FY21 - SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application

Progress Report: June - November 2021

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Dr. Chip Collier South Atlantic Fishery Management Council 4055 Faber Place Drive, Suite 201 North Charleston, SC 20405 <u>chip.collier@safmc.net</u> 843-302-8444 **Report Title:** FY21 - SAFIS Expansion of Customizable Fisheries Citizen Science Data Collection Application

Recipient Organization: South Atlantic Fishery Management Council (SAFMC)

Principal Investigators (PIs): Julia Byrd and Dr. Chip Collier

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Grant Summary:

This project continues and builds on the work done under the 'FY20: SAFIS Expansion of *SAFMC Release* and North Carolina Division of Marine Fisheries (NCDMF) *Catch U Later* Discard Reporting Applications' grant. The FY20 project combined two separate discard reporting applications, *SAFMC Release* and *Catch U Later*, under a new ACCSP citizen science mobile application, SciFish; expanded the *SAFMC Release* project from collecting data on just Scamp Grouper to all shallow water grouper species (Red, Gag, Black, Scamp, Yellowfin and Yellowmouth Groupers; Red Hind; Rock Hind; Coney and Graysby); and held a series of scoping meetings to develop a roadmap for next steps in the development of the SciFish platform (customizable mobile app and project builder interface). The FY20 project finished in mid-August 2021 with the deployment of the initial version of the SciFish application with the *SAFMC Release* and *Catch U Later* projects.

The primary objectives of this FY21 project are to:

- Continue development and construction of an integrated, customizable fisheries citizen science data application (SciFish) to provide more efficient data collection and reduce future needs for individual applications.
- Continue data collection under the ACCSP release reporting tool via the SAFMC Release project.
- Expand the data collection fields available in the customizable app both within and beyond discard reporting to support development of citizen science and other non-traditional data collection projects among partners.

To accomplish the objectives, work has been divided into five primary tasks outlined below.

Task A: SAFMC Release Survey

Work with contractor/graduate student to conduct a survey of *SAFMC Release* participants to get feedback on the *SAFMC Release* app itself and the transition to the customizable ACCSP release app developed during the FY20 project. Survey results will help inform the expansion of the customizable app in this proposal and be used to better design the app and improve volunteer engagement.

Task B: SciFish Customizable Application and Project Builder Interface Prototype Development

Further build and add enhancements to the existing ACCSP release customizable reporting application (SciFish) to allow partners to develop separate project profiles using menu driven options identified through FY20 scoping meetings.

Task C: Public Outreach

- Recruit new participants to further participation in the existing project, *SAFMC Release*, and apply engagement strategies to retain current participants.
- Recruit participants for new citizen science project identified during FY20 scoping meetings.
- Notify ACCSP partners of the new SAFIS application.

Task D: SAFIS Application Deployment

- SAFIS application deployed.
- Reports available in Data Warehouse to view/download data.

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

- Data successfully submitted via app to SAFIS/Data Warehouse.
- QA/QC for data collected through projects; edit/correct as necessary.
- 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.

Summary of Progress:

Although the SAFMC is the sole PI on this project, participation from other partners in the development of the SciFish platform has continued from the FY20 project. Under the SciFish umbrella, the North Carolina Division of Marine Fisheries (NCDMF) developed and launched the *Catch U Later* project during FY20 to address acute data limitations for the management of flounder. NCDMF staff have continued to participate in the development of SciFish through Tasks B and E. Additionally, the organizing committee from the FY20 scoping meetings (includes representatives from SAFMC, NCDMF, Atlantic Coastal Cooperative Statistics Program, Harbor Light Software, Georgia Department of Natural Resources, and Rhode Island Division of Marine Fisheries) has continued to be involved in the development of SciFish via Task B. The organizing committee has been meeting approximately every other week during the reporting period to discuss progress, coordinate activities, and complete objectives under the grant. Progress updates are summarized by task within this report.

Task A: SAFMC Release Survey

Work on the SAFMC Release survey has not started. It is scheduled to get underway later in the grant period.

Task B: SciFish Customizable Mobile Application and Project Builder Interface Prototype Development

Technical development activity during the reporting period addressed enhancements to the SciFish mobile application and to the Project Builder application.

SciFish mobile application development focused on resolving final issues to make the application ready for general availability in a production environment. Issues addressed include:

- Testing and resolution of final remaining technical issues, including the accurate reliable uploading of photos, elegant handling of sending feedback when no internet is available, and managing user permissions for location and photo access required by Android and iOS.
- Modifications based on feedback during trial usage, such as removing minimum length requirements for the *Catch U Later* project.
- Removal of the experimental feature of measuring fish length using the phone's camera, due to poor user experience in the usage of the technology.
- Refinement of language in the application's About page.
- UI theming refinements for the *Catch U Later* project.
- Support for the latest Android and iOS operating systems and enhancements required for deploying to the app stores and listings for the product in the app store applications.

Development of the Project Builder application commenced during this reporting period. Activities included:

- Requirements gathering and application architecture definition.
- Prototyping of the base application with functional architectural frameworks.
- Creating a sample project and editing of commands available to a user on the home page of their SciFish project.

Additionally, during the FY20 SciFish scoping meetings a need was identified to develop policies for partners to build and support projects in the SciFish platform. Development of SciFish policies and procedures are included within a FY22 ACCSP proposal. However, as part of this project, the organizing committee will be engaging with ACCSP leadership on SciFish policy development which will be critical in laying the groundwork for the work to be conducted as part of the FY22 project. During the reporting period, the organizing committee met to begin planning the process that will be used to engage leadership.

Task C: Public Outreach

During the reporting period, the following outreach activities have been conducted for the SAFMC *Release* project.

- SAFMC staff updated project branding and incorporated the new branding on the <u>project</u> <u>webpage</u> and on outreach materials. Project rack and wallet cards were designed and printed. Project flyers and stickers were designed and will be printed soon. (See Appendix A.)
- Staff contacted all individuals with *SAFMC Release* user accounts (n=52) from the *SAFMC Release* standalone app (from the initial pilot project to collect information on released Scamp Grouper) to help transition to the new SciFish application and share information on the shallow water grouper expansion. Approximately half indicated their continued interest in the project and in transitioning to the project in the new SciFish app.
- Staff reached out via phone call and emails to additional fishermen and captains recommended by others in the Council network and have recruited 12 new individuals.
- Social media content was developed for the project and 11 *SAFMC Release* focused posts have been shared via the Council's social media platforms (Facebook, Twitter, and Instagram).

- Staff developed an inventory of tackle shops, marinas, and fish houses in the South Atlantic region. Studies have shown that tackle shops are considered a reliable source of information among fishermen and that fishermen are likely to seek information from these businesses. This inventory has helped staff identify places to visit to assist with project recruitment. Staff reached out to state and Sea Grant partner agencies to gather contact and location information, as well as held meetings with these agencies to gain insights on best practices for building relationships with these businesses.
- During the reporting period, staff visited 39 tackle shops, marinas, and fish houses (16 in SC, 8 in GA, and 15 on the east coast of FL) to begin developing relationships with these businesses. During these visits staff shared information on *SAFMC Release* and distributed project promotional materials. There are plans to continue this tackle shop push in 2022.
- Staff gave presentations on the SAFMC Citizen Science Program, including updates on the SAFMC Release project to the SAFMC, Snapper Grouper Advisory Panel, Outreach and Communications Advisory Panel, Citizen Science Operations Committee, and Citizen Science Projects Advisory Committee.
- Staff have started development of a quarterly newsletter to share project updates and other relevant information with participants. The first newsletter will be distributed in early January 2022. Additionally, staff are working to develop a shiny application with data summaries to share with participants.

Task D: SAFIS Application Deployment

Development of the SciFish platform (customizable application and project builder interface) is currently underway. Deployment of the platform will occur after development and QA/QC of the prototype is complete.

Task E: Data Collection, QA/QC, and Analysis

• 85 individuals have downloaded the SciFish application

SAFMC Release

- 17 individual participants have submitted 62 records to the ACCSP data warehouse since the start of the project (June 2019).
- QA/QC to validate logged records is accomplished by SAFMC staff; staff follow up with participants to verify any unusual submissions.
- Data will be provided for SAFMC related assessment and management, as needed. Data were provided for consideration during the SEDAR 68 South Atlantic Scamp research track assessment in 2020.

NCDMF Catch U Later

- 35 participants have submitted 345 records to the ACCSP data warehouse.
- 38 or 11% of records were not usable due to no photograph being uploaded or unusable photograph. (Photos are a required data field for Catch U Later.)
- 161 records or 47% used the GPS functionality of the application.
- QA/QC to validate the species reported is accomplished with MRIP APAIS staff.
- Submitted data is directly applicable to the management of Flounder. Specifically, the NCDMF seeks consideration of conservation equivalencies for Summer Flounder by the Mid Atlantic Fisheries Management Council

Project Challenges & Opportunities

- While this project was originally scheduled to begin in June 2021, the project start was delayed until mid-August 2021. Funding for the project was not received until July 2021 and the 'FY20: SAFIS Expansion of SAFMC Release and North Carolina Division of Marine Fisheries (NCDMF) Catch U Later Discard Reporting Applications' project was not complete until mid-August 2021. This project builds on the work done in the FY20 project, so could not get underway until that project was complete.
- Due to SAFMC COVID-19 travel restrictions, staff were not able to travel until late October 2021. We were planning to conduct a variety of in-person outreach initiatives (e.g. visiting tackle shops, marinas, fishing clubs, etc.) to assist with project recruitment. COVID restrictions hindered some of these 'boots on the ground' efforts during the reporting period. However, travel restrictions have relaxed, and staff were able to begin visiting tackle shops in late 2021. More targeted in-person outreach initiatives are being planned for 2022.
- Participation has continued from partners involved in the initial 'FY20: SAFIS Expansion of *SAFMC Release* and North Carolina Division of Marine Fisheries (NCDMF) *Catch U Later* Discard Reporting Applications' project. NCDMF has continued data collection and analysis under their *Catch U Later* project within SciFish and organizing committee members from the FY20 scoping meetings have continued their involvement in the next stage of SciFish development. Having several agencies involved in the continued development of the SciFish platform will help ensure the final product better meets ACCSP partner needs. Additionally two new projects have been identified for development in the SciFish application, NCDMF's *Tagging Program* and the University of New England's *Mail-A-Scale* program. After participating in the FY20 scoping meetings, project managers for these programs requested to be part of the SciFish beta testing, helping provide further 'proof of concept' that the application can be adapted to fit different partners' project and data collection needs. These programs will help test the SciFish platform prototype developed during this project.
- At the September 2021 SAFMC meeting, guidance was provided for the expansion of the SAFMC Release project to include Red Snapper to help improve information available on released fish for consideration in the next assessment. Staff have begun meeting with a planning team to explore the incorporation of Red Snapper into the project.

Expenditures

Expenditures during the reporting period are summarized in the table below.

Expense Category	Grant Total	Expenditures through 12/2/2021
Personnel	\$48,160	\$12,300
Travel	\$4,200	\$371
Other	\$2,000	\$670
Indirect	\$5,432	\$5,432
TOTAL	\$59,792	\$18,773

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traveling. The PIs anticipate needing to request a no-cost extension for this project due to the delayed start and restrictions related to COVID that have impacted travel.

Appendix A. SAFMC Release branding and outreach materials developed during the reporting period (June – November 2021).

1) SAFMC Release logo and branding



2) SAFMC Release sticker



3) SAFMC Release wallet card





4) SAFMC Release rack card



5) SAFMC Release One Page Flyer



MAKE A DIFFERENCE IN YOUR FISHERY AND HELP COLLECT DATA ON RELEASED FISH

The SAFMC Release project empowers bottom fishermen from all sectors to provide details about released shallow water grouper species to inform which species are being released, P what length they are, and how many survive. Participating in this citizen science initiative is as easy as Reel, Record, Release!

Reel 🗐 🗉

Whether you fish commercially, recreationally, or for-hire, do what you do best and catch those fish!



Record the length, depth, optional location, any shark interaction, or descending device usage in the SciFish mobile app.



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Use a proper release technique to increase the fish's chance of survival and your chance of catching it another day.

GET INVOLVED

- Visit the SAFMC Release webpage by scanning the QR Code.
- Create an account and download the free SciFish app on your mobile device.
- Log in using the provided account information.
- Start contributing to the knowledge of our
- grouper fishery. • Contact us for more info:
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 Nick.smillie@safmc.net



