



South Atlantic Fishery Management Council **Citizen Science Program Update**

Dolphin Wahoo AP Meeting

October 2020



Topics



Development of the SAFMC's Citizen Science Program



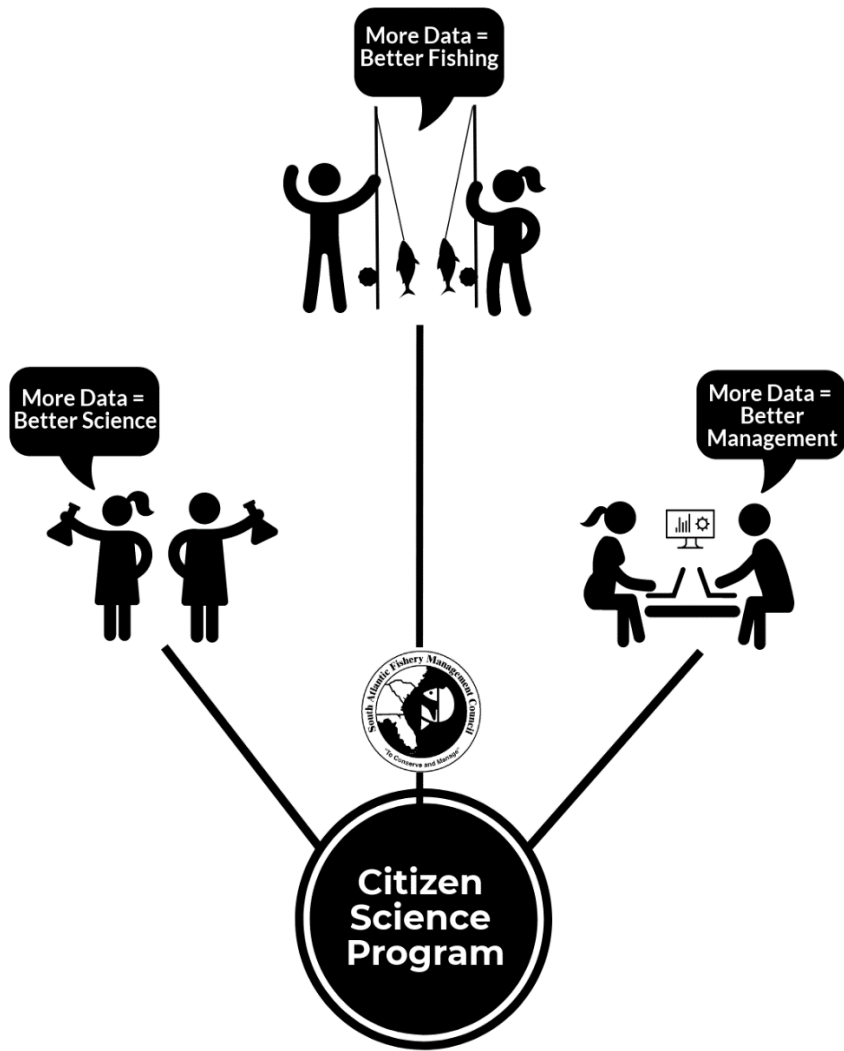
Update on Programmatic Activities



Update on Pilot Projects: SAFMC Scamp Release & FISHstory



Why Citizen Science?



SAFMC has long standing data needs

Many data needs can't be met without the help of fishermen

Fishermen want to help

Citizen Science provides the opportunity



Program Initiation

Citizen Science Program Design Workshop - 2016



Over 60 fishermen, managers, scientists

- Rick Bonney – Cornell Lab of Ornithology
- Jennifer Shirk – Citizen Science Association



Brainstorming

- Projects
- What is success, failure?
- What will people do?

Workshop Result - *Program 'Blueprint'*

SAFMC Citizen Science Program Approach

- Fill data gaps & address research needs
- Complement existing programs & partnerships - *NOT compete or replace*
- Intentional project design - *direct application/use in management or stock assessments*
- Fishermen & scientist collaboration
- Umbrella to support projects – *internal & external*



SAFMC Citizen Science Research Needs

| TOPIC | DATA NEEDED: | POTENTIAL OUTCOME: |
|---|--|---|
| Age Sampling | Otolith collection | Age of catches |
| Maturity Data | Gonad collection | Improved reproductive information |
| Discard information | Length, depth, # of fish, reason, devices used | Improved discard removal estimates, size comps of discards |
| Genetic Sampling | Fin clips | Stock I.D. |
| Fishing Infrastructure | Location and type of infrastructure | Document social/economic impacts of regulations over time |
| Historical Fishing Photos | Images (electronic) | Length comps; improved historical information |
| Fishing Oral Histories | Fishermen Interview | Improved understanding of the changes in the fishery over time |
| Oceanographic/ Environmental Conditions | Bottom temperature; weather | Build database on climate and changing conditions |
| Rare or data limited species observations | Point observations | Baseline for species shift; increased information on data limited species |
| Diet Samples | Stomach collection | Improved diet information |
| Personal Fishing Logbooks/Diaries | Logbook data (electronic) | Develop relative indices of abundance |

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Activities 2020

Program Evaluation

- *Working on with Rick Bonney, Jennifer Shirk, and Operations Committee*
- *Finalizing goals, objectives, strategies, and indicators*
- *Developing program evaluation questions and evaluation options*

Cit Sci Advisory Panel Meetings

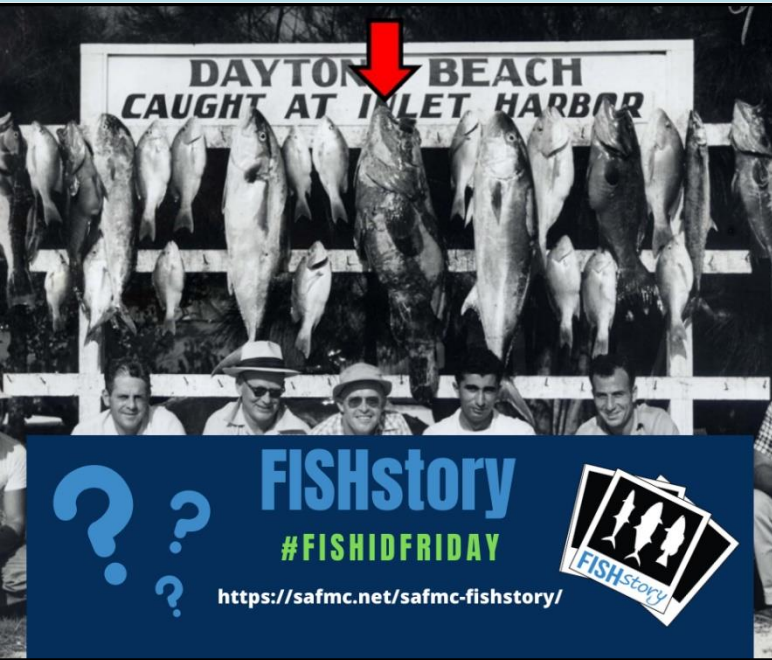
- *June, Aug & Oct 2020: Operations Committee*
- *Fall 2020: Projects Advisory Committee*

AFS Cit Sci Symposium with NOAA colleagues

- *Organizing symposium and virtual panel discussion*
- *Presentations on Program development and SAFMC Scamp Release & FISHstory*



Activities 2020



Bioscience manuscript, Bonney et al. – revisions almost complete; resubmit Fall 2020

Citizen Science Social Media Strategy

- *#CitSciFri branding*
- *Highlight program activities, projects, & volunteers*
- *Preliminary analytics review*

Citizen Science Email Distribution List

- *Working to grow distribution list*
- *Target to provide bi-monthly updates*

Cit Sci Corner in SAFMC Newsletter

Projects & Collaborations



PROJECTS IN PROGRESS:

- Scamp Release Pilot Project
- FISHstory Pilot Project
- Promoting Gray's Reef Through Engaging Georgia Anglers

PROJECTS UNDER DEVELOPMENT:

- Rare Species Observations
- Diver Observations for Data Limited Species

ADDITIONAL COLLABORATIONS UNDER DEVELOPMENT:

- Participatory Workshops
- SciStarter



Projects & Collaborations Under Development

Rare Species Observations

- *Partners: UNC, NOAA Fisheries, SECOORA, University of Tasmania*
- *May 2020: Submitted LOI to SECOORA*



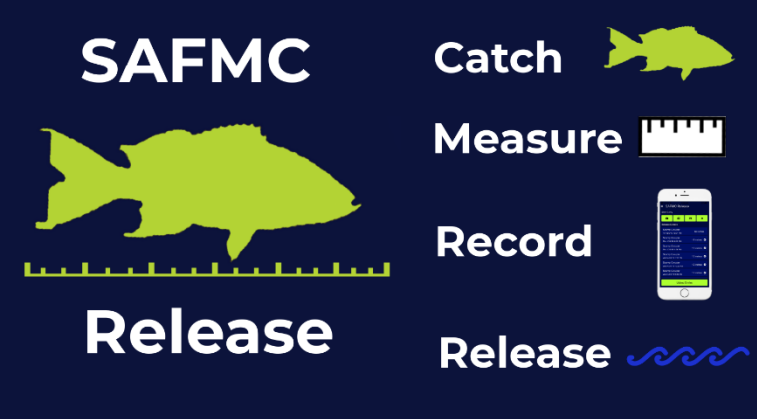
Diver Observations for Data Limited Species

- *Partners: REEF and SECOORA*
- *Previously submitted proposals not funded*
- *Looking for other funding opportunities*

Dolphin Wahoo Participatory Workshops

- *Partners: SEFSC*
- *NC/VA Workshops:*
 - *Held March 2020*
 - *Analysis underway*
- *FL Keys Workshops*
 - *Originally scheduled Summer 2020*
 - *Postponed due to impacts from COVID*

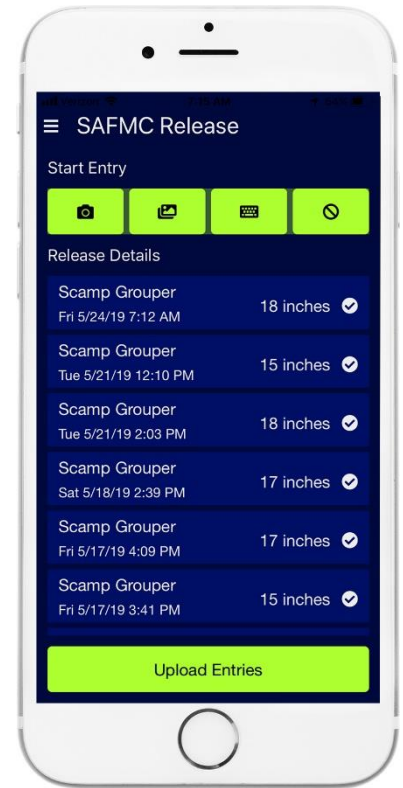




SAFMC Scamp Release

Pilot app launched June 2019

- Collecting info on scamp discards via mobile app
- Data collection focused on filling data gaps: length of released fish & information to inform discard mortality
- Working on recruitment and retention of commercial, for-hire, & recreational fishermen
- Annual update provided to participants
- Data provided for review at SEDAR 68 (Gulf of Mexico and South Atlantic Scamp) Data Workshop



SAFMC Scamp Release

FY20 ACCSP Proposal - underway

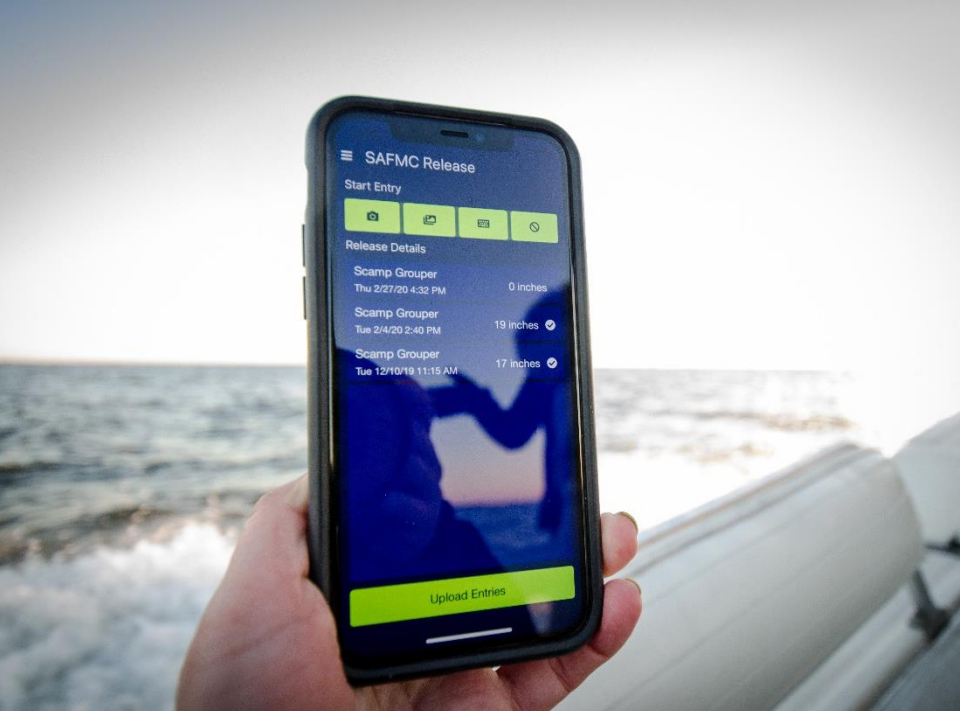
- Combine SAFMC Release & NCDMF's Catch U Later under ACCSP umbrella
- Expand SAFMC Release to all shallow water grouper
- Scoping meetings for development of customizable app

FY21 ACCSP Proposal - submitted

- Development of customizable app
- Expansion of app beyond biological discard data

College of Charleston Graduate Student: Nick Smilie

- Research will include user perceptions of the app to identify ways to improve user recruitment & retention
- Received 2020-2021 Research Assistantship from the College





FISHstory

A pilot project to document historic for-hire catch and length estimates using historic photos





FISHstory Background

- Limited recreational fisheries data prior to 1970s
- For-hire fleets have tradition of displaying catch at dock for commemorative photos
- Historic photos untapped source of data





FISHstory Overview

- Pilot project uses historic dock photos to estimate for-hire catch & length composition
- 1,300 color and black and white photos from Daytona Beach, FL
- Photos from the 1940's through 70's





FISHstory Project Components



Digitizing historic fishing photos – *complete*



For-hire catch composition - *underway*

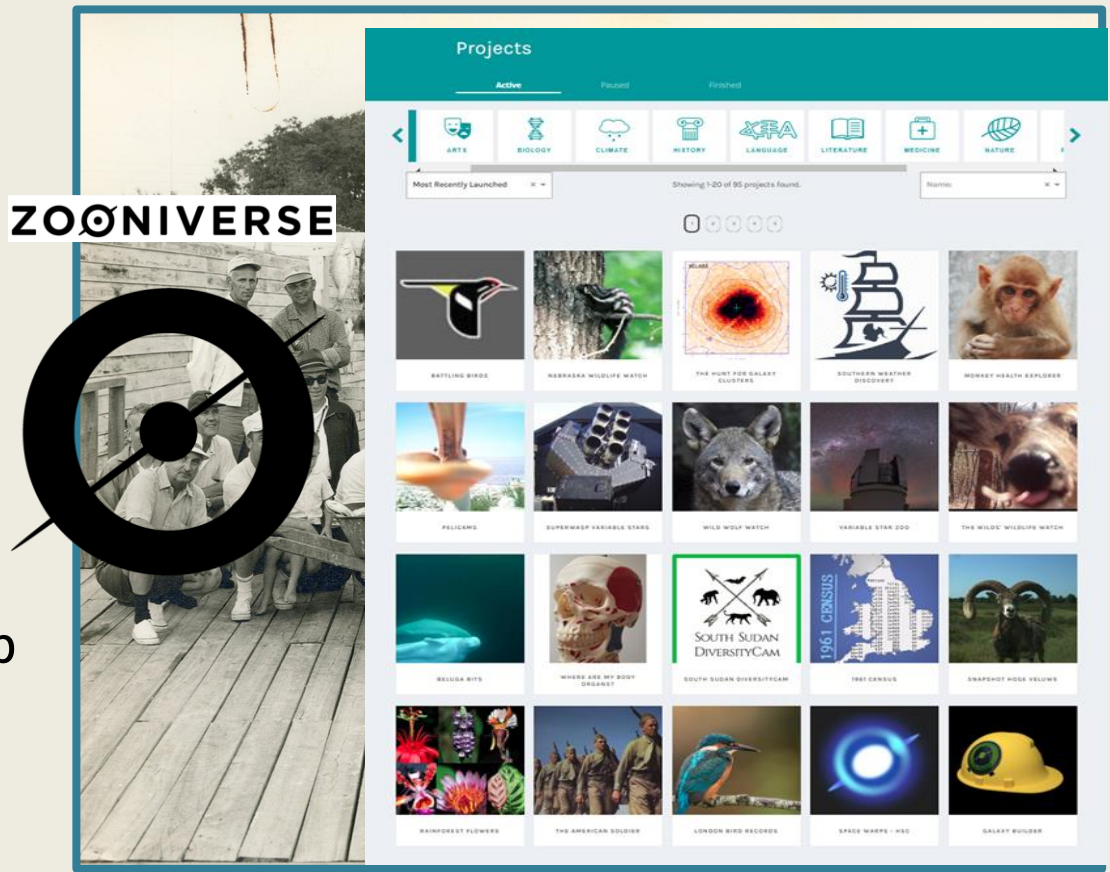


Method to estimate length composition - *underway*



For-Hire Catch Composition

- Online crowdsourcing interface Zooniverse
- Volunteers trained to identify and count fish and anglers in photos
- Multiple volunteers classify each photo
- Validation Team will help verify identifications & counts when volunteers disagree





For-Hire Catch Composition

as of October 14, 2020

- **1,449** volunteers
- **24,910** classifications
- **1,374** individual photos uploaded
 - All **1,374** photos have been linked to the FISH & PEOPLE: Count workflow
 - **700** photos have been linked to the FISH: Classify workflow
- **1,773** photos have been retired
 - **1,374** from FISH & PEOPLE: Count workflow
 - **399** from FISH: Classify workflow



PC: Rusty Hudson

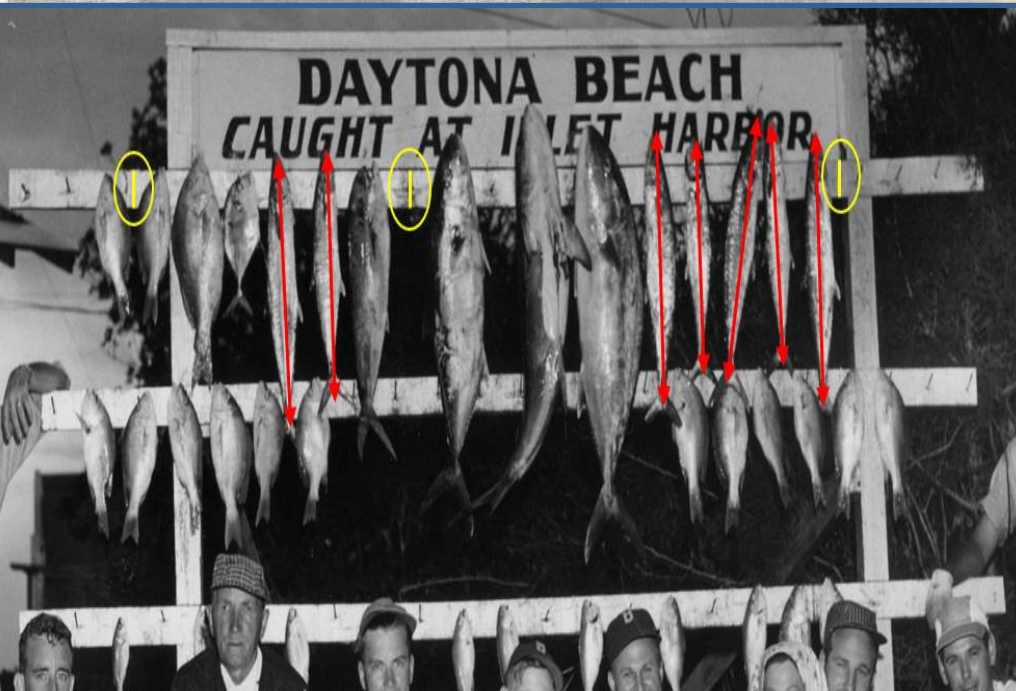


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Length Analysis

- Estimate fish length in photo using lumber in leaderboard as scale
- Length measuring protocol developed using ImageJ software
- Resampling method to produce length comps & associated uncertainty
- Pilot tested on one species: King Mackerel





Outreach & Promotion

- FISHstory & SAFMC Outreach teams have been contacting industry, communication & education contacts
- FISHstory features:
 - [NC Sea Grant's Hook Line & Science](#)
 - [Episode 74 of the Fisheries Podcast](#)
 - [SCDNR Coastal Resources blog](#)
 - [The Fishing Wire](#)
 - [SciStarter: Dive into Summer Citizen Science](#)
 - [Guest blog for Sci/Starter/Discover CitSci Salon](#)
 - [Virtual Field Trip with Earth Echo: Sept 29](#)
 - Project feature in annual Zooniverse 'highlights' book



Keep Up with Projects & the Program!

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<http://safmc.net/citizen-science-program/>