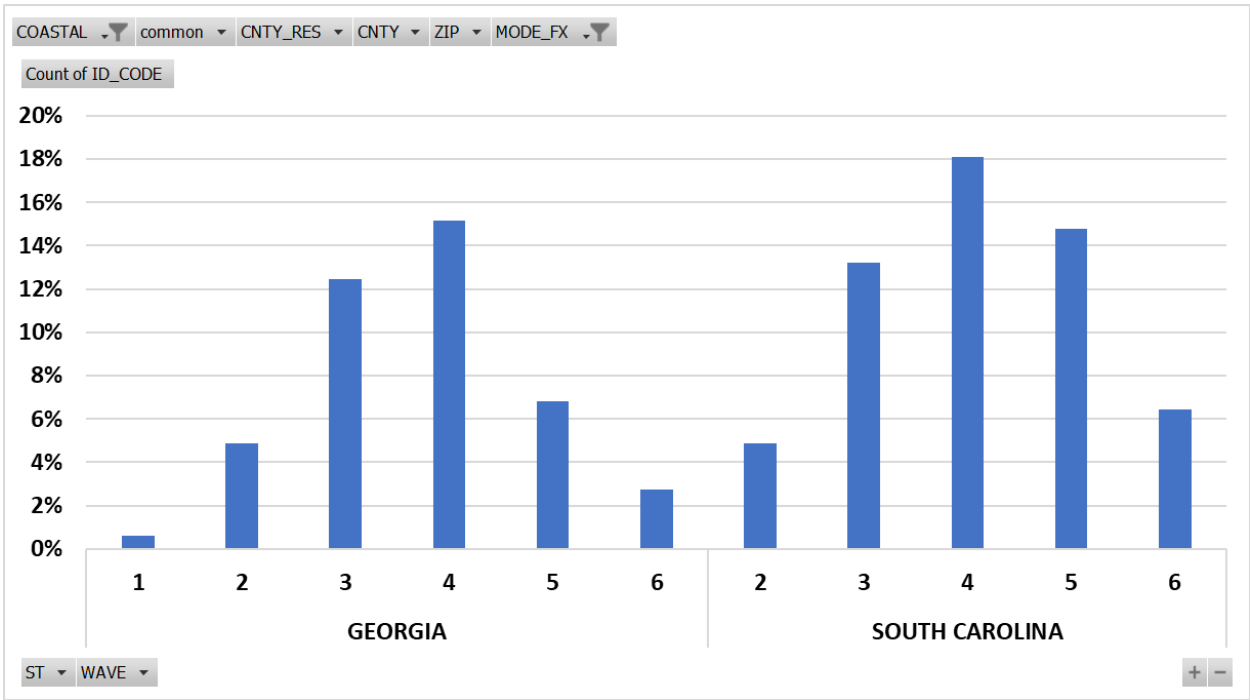
Figure 2) Percentage of Intercepts from Private Boat Mode for Coastal Residents with Catch of RELEASE spp. by State.



Strata 2: State/*Wave*/County of Residence/Zip Code

A temporal sampling strata will be at the wave level (bi-monthly sampling interval Jan/Feb=Wave1, etc.). Figure 3. demonstrates an interactive effect between state and wave regarding intercepts with observed or reported catch of RELEASE species. These records are from coastal residents intercepted from private boat mode. Both South Carolina and Georgia exhibit a bell-shaped distribution with peak intercepts occurring during waves 3, 4, & 5.

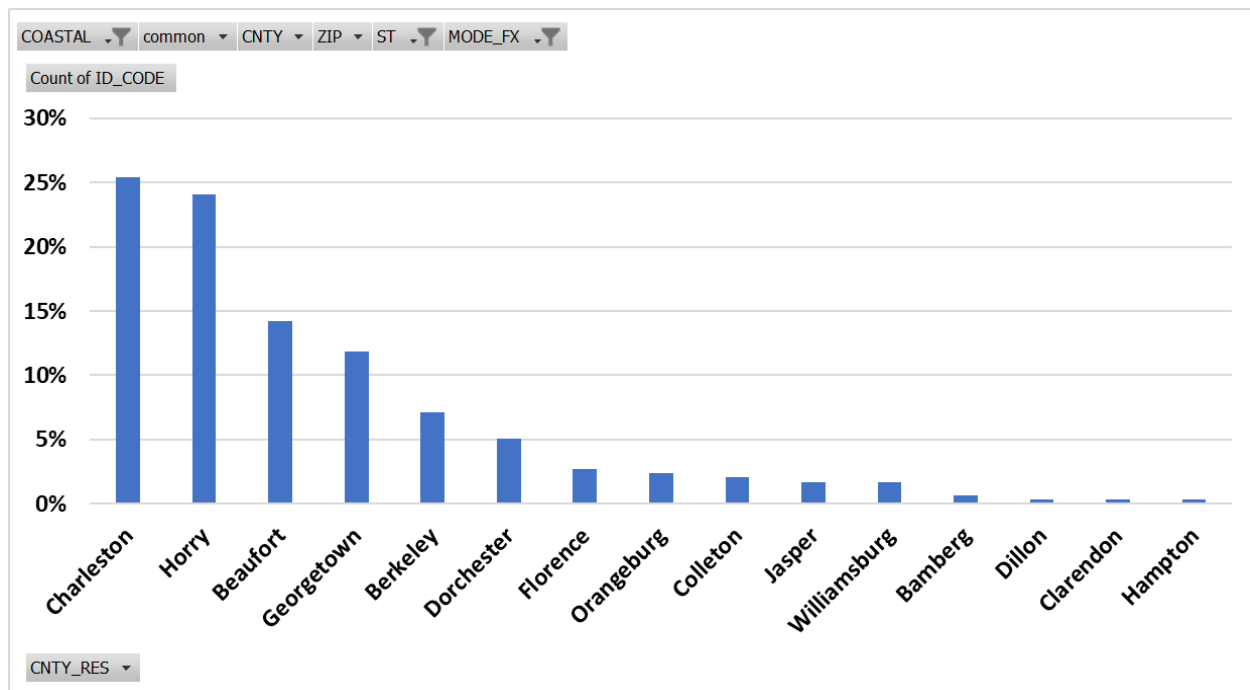
Figure 3) Percentage of Intercepts from Private Boat Mode Coastal Residents with Catch of RELEASE spp. by State and Wave (1981-2023).



Strata 3: *State/Wave/County of Residence/Zip Code*

The remaining sampling strata will use South Carolina as a case study. Figure 4. represents the spatial distribution of APAIS intercepts from coastal county residents with observed or reported catch of RELEASE species by South Carolina County of Residence. The top five counties contribute >87% of total intercepts and include Charleston (25.4%), Horry (24.1%), Beaufort (14.2%), Georgetown (11.9%), Berkeley (7.1%) and Dorchester (5.1%).

Figure 4) Percentage of Intercepts from Private Boat Mode Coastal Residents with Catch of RELEASE spp. by South Carolina County of Residence (1981-2023).



Strata 4: *State/Wave/County of Residence/Zip Code*

Figure 5. represents the spatial distribution of APAIS intercepts with observed or reported catch of RELEASE species by Zip Code for Charleston County South Carolina. These results demonstrate increased spatial resolution within Charleston County. Importantly, similar spatial differentials exist within all coastal counties and states. Within the constituent county of Charleston 4 zip codes (29412, 29414, 29464, 29455) contribute 60% of APAIS intercepts with RELEASE species. Within Charleston County the zip code with the highest level of contribution is 29464 (22.6%) (Figure 6). The application of Zip code as the final sampling strata is the finest spatial resolution available from APAIS intercept data.

Figure 5) Percentage of Intercepts from Private Boat Mode Coastal Residents with Catch of RELEASE spp. by South Carolina Zip Code within Charleston County (1981-2023).

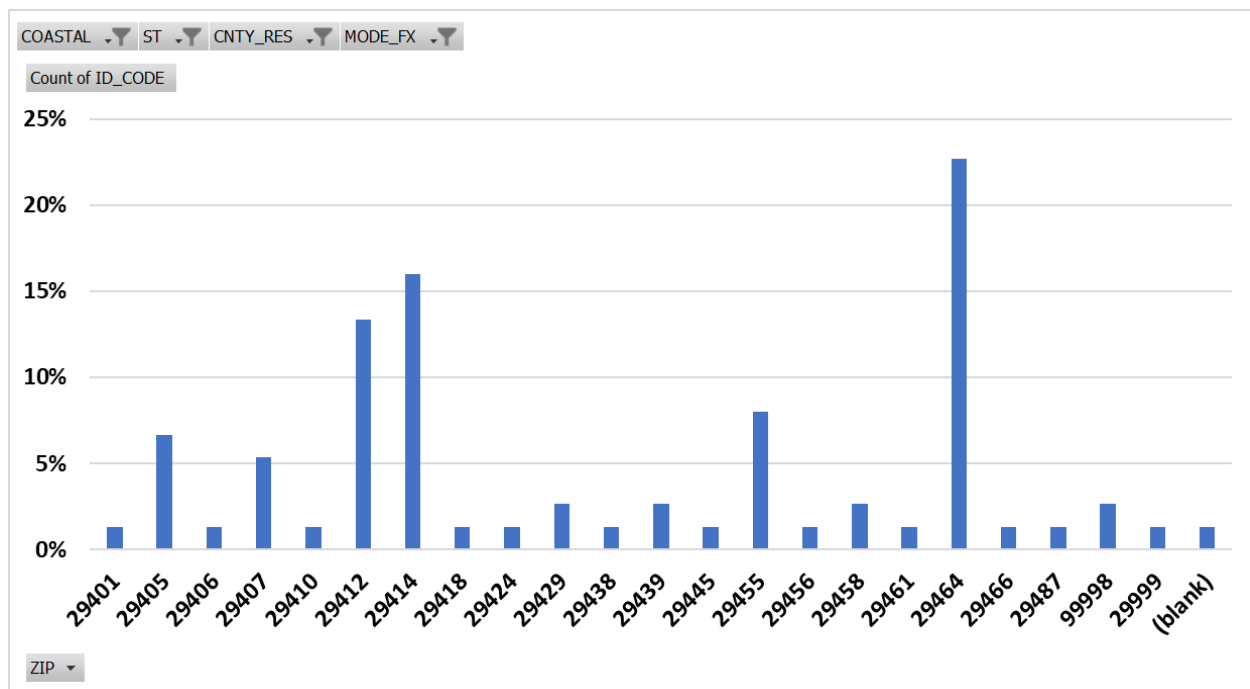
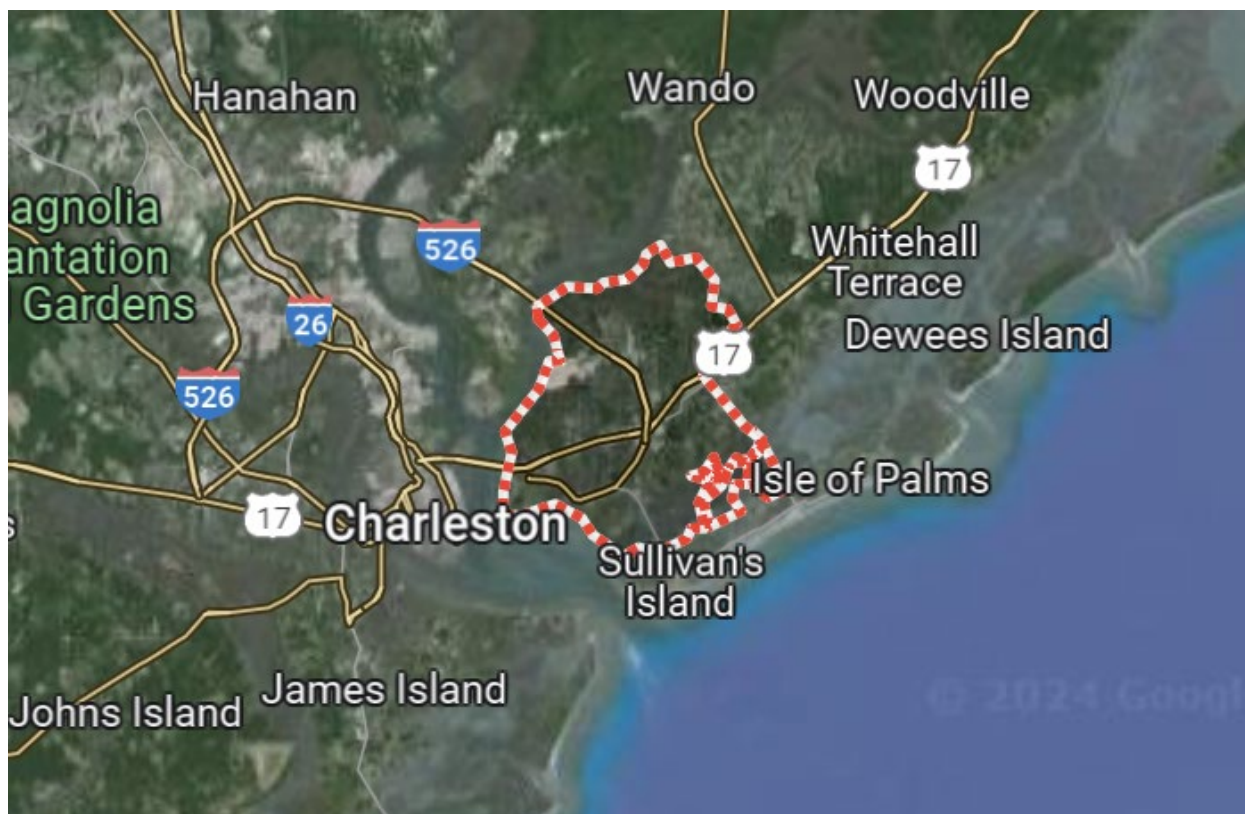


Figure 6) Location of Zip Code **29464** within Charleston County South Carolina

Bold text indicates sections that help with the ranking process.

Yellow highlighted text indicates changes made from the initial proposal.



Literature Cited:

Fricker, Ronald D. "Sampling methods for web and e-mail surveys." *The SAGE handbook of online research methods*. London: SAGE Publications Ltd (2008).

NCDMF. 2023. North Carolina Division of Marine Fisheries License and Statistics Section Annual Report. North Carolina Department of Environmental Quality, Division of Marine Fisheries, Morehead City, NC.



South Carolina Department of Natural Resources

Robert H. Boyles, Jr.
Director

Blair Keppler
Deputy Director for Marine Resources

June 5, 2024

Attn: Geoffrey White
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste 200A-N
Arlington, VA 22201

Dear Mr. White,

The Atlantic Coastal Cooperative Statistics Program recently issued a Request for Proposals to program partners and committees for FY25 funding. Please find this letter as confirmation that the South Carolina Department of Natural Resources (SCDNR) is in support of the South Atlantic Fishery Management Council (SAFMC), in partnership with the NOAA Fisheries Southeast Fisheries Science Center and the Office of Science & Technology, proposal entitled, "Enhancing Recruitment & Retention for the SAFMC Release Citizen Science Project".

The proposal objectives specify a continued and expanded data collection effort for many South Atlantic reef fishes through the SAFMC Release citizen science application, using the National Saltwater Angler Registry (NSAR) license data as a tool to recruit more private recreational fishermen for SAFMC Release. They also plan to develop an incentive program to enhance participant retention and reactivation. SCDNR supports these efforts to encourage voluntary fisheries dependent data submissions from the recreational sector for use in fisheries management decisions.

Once funded, SCDNR will directly assist the project through coordinated information exchange as the project is executed. Actions will include review of the solicitation letter and documentation prior to dissemination to the NSAR South Carolina recreational anglers and collaborate on ideas to gain more participants and improve retention.

If you have any questions, please feel free to contact us at (843) 953-9313.

Sincerely,

A handwritten signature in blue ink, appearing to read "Amy W. Dukes".

Amy Dukes,
Regional Fisheries Manager

A handwritten signature in blue ink, appearing to read "Elizabeth Gooding".

Elizabeth Gooding,
Fisheries Statistics Section Manager

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ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

June 17, 2024

Dear Sir or Madam:

I am writing to express the North Carolina Division of Marine Fisheries' (NCDMF) support for the proposal titled "Enhancing Recruitment and Retention for the SAFMC Release Citizen Science Project". North Carolina is currently exploring various means of collecting better fisheries data, particularly for the recreational sector, and the Release Citizen Science Project will contribute to that goal. NCDMF has previously demonstrated this commitment through partnering with SAFMC Release Citizen Science Project to distribute approximately 10,000 mail solicitations to NC Coastal Recreational Fishing License holders encouraging them to participate. This partnership ultimately accounted for the recruitment of over 20% of the total number of participants for the first phase of this project, which has already delivered valuable release data.

Improved data collection using smartphone technology for the recreational fishing sector has been a hot topic in recent years, and this proposal will help to further explore this method of data collection. Despite general support from the recreational fishing public to use a smartphone application to submit fishing data, it has been shown that retention of application users tends to decrease over time. This proposal will provide the ability to investigate new ways of revitalizing the Release app with the goal of increasing participation.

The results of this project will better inform NCDMF on new approaches to recruit and retain smartphone application users, which will be extremely beneficial as the Division prepares for new mandatory harvest reporting legislation to take effect December 1, 2024. Again, NCDMF fully supports the "Enhancing Recruitment and Retention for the SAFMC Release Citizen Science Project" proposal and recommends the proposal be funded.

Sincerely,

Kathy Rawls
NC Division of Marine Fisheries Director
(252) 515-5520
Kathy.Rawls@deq.nc.gov

State of North Carolina | Division of Marine Fisheries
3441 Arendell Street | P.O. Box 769 | Morehead City, North Carolina 28557
252-726-7021



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August 13, 2024

Geoffrey White
Atlantic Coastal Cooperative Statistics Program
1050 N. Highland St., Ste 200A-N
Arlington, VA 22201

Dear Mr. White,

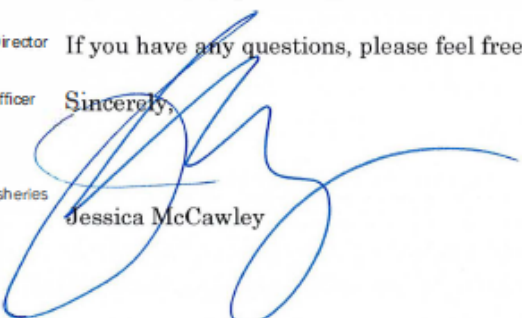
The Florida Fish and Wildlife Conservation Commission (FWC) is supportive of the South Atlantic Fishery Management Council (SAFMC) research proposal entitled, "Enhancing Recruitment & Retention for the SAFMC Release Citizen Science Project" that has been submitted to the Atlantic Coastal Cooperative Statistics Program for FY25 funding.

This is a collaborative project in partnership with NOAA Fisheries Southeast Fisheries Science Center and the Office of Science & Technology. Specifically, this project will expand recreational data collection for many South Atlantic reef fish species through the SAFMC Release citizen science application by collaborating with the National Saltwater Angler Registry license data to recruit more private recreational fishermen for the SAFMC Release.

Once funded, FWC will assist the project through coordinated information exchange as the project is executed as well as review of materials as needed.

If you have any questions, please feel free to contact me at

Sincerely,


Jessica McCawley

Andrew M. Cathey

National Oceanic and Atmospheric Administration
Southeast Fisheries Science Center
Fisheries Statistics Division
Survey Development, Data Management, and Dissemination Branch
101 Pivers Island Road
Beaufort NC 28516
Mobile:(252)-558-3404
E-mail: Andrew.Cathey@NOAA.gov

Professional Preparation:

East Carolina University, PhD, Interdisciplinary Biological Sciences, 2013
Appalachian State University, BS, Ecology and Environmental Biology, 2004

Professional Experience:

Fish Biologist, Southeast Fisheries Science Center, Fisheries Statistics Division, National Oceanic and Atmospheric Administration: Sep 2022-present
Program Supervisor, Coastal Angling Program, North Carolina Division of Marine Fisheries: Jan 2021-Aug 2022
Chief Data Analyst, Coastal Angling Program, North Carolina Division of Marine Fisheries: Nov 2017-Dec 2020
Statistician, Coastal Angling Program, North Carolina Division of Marine Fisheries: Jul 2014-Nov 2017
PhD Candidate, East Carolina University: Oct 2011-Dec 2013

Publications and Technical Reports:

- Cathey AM**, Byrd J (2021) FY20: SAFIS Expansion of “SAFMC Release” and “NCDMF Catch U Later” Discard Reporting Applications. *Atlantic Coast Cooperative Statistics Program Final Project Report*.
- Cathey AM** (2016). Evaluating an Ongoing Recreational Flounder Giggling Mail Survey using Dockside Intercepts. *North Carolina Division of Marine Fisheries Final Project Report*. Grant Number 2007-F206
- Cathey AM** (2015). Assessing Electronic Mobile Devices for the Collection of Recreational Fishing Data. *NOAA Final Project Report*, Task Title: Assessing the Use of Electronic Mobile Devices in Recreational Angling Data, Grant Number EA-133F-12-BA-0034
- Cathey AM**, Miller NR, Kimmel DG (2014). Spatiotemporal Stability of Trace and Minor Elemental Signatures in Early Larval Shell of the Northern Quahog (Hard Clam) *Mercenaria mercenaria*. *Journal of Shellfish Research* 33(1):247-255

Cathey AM, Miller NR, Kimmel DG (2012) Microchemistry of Juvenile *Mercenaria mercenaria* shell: Implications for Modeling Larval Dispersal. *Marine Ecology Progress Series* 465:155-168

Contracts and Grants Awarded:

\$116,182. Standard Atlantic Fisheries Information System (SAFIS) Expansion of Customizable Fisheries Citizen Science Data Collection Application. National Marine Fisheries Service/Atlantic Coast Cooperative Statistics Program. 07/01/2022 06/30/2023 Co-PI: **Cathey AM**, Co-PI: Julia Byrd

\$118,500. Standard Atlantic Fisheries Information System (SAFIS) Expansion of “SAFMC Release” and “NCDMF Catch U Later” Discard Reporting Applications. National Marine Fisheries Service/Atlantic Coast Cooperative Statistics Program. 10/30/2019 05/20/2021 Co-PI: **Cathey AM**, Co-PI: Julia Byrd

\$199,340. Annual surveys of recreational license holders. North Carolina Division of Marine Fisheries Coastal Recreational Fishing License Grant. 07/01/2018 06/30/2023. PI: **Cathey AM**

\$72,500. Determination of species-specific size compositions of recreationally discarded finfish species. North Carolina Division of Marine Fisheries Coastal Recreational Fishing License Grant. 07/01/2018 06/30/2020. PI: **Cathey AM**.

\$142,000. Evaluating an Ongoing Recreational Flounder Giggling Mail Survey using Dockside Intercepts. North Carolina Division of Marine Fisheries Coastal Recreational Fishing License Grant. 01/01/2016 11/30/2016. PI: **Cathey AM**

\$29,042. Assessing Electronic Mobile Devices for the Collection of Recreational Fishing Data. National Marine Fisheries Service. 08/01/2013 12/15/2014. PI: **Cathey AM**

Select Presentations:

American Fisheries Society, 151st Annual Meeting. Baltimore Maryland, September 6-10, 2021. Oral Presentation: Development of the SciFish Application, a Customizable Citizen Science Project Builder

American Fisheries Society, 151st Annual Meeting. Baltimore Maryland, September 6-10, 2021. Oral Presentation: Minimizing Bias in Citizen Science

Cape Hatteras Surf Fishing Heritage Celebration - Cape Hatteras National Seashore (U.S. National Park Service), November 2, 2019. Oral Presentation: Trends in Recreational Surf Fishing on the Northern Outer Banks.

JULIA ISOBEL BYRD

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Work: (843)302-8439
Cell: (828)215-1414
Email: julia.byrd@safmc.net

EDUCATION: UNIVERSITY OF CHARLESTON, SC, Charleston, SC
-**Masters of Environmental Studies**, December 2004

WAKE FOREST UNIVERSITY, Winston-Salem, NC
-**Bachelor of Science in Biology**, Minor in **Environmental Studies**, May 2000

WORK EXPERIENCE:

Citizen Science Program Manager, South Atlantic Fishery Management Council (SAFMC)
Charleston, SC, March 2019 – present

Adjunct faculty at the College of Charleston
Charleston, SC, 2020 to present

Southeast Data Assessment and Review (SEDAR) Coordinator, SAFMC
Charleston, SC, August 2012 – February 2019

Wildlife Biologist III, Office of Fisheries Management, South Carolina Department of Natural Resources
Charleston, SC, August 2005 – August 2012

MARMAP hourly, South Carolina Department of Natural Resources
Charleston, SC, April 2005 – August 2005

Intern, In-Water Sea Turtle Abundance Study, South Carolina Department of Natural Resources
Charleston, SC, May 2003 – August 2003 and May 2004 – September 2004

Education Coordinator, Conservation International
Washington, DC, January 2002 – July 2002

SELECT GRANT PROPOSALS FUNDED as PI or co-PI:

FY2024. Expansion of the FISHstory Citizen Science Project. Julia Byrd (SAFMC) and Dr. Jie Caio (NC State University). Atlantic Coastal Cooperative Statistics Program. \$123,068.

FY2023. Expansion of the FISHstory Citizen Science Project. Julia Byrd (SAFMC) and Dr. Jie Caio (NC State University). Atlantic Coastal Cooperative Statistics Program. \$121,076.

FY2022. SAFIS Expansion of the SciFish Customizable Fisheries Citizen Science Data Collection Application. Julia Byrd (SAFMC) and Dr. Andrew Cathey (NC Division of Marine Fisheries). Atlantic Coastal Cooperative Statistics Program. \$116,182.

FY2021. SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application. Julia Byrd (SAFMC). Atlantic Coastal Cooperative Statistics Program. \$114,792.

FY2020. SAFIS Expansion of “*SAFMC Release*” and “*NC DMF Catch U Later*” Discard Reporting Applications. Atlantic Coastal Cooperative Statistics Program. \$118,500.

FY2019. The FISHstory Project - Documenting historical catch and length estimates from historic photos in the for-hire sector using electronic data collection and imagery analysis platforms and crowdsourcing approaches. Julia Byrd (SAFMC) and Amber VonHarten (SAFMC). NOAA-Fisheries Information Systems. \$75,000.

SELECTED PUBLICATIONS:

- Byrd, J. W.R. Collier, and A. Iberle. 2022. Designing the FISHstory project to support fisheries management. *Fisheries*: 44 (11): 492-498.
- Oremland, L., A. Furnish, J. Byrd, and R. Cody. 2022. How fishery managers can harness the power of the crowd: Using citizen science and non-traditional data sources in fisheries management. *Fisheries*: 44 (11): 459-462.
- Bonney, R., J. Byrd, J. T. Carmichael, L. Cunningham, L. Oremland, J. Shirk, and A. Von Harten. 2021. Sea Change: Using Citizen Science to Inform Fisheries Management. *BioScience*: 71(5): 519-530.
- Brown, S.K., M. Shivani, R. Koenke, D. Agnew, J. Byrd, M. Cryer, C. Dichmont, D. Die, W. Michaels, J. Rive, H. Sparholt, and J. Weiberg. 2020. Patterns and practices in fisheries assessment peer review systems. *Marine Policy*: 117,103880.
- SEDAR. 2015. SEDAR Procedural Workshop 7: Data Best Practices. SEDAR, North Charleston, SC. 151pp. (editor).

SELECTED PROFESSIONAL PRESENTATIONS:

- Byrd, J. and J. Simpson. 2024. SciFish Platform & Policies. NOAA Enterprise Data Management Workshop. (Oral presentation.)
- Byrd, J., C. Collier, and M. Withers. 2023. Supporting Fisheries with Citizen Science: The South Atlantic Fishery Management Council's Approach. NOAA Central Library Seminar Series. (Oral presentation).
- Byrd, J. C. Collier, and A. Iberle. 2022. FISHstory, using citizen science to describe historic catches. SAFMC Seminar Series. (Oral presentation).
- Byrd, J. A. Iberle, C. Collier, D. Cathey, J. Simpson, F. Karp, B. Spain, K. Knowlton, and M. Bucko. 2021. Development of the SciFish Application, a customizable citizen science project builder. American Fisheries Society Annual Meeting. (Oral presentation).
- Byrd, J. C. Collier, and A. Iberle. 2020. The SAFMC's Citizen Science Program: Designing a program to support fisheries science and management decision making. American Fisheries Society Annual Meeting (held virtually). (Oral presentation).
- Byrd, J., J. Carmichael, and J. Neer. 2017. The Importance of Peer Review in SEDAR Stock Assessments. American Fisheries Society Annual Meeting, Tampa, FL. (Oral presentation).
- Carmichael, J., A. VonHarten, and J. Byrd. 2016. Efforts to Develop a South Atlantic Fishery Management Council Citizen Science Program. NOAA Fisheries Quantitative Ecology and Socioeconomics Training Program Webinar Series. (Webinar presentation).
- VonHarten, A. and J. Byrd. 2016. Building a Fishery Citizen Science Program in the U.S. South Atlantic to Improve Management and Policy. 4th International Marine Conservation Congress. (Oral presentation and helped facilitate focus group).

SELECTED HONORS:

- National Conservation Leadership Institute, Cohort 7 (2012-2013)
- Emerging Wildlife Conservation Leaders, Pilot Class (2005-2007)

SELECTED TRAININGS:

- Management Assistance Team (MAT) Leader as Communicator Training
- Smithsonian's Communication & Facilitation Skills for Conservation Managers Course
- Technology of Participation (TOP) Facilitation Methods
- NOAA Coastal Service Center Planning and Facilitating Collaborative Meetings
- Well's National Estuarine Research Reserve Coastal Training Program Collaborative Learning Workshop
- NOAA Coastal Service Center Project Design and Evaluation Workshop
- NOAA Coastal Service Center Public Issues and Conflict Management Workshop
- University of Maryland's Communicating Science Effectively Workshop
- Atlantic States Marine Fisheries Commission Basic Stock Assessment Workshop
- Atlantic States Marine Fisheries Commission Maximum Likelihood Modeling Workshop

PROFESSIONAL MEMBERSHIPS:

- Association for Advancing Participatory Sciences
- American Fisheries Society & SC Chapter of the American Fisheries Society
- ACCSP Operations Committee (2015-present) and SciFish Advisory Panel (2024)

Bold text indicates sections that help with the ranking process.

Yellow highlighted text indicates changes made from the initial proposal.

Contact

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www.linkedin.com/in/laurendolingerfew (LinkedIn)
www.st.nmfs.noaa.gov/st1/recreational/queries/ (Other)
www.countryfish.noaa.gov/register/home.jsp (Other)

Top Skills

Data Policy
SAS (Programming Language)
Data Strategies

Lauren Dolinger Few

Data Manager at NOAA

Ellicott City, Maryland, United States

Summary

Specialize in integrating data management into program management. Develop and implement standards for survey methods and data management. Create applications for survey data management and collaborate across regions, agencies and sectors for data management needs. Communicate business requirements from partners, statisticians and other scientists for application development. Provide SAS analytical support to both internal staff and external partners, enhancing data-driven decision-making processes.

Experience

NOAA Fisheries

Data Management and Program Development Analyst

June 2003 - Present (21 years 1 month)

Silver Spring, MD

Identify and integrate data management requirements into overall program management.

Develop, implement, and monitor program-specific standards for survey methods and data management practices.

Educate and support scientists, analysts, and data managers on the importance and methodologies of data documentation (metadata).

Create and maintain applications to facilitate survey data management.

Collaborate with various departments and agencies on the development and management of databases for survey frames.

Work with regional partners and clients to ensure streamlined access to decentralized data sources.

Coordinate data management needs across multiple programs and agencies.

Communicate business requirements to the support team for application development.

Provide SAS analytical support to staff and external partners.

PBS&J

Senior Scientist

June 2000 - June 2003 (3 years 1 month)

Burtonsville, MD

Developed flexible programs and macros in SAS, Visual Basic and MS Access

Modeled fisheries populations under direction of statisticians

Extracted, transferred, and loaded data between ASCII, Excel, Access and SAS

Generated graphics, reports, and statistics primarily using SAS/Graph and SAS/Stat

Presented data using SAS, and VB graphical interfaces

URS Corporation

Senior Environmental Scientist

January 1996 - June 2000 (4 years 6 months)

Blue Bell, PA

Managed fisheries, chemical and environmental databases (Access, Excel)

Supervised data entry staff for fisheries independent program

Performed environmental and wetland investigations

Prepared summary statistics and wrote reports for clients

Education

Drexel University

M.S, Bioscience and Biotechnology · (1994 - 1997)

Long Island University

B.S, Environmental Biology · (1990 - 1994)