



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

**Mackerel Cobia AP Meeting**

**November 2020**



# 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

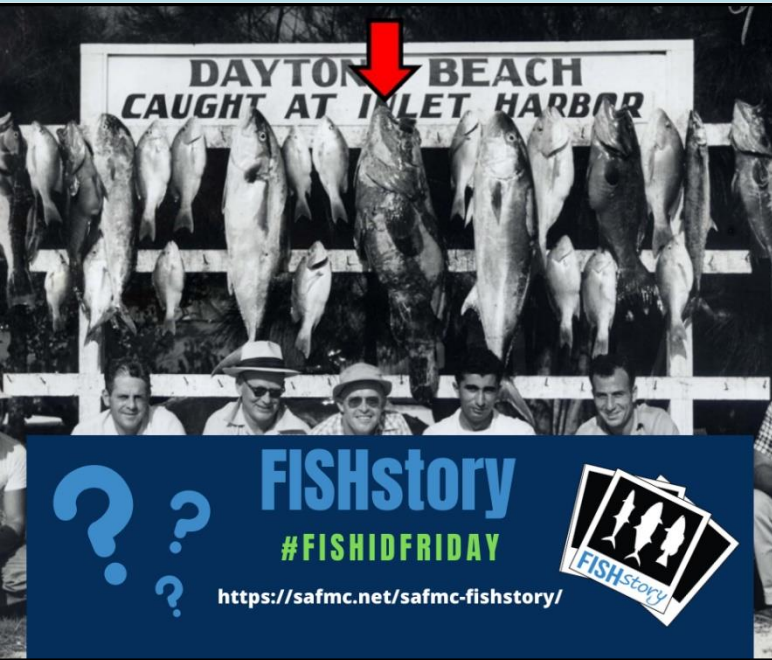
- *June, Aug & Oct 2020: Operations Committee*
- *Nov 2020: Projects Advisory Committee*

## AFS Cit Sci Symposium with NOAA colleagues

- *Organized 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

## Federal Inter-Agency Cit Sci Work Group

- *Advisor to help review draft programmatic docs*

## Citizen Science Social Media Strategy

- *#CitSciFri branding*
- *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*



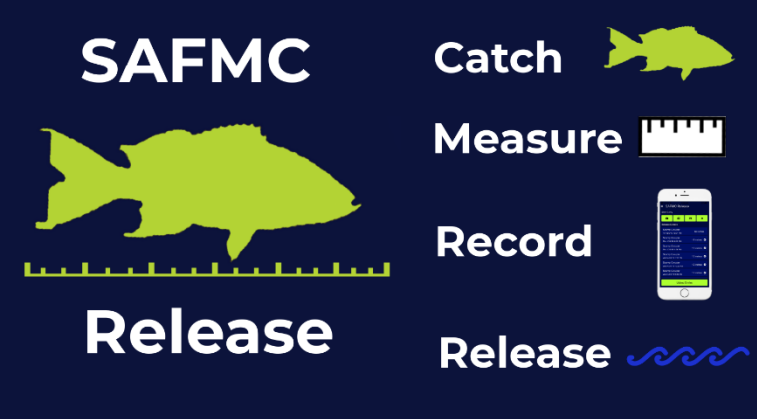
## Diver Observations for Data Limited Species

- *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
- 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

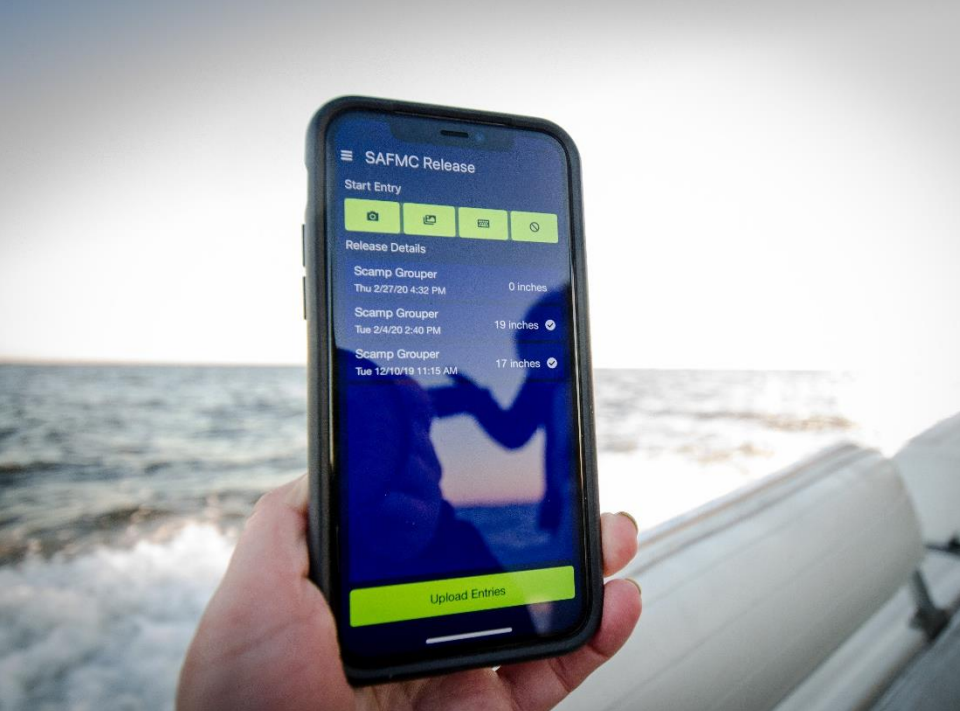
Scoping meetings for development of customizable citizen science app

- Series of short webinar meetings between Jan & March 2021
- **NEED FISHERMEN PARTICIPATION IN SCOPING MEETINGS!**

## **FY21 ACCSP Proposal - submitted**

Development of customizable citizen science app

Expansion of app beyond biological discard data





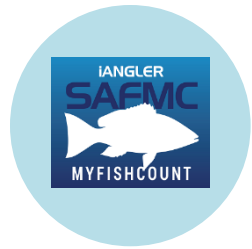
# *College of Charleston Graduate Student: Nick Smillie*

## *Research to identify best strategies to market self-report apps to fishermen to improve participant recruitment, retention & reactivation*



Interviews with fishermen who have SAFMC Release accounts

Would like to talk with fishermen who have used the app and those who have not used the app



Further analysis of MyFishCount 2018 & 2020 survey results

Analyze marketing strategies that influence account creation & trip reports



Analysis will identify common themes between survey and interview responses

- Favored app features & functionalities
- Perceptions of self-report
- Motivations to participate (or not)
- Preferred and effective outreach & marketing strategies





# ***FISHstory***

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





# FISHstory Project Components



**Digitizing historic fishing photos – *complete***



**For-hire catch composition - *underway***



**Method to estimate length composition - *underway***





# For-Hire Catch Composition

*as of October 16, 2020*

- **1,325** volunteers
- **23,060** classifications
- **1,374** individual photos uploaded
  - All **1,374** photos have been linked to the FISH & PEOPLE: Count workflow
  - **500** photos have been linked to the FISH: Classify workflow
- **1,667** photos have been retired
  - **1,374** from FISH & PEOPLE: Count workflow
  - **293** from FISH: Classify workflow



PC: Rusty Hudson



PC: Rusty Hudson





# For-Hire Catch Composition

- **Design Team Meeting: July 2020**
- **Validation Team**
  - Beta test analysis complete
  - Regular meetings & training
  - Will begin verifying 'live' data soon
- **'Live' Data Analysis**
  - Preliminary analysis underway
  - Developing code to format & analyze data
  - Developing thresholds for Validation Team review







# 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







# Length Analysis

*Goal: accurately describe lengths of fish from historic photos*

- Test differences between analysts
- Test accuracy of readers on known length objects
- Develop a protocol to collect lengths from historic photos
- Develop a length distribution with error estimates







# Length Methods

Easy Part: Measure Fish

Hard Part: How long is the line from snout to tail?

- Need to convert unknown size of fish to length





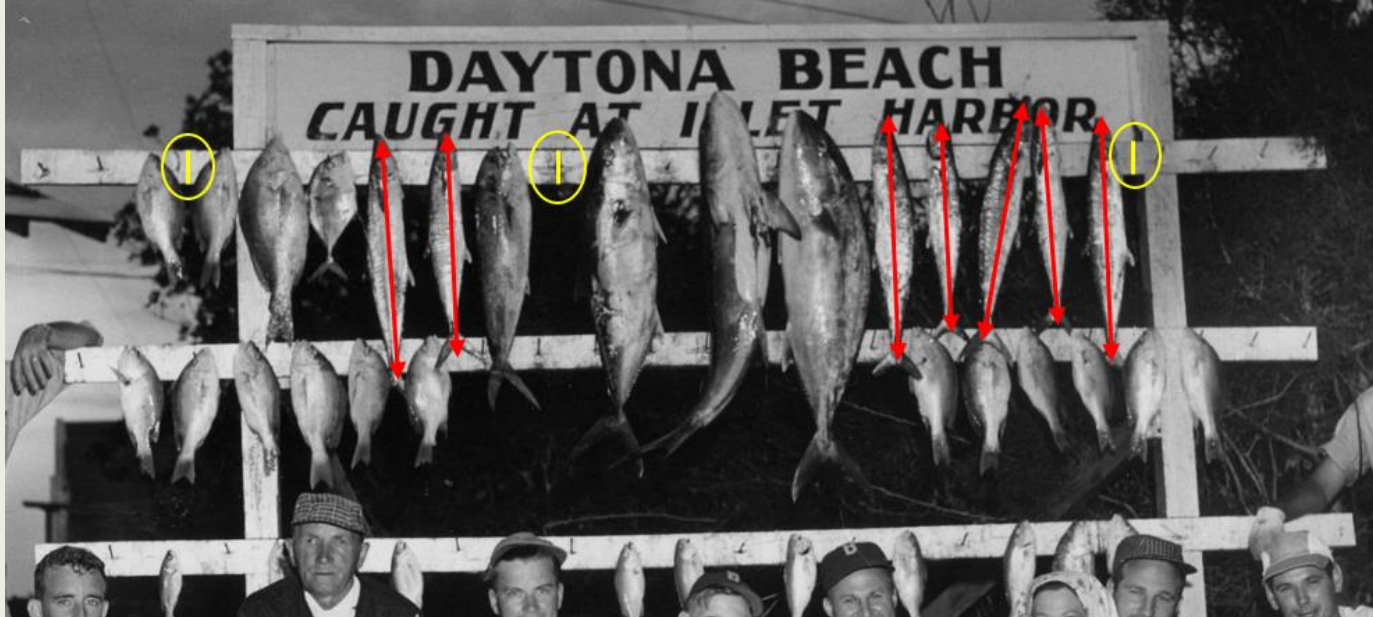
# Length Methods

- Staff worked with FISHstory Design Team to develop and pilot test draft protocol
- Pilot test method on King Mackerel
- ImageJ used to get photo measurements
- 5 analysts trained for production length measurements
- All analysts must complete virtual training with staff & calibration photo set prior to production length measurements
- 2 individuals analyze each photo



# ImageJ Measurements

- 3 'reference' measurements taken per photo
- 'Reference measurements taken right, middle, and left of leaderboard racks; try to bracket the fish being measured
- All King Mackerel in photo measured if possible







# Scalar Development

- Compare length estimates among readers to known values
- Expansion from pixels to length
- Explore different items as scalars (labeled A-G)
- Identify scalar that performs best in estimating true length of boards





# Scalar Development

## Accuracy

Goal: Accurately estimate length of fish within two inches based on the bin size for King Mackerel in SEDAR 38 Updated (SEDAR 2020)

Comparison of percent of estimated length measurements within 2 inches of the true length measures for each scalar.

Error from True Length	Avg 2x3	Letter H	SAFMC Logo	FISH story Logo	Wood Vert	Wood Horiz*	White Board
< 2 inches	96%	66%	74%	78%	71%	100%	99%

\*Only one analyst measured this scalar

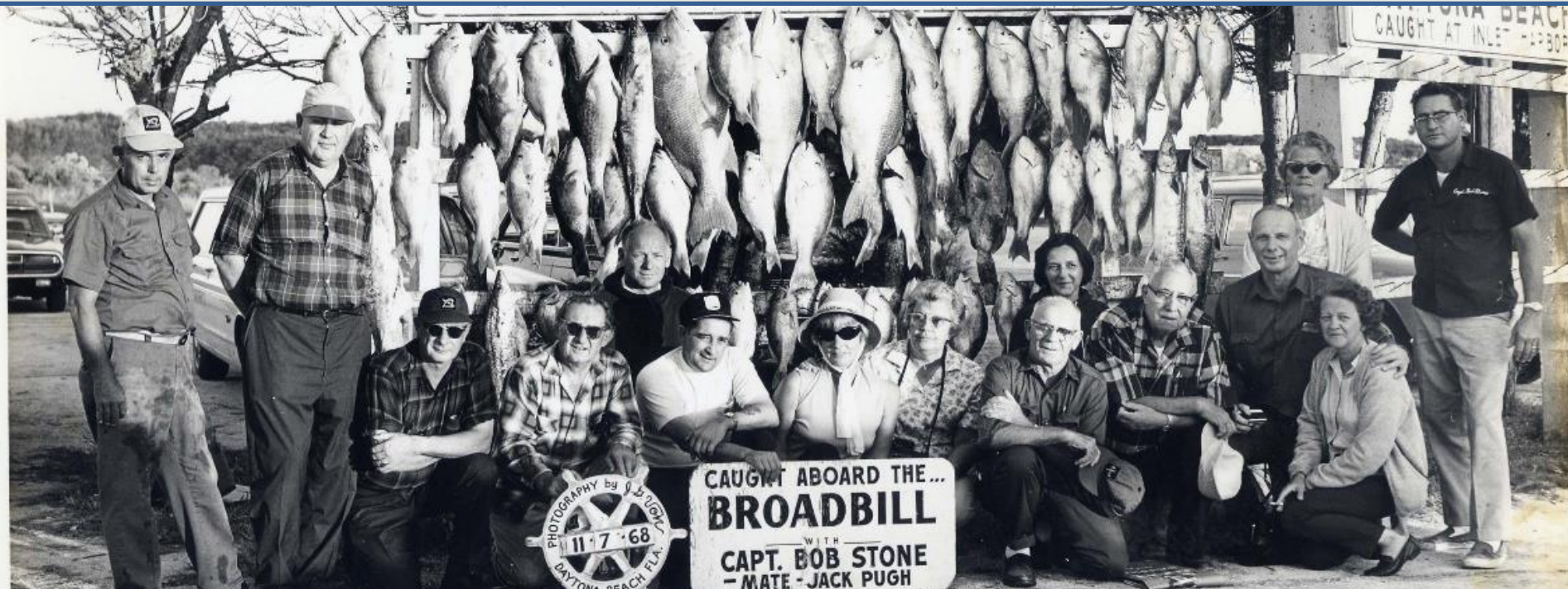


# Comparison of Historical Photos

15 photos measured by all analysts for comparison

- Some difference in the size distribution was present among analysts
- Variation seemed to be 1 inch different which is smaller than the 2-inch size bins.

Comparisons also done with objects of known length in photos: oil barrels & Phyllis Hudson

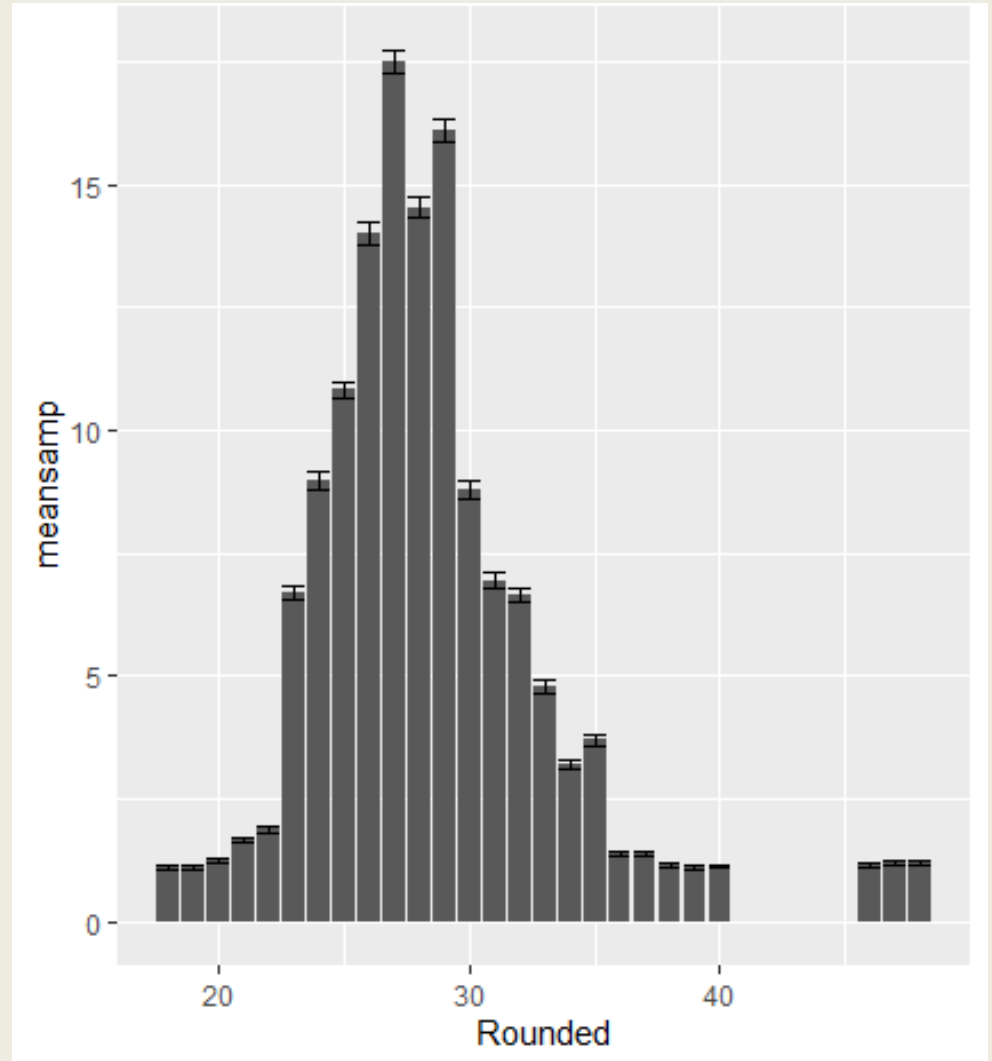






# Length Distribution from Historical Photos

- Resampling method based on photograph
- Combine lengths from each photograph
- Error bars derived from resampling



# Keep Up with Projects & the Program!

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