Citizen Science Program Update

Socio-Economic Panel
April 2023

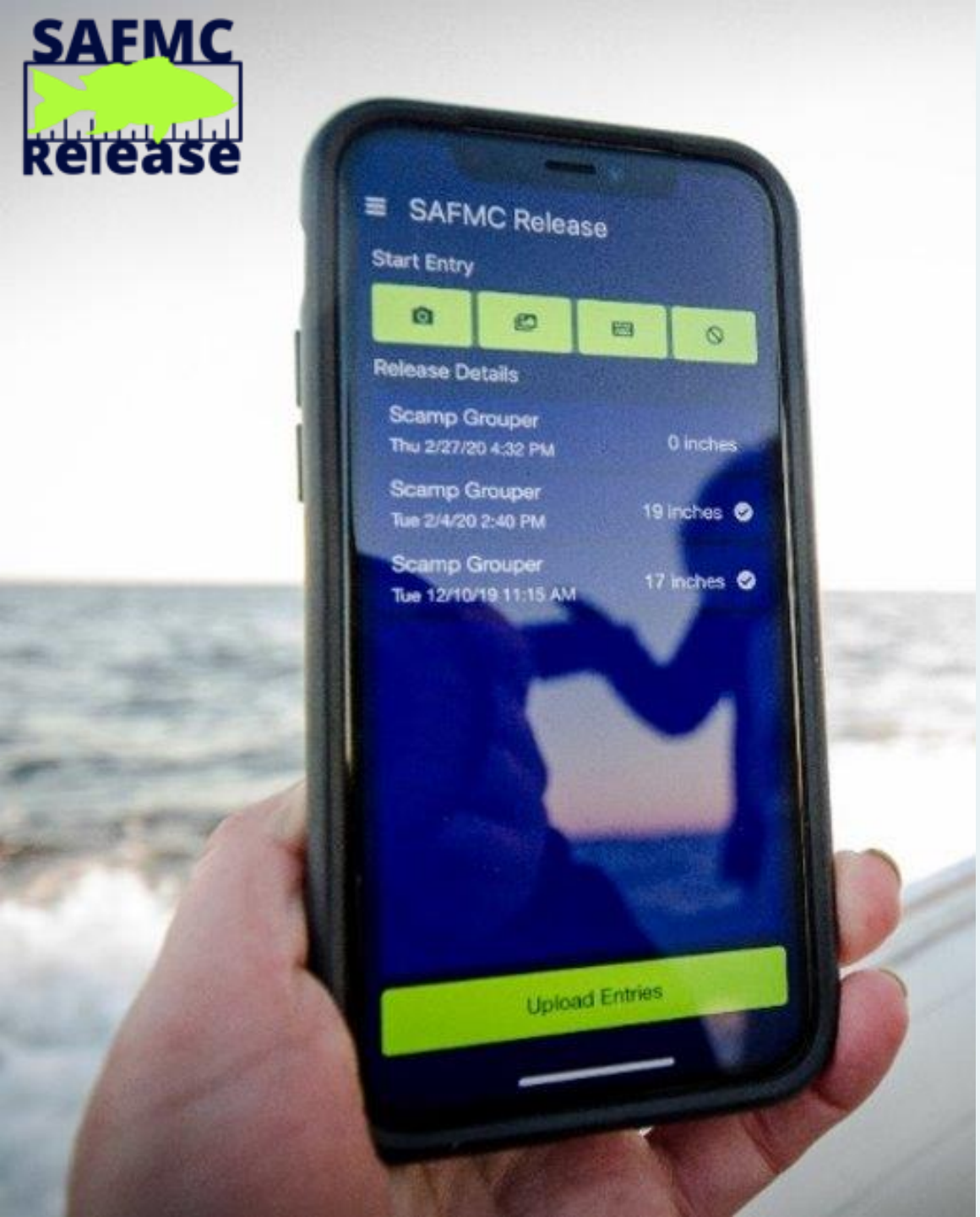
Program Activities

- New CitSci Project Coordinator: Meg Withers
- Fisheries Magazine Special Issue on Citizen Science: November 2022
- NOAA Library Seminar Presentation
- Project Updates: SMILE & SAFMC Release
- FISHstory Pilot Findings & Next Steps
- Citizen Science Program Evaluation: Interviews & Next Steps

PC: REEF & Daryl Duda

SMILE Pilot Project

- Partners: REEF, SECOORA, UCSD Engineers for Exploration & SAFMC
- Partnering with recreational divers to collect length information on data limited species



SAFMC Release

FLOWCODE
PRIVACY.FLOWCODE.COM

SAFMC

Release

Reel

Record

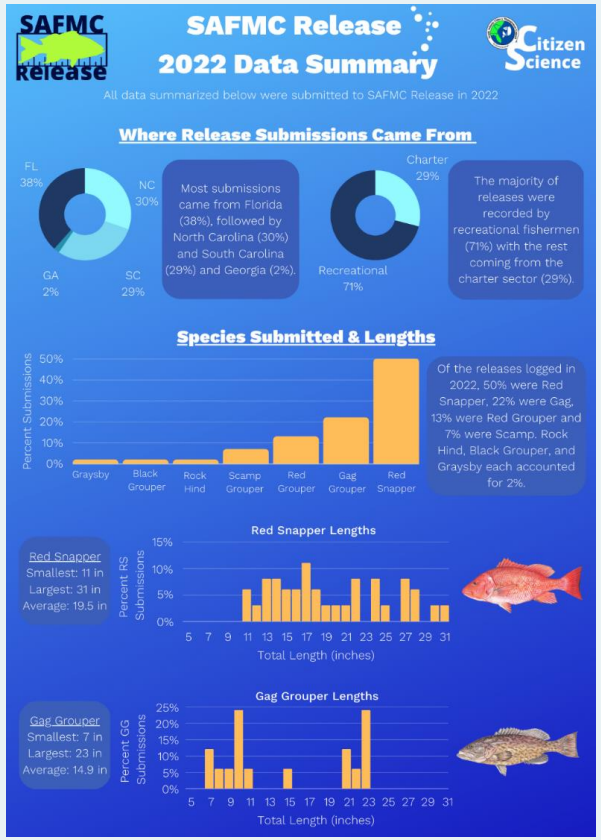
Release

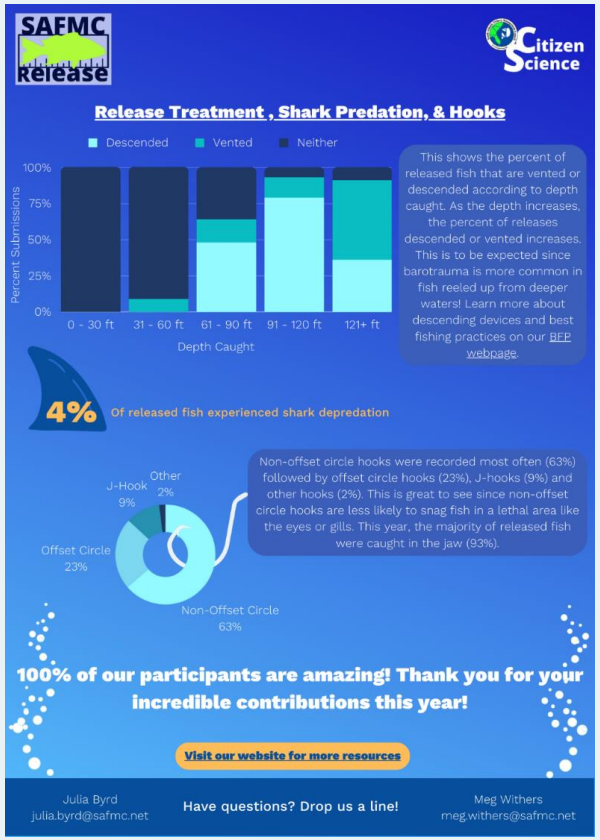
Scamp
June
2019

Shallow Water
Grouper Expansion:
August 2021

Red Snapper
Expansion:
April 2022

2022 Data Summary

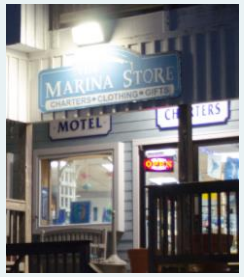




Safmc.net/documents/safmc-release-2022-data-summary-final/

Outreach Strategies

Partnerships

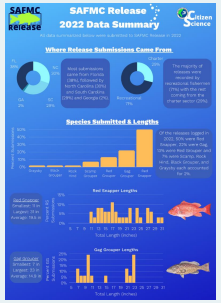


Tackle shop visits

Social media

SAFMC Release newsletter

Seminars & Conferences



Annual Data Summary

SAFMC Release
Participant Recognition Program

- Designed to celebrate participants' achievements within the SAFMC Release project
- Recognition on various platforms, including Release newsletter and social media
- Set 2023 milestones

safmc.net/documents/safmc-release-prp-2023-milestones/

Citizen Science

FISHstory

FISHstory
A SAFMC CitSci Project

FISHstory Project Components

	Digitize & archive historic photos	Over 1,374 photos digitized & archived
	For-hire catch composition in Zooniverse	Over 2,120 volunteers made 35,740 classifications Validation Team reviewed 180 photos
	Method to estimate length	All 1,374 photos reviewed for King Mackerel

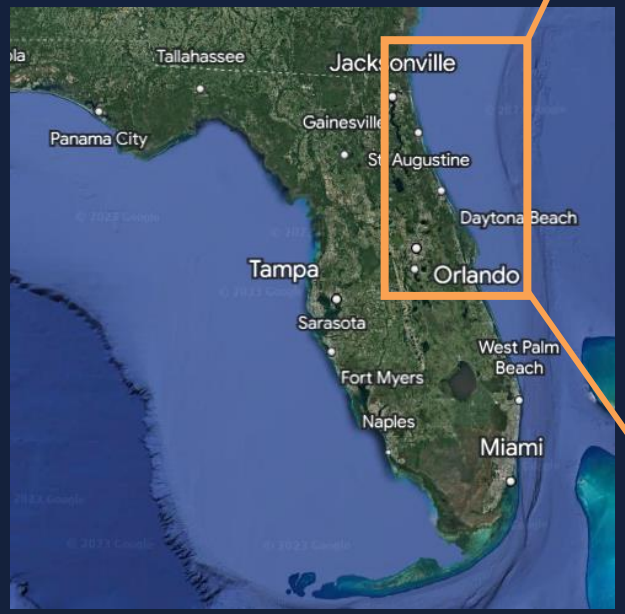
Historical Photo Overview

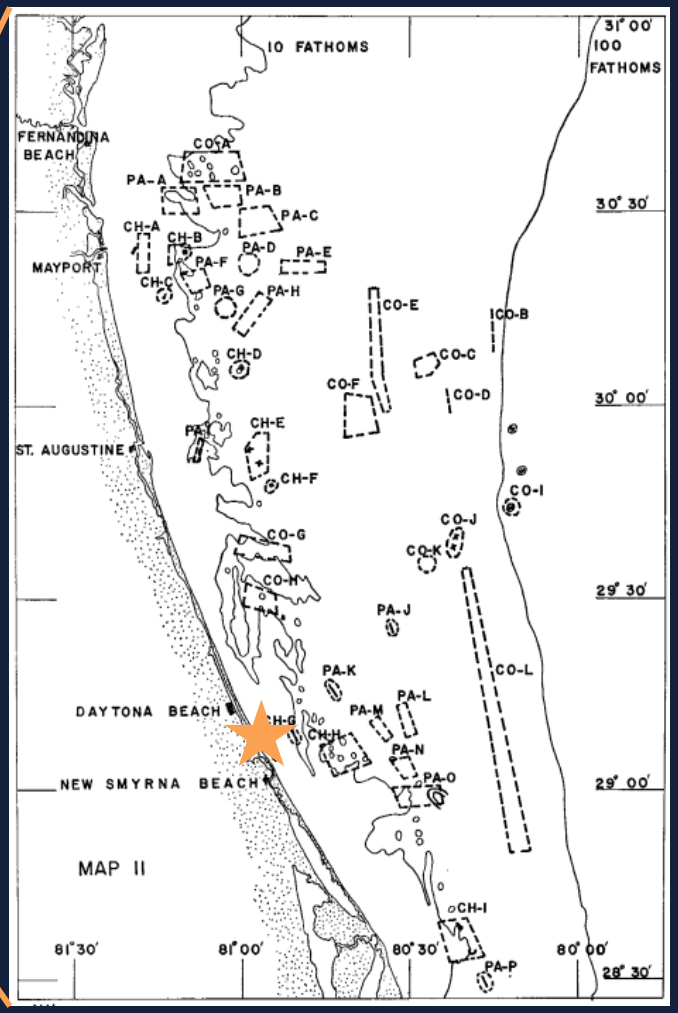
Photo Location:

Daytona Beach, FL

Photos from fishing trips departing from:

Inlet Harbor & Timmons Fish Camp

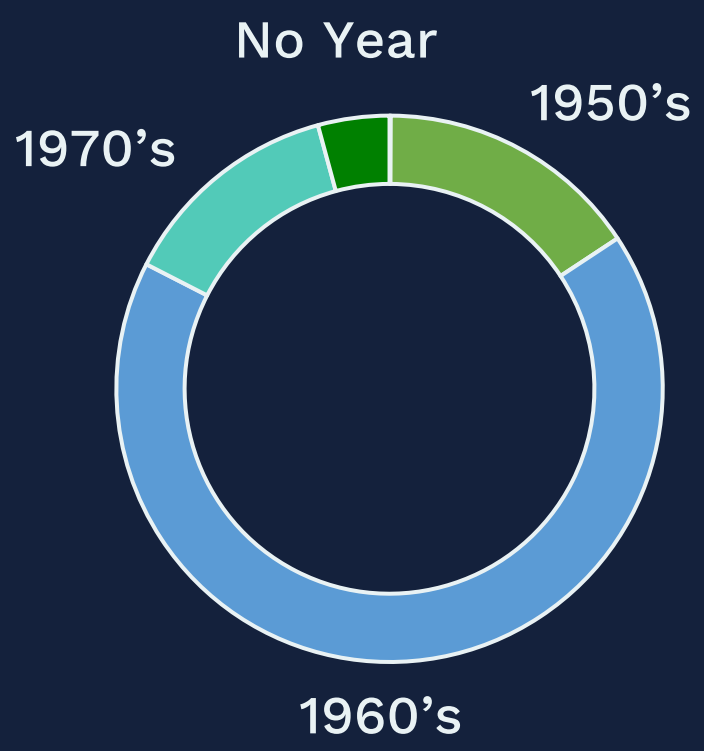




Moe, M. A. (1963). A Survey of Offshore Fishing in Florida (Rep. No. Four).

Historical Photo Overview

Percentage of photos by decade
Photo range: 1949 - 1975



Percentage of photos by month

Historical Photo Overview

88% of photos from 5 vessels

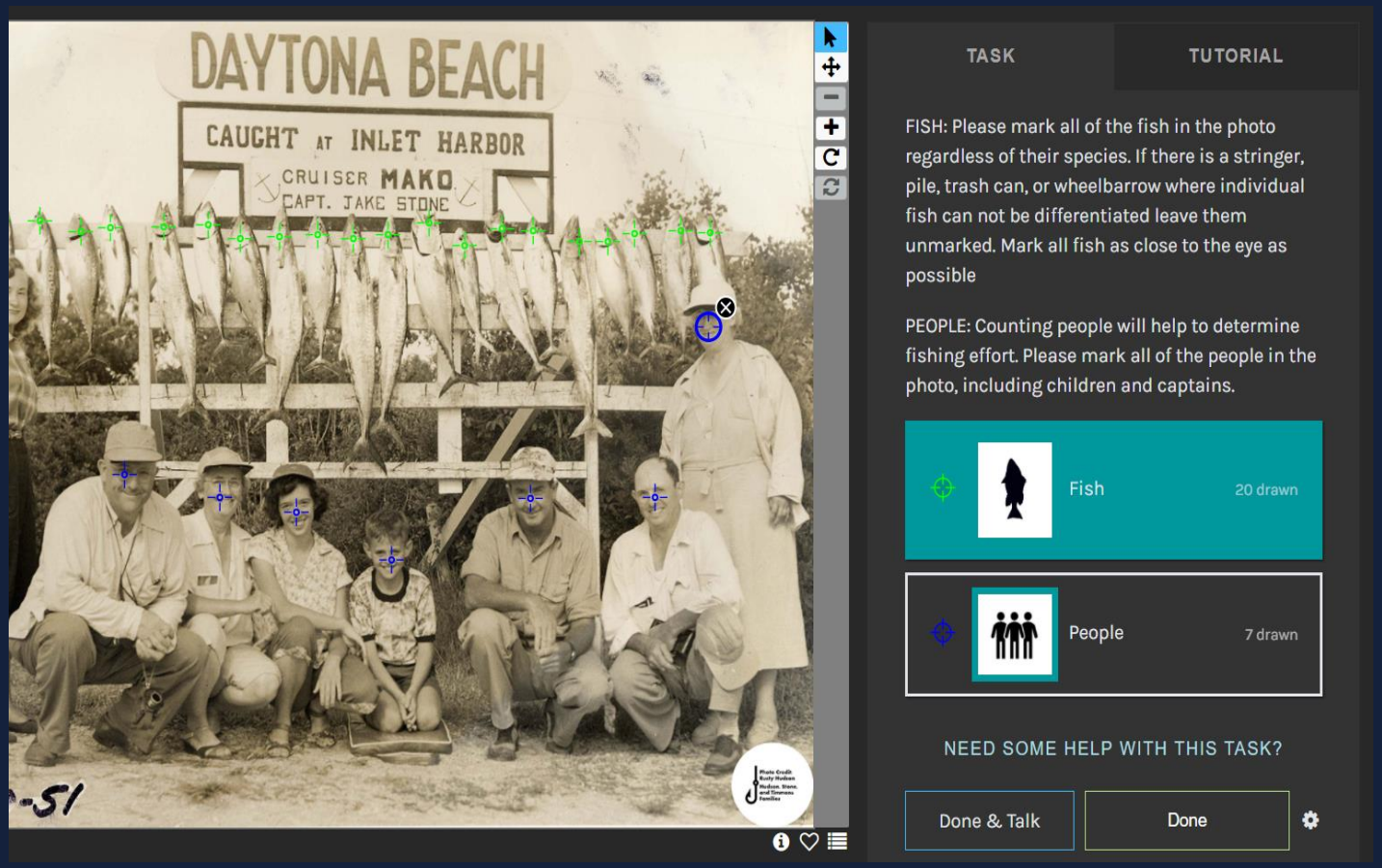
CAUGHT AT TIMMONS CL 3-5825
FISHING CAMP
DAYTONA BEACH, FLA.

CAUGHT AT
FISHERMAN'S PARADISE
DAYTONA BEACH FLA. CALL 767-7676
7 27 74

Zooniverse Workflows

FISH & PEOPLE: Count

- Count the total number of fish and people in the photos
- 10 volunteers per photo
- No Validation Team Review
- 1,374 photos complete



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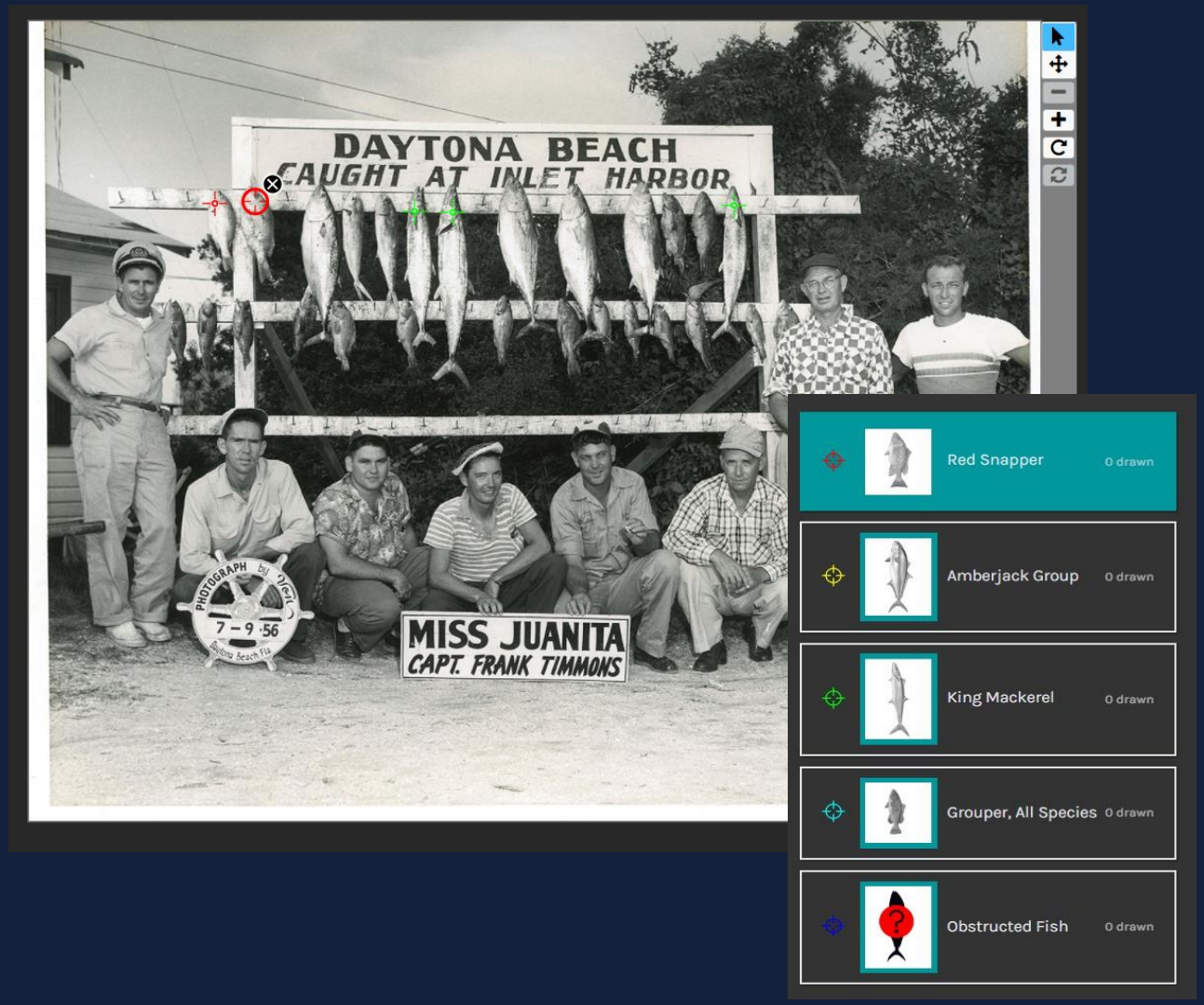
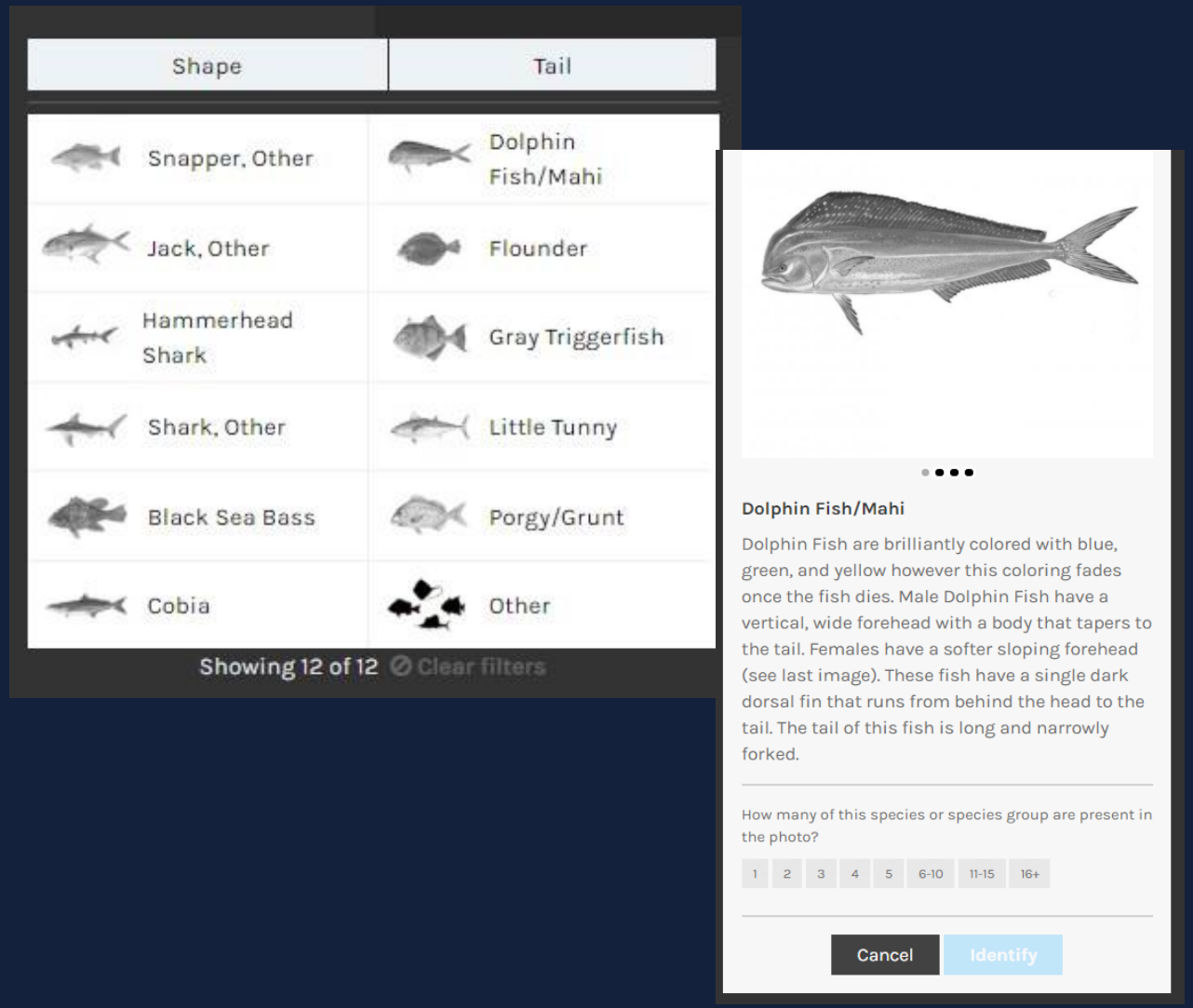


FISH: Classify

- Identify fish into 16 species or species groups
- Document obstructed fish
- Tiered data collection via two tasks
- 20 volunteers per photo
- Validation Team review when substantial disagreement
- 1,000 photos complete

Zooniverse Workflows



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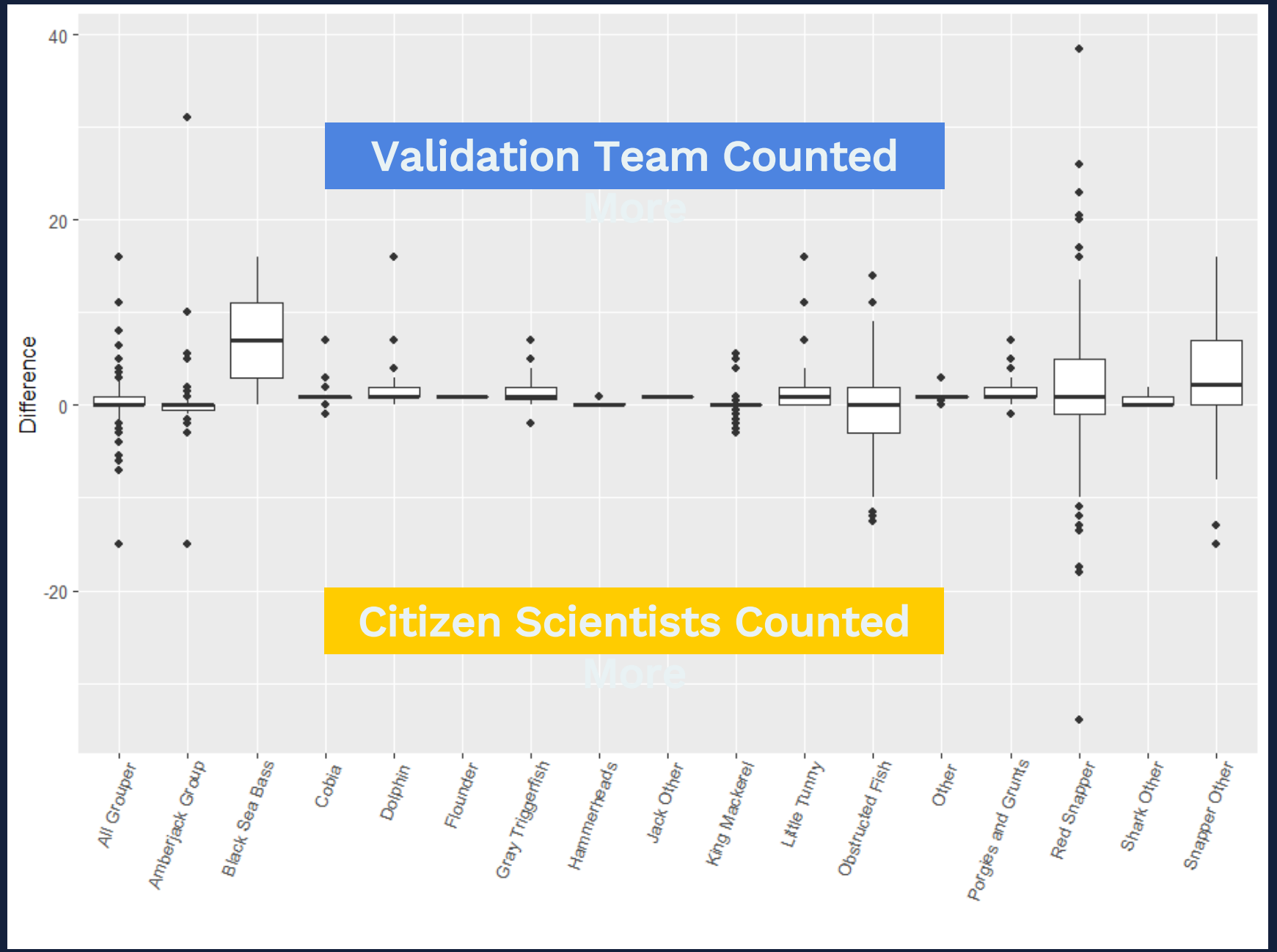
Comparison of Validation Team & Citizen Scientists



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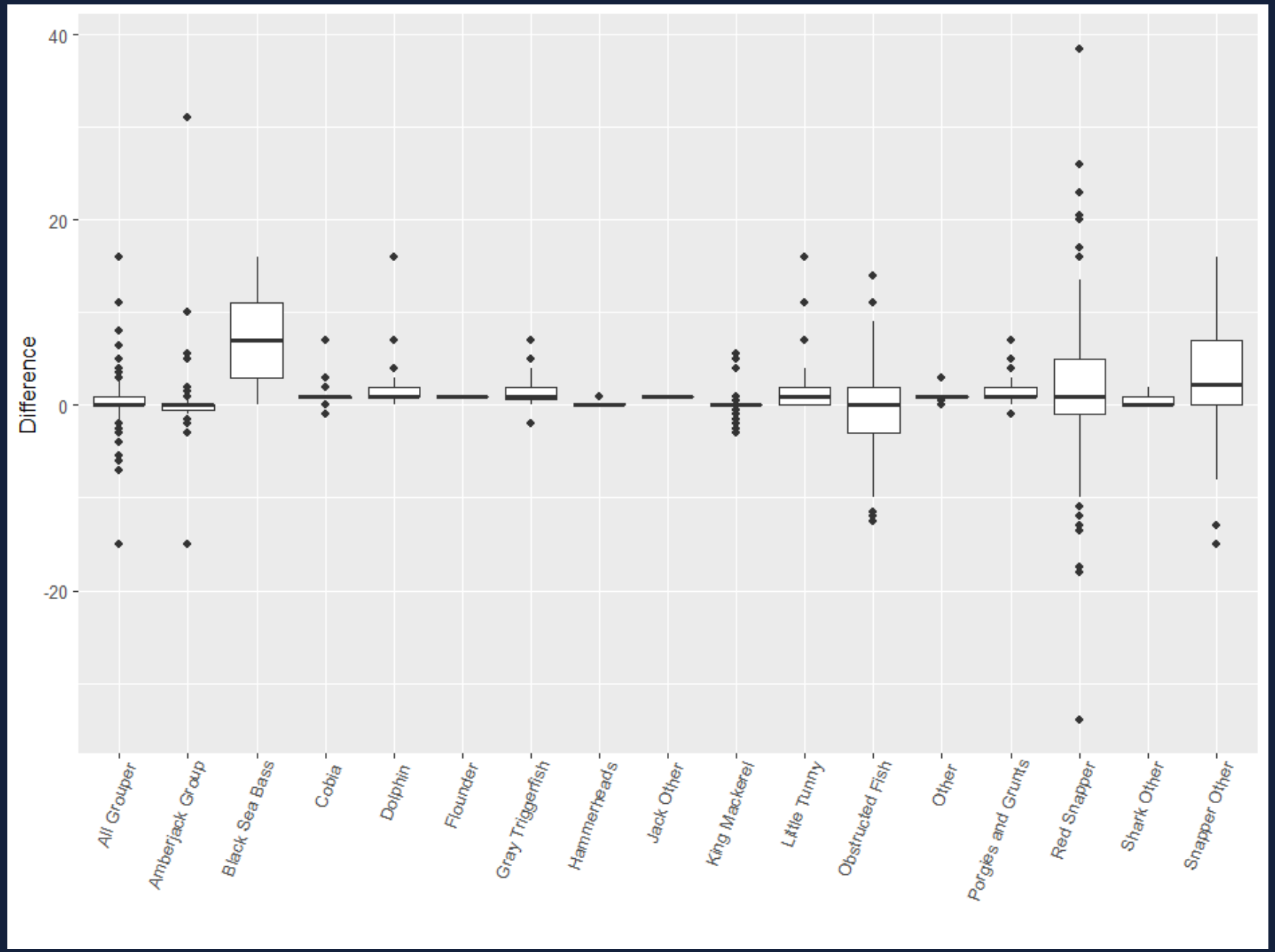

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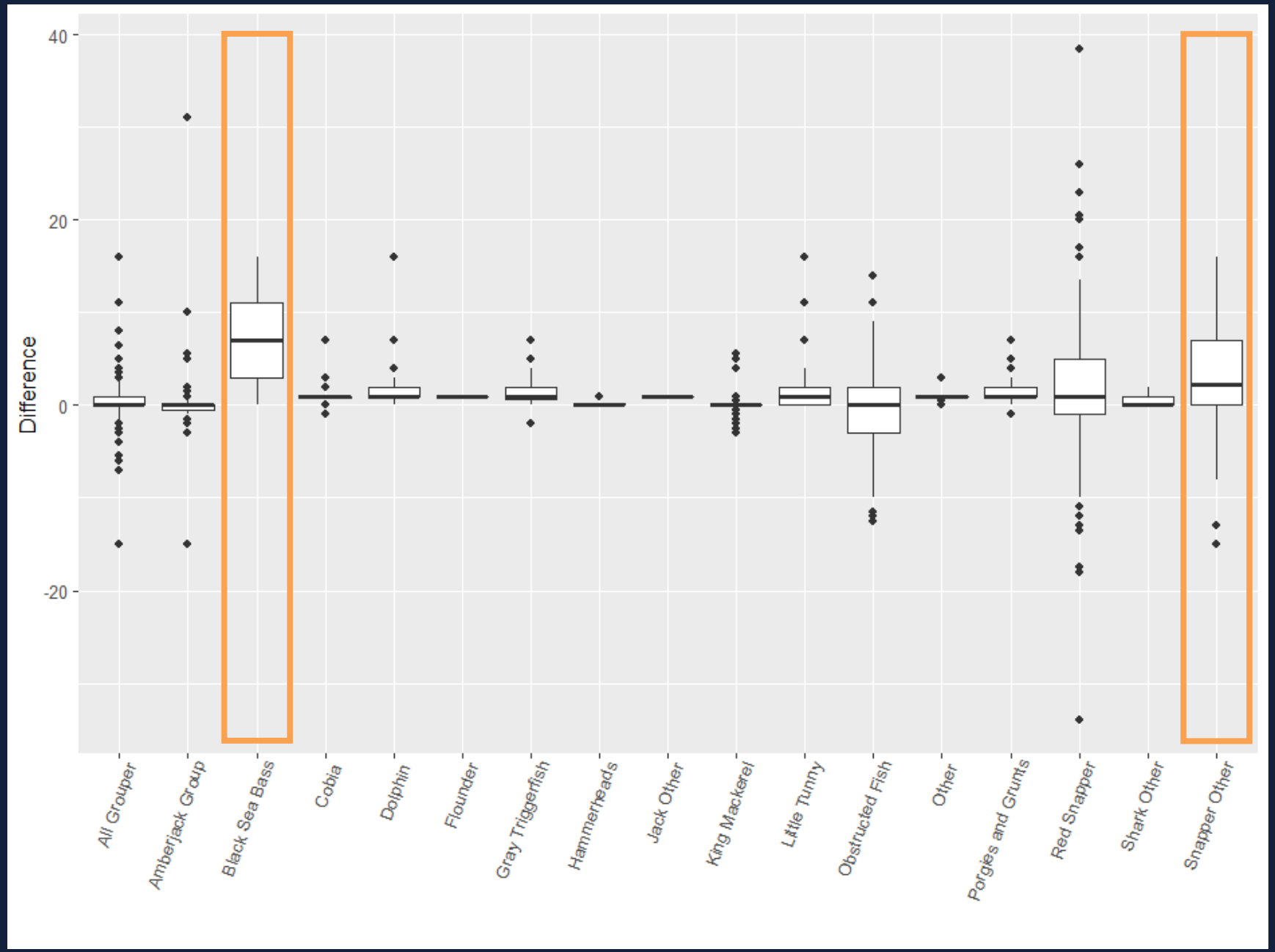

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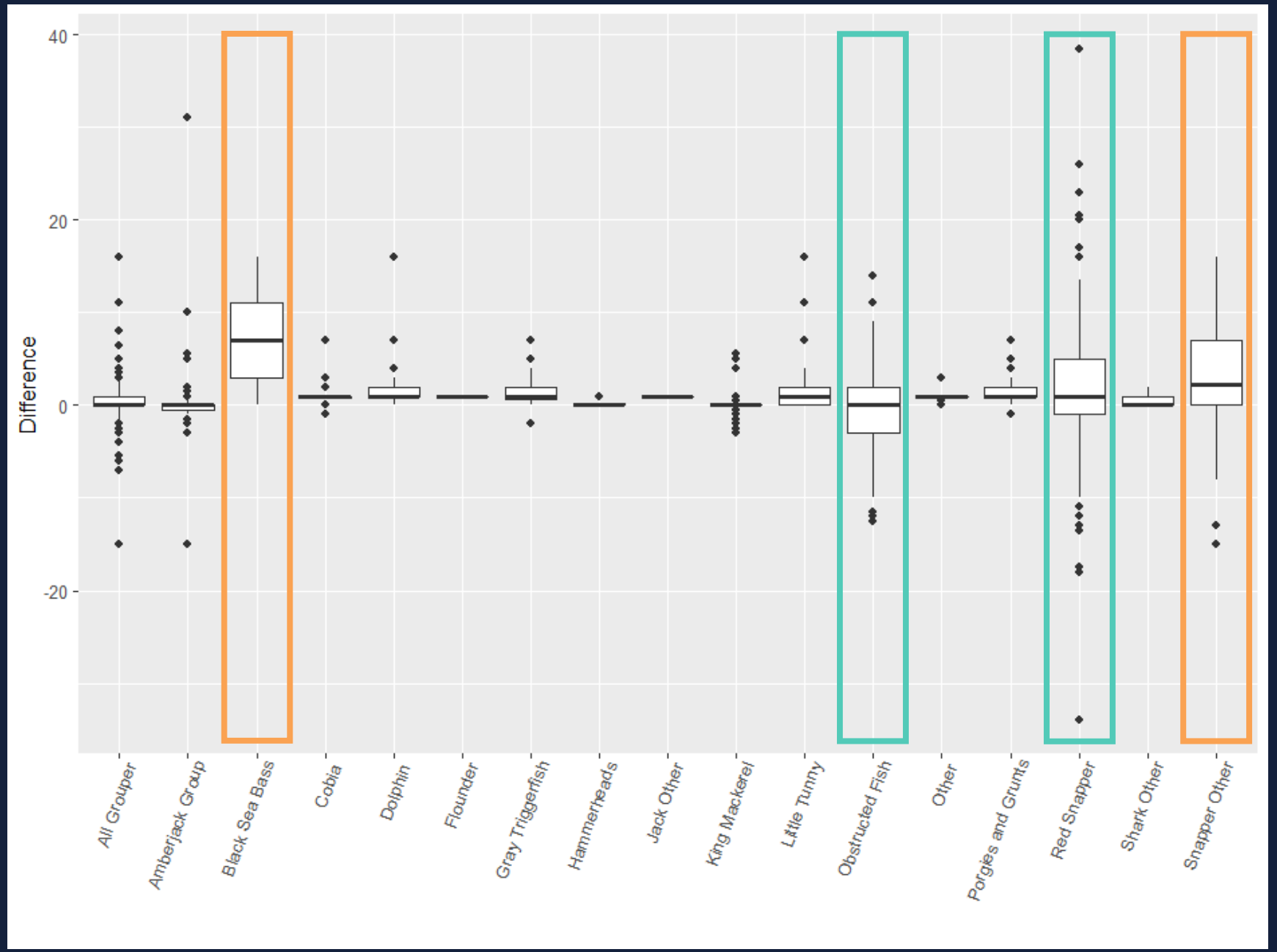

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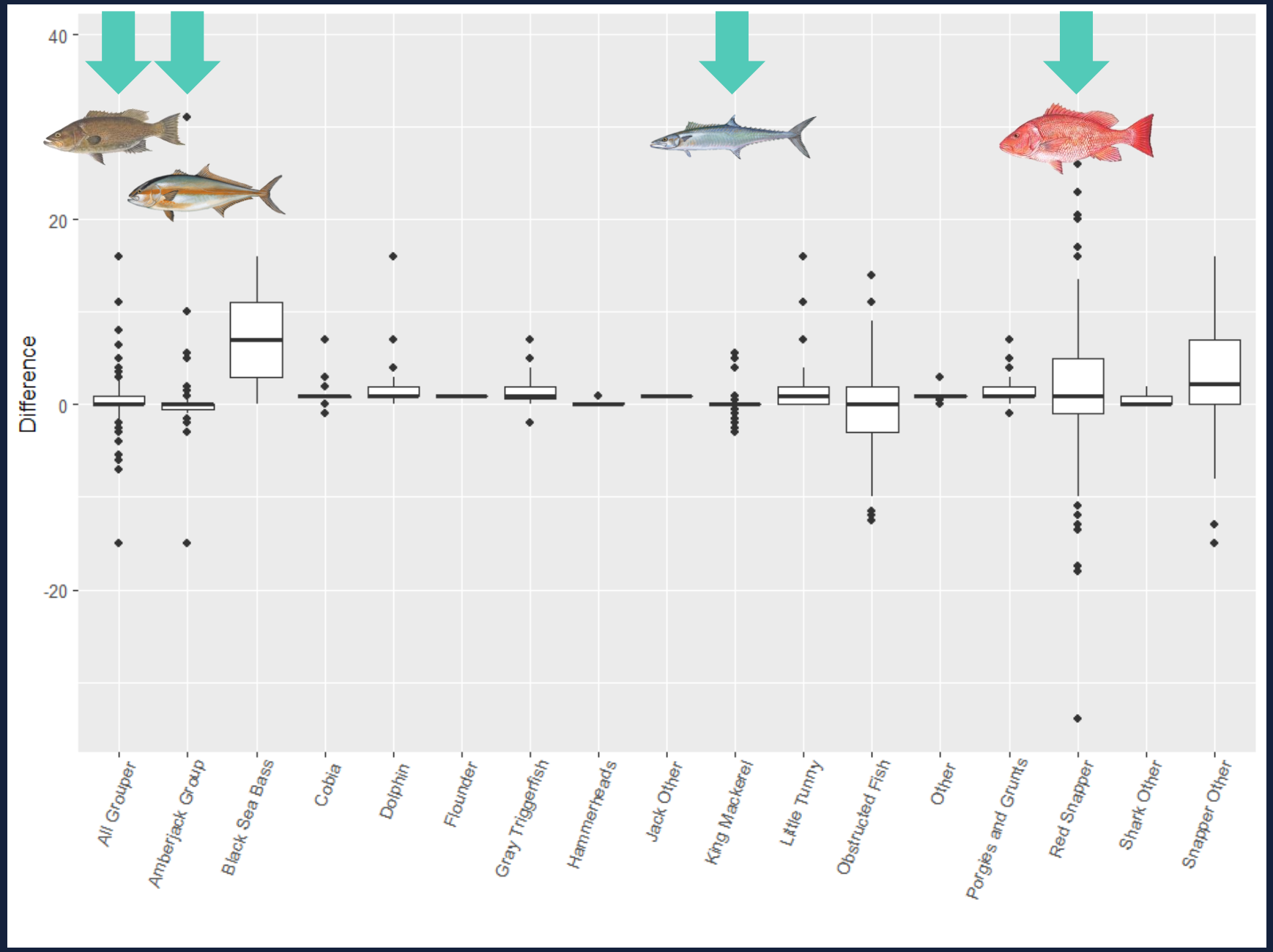


FISHstory: Length Component

- Method developed to measure fish length

Identify scalar & develop protocol

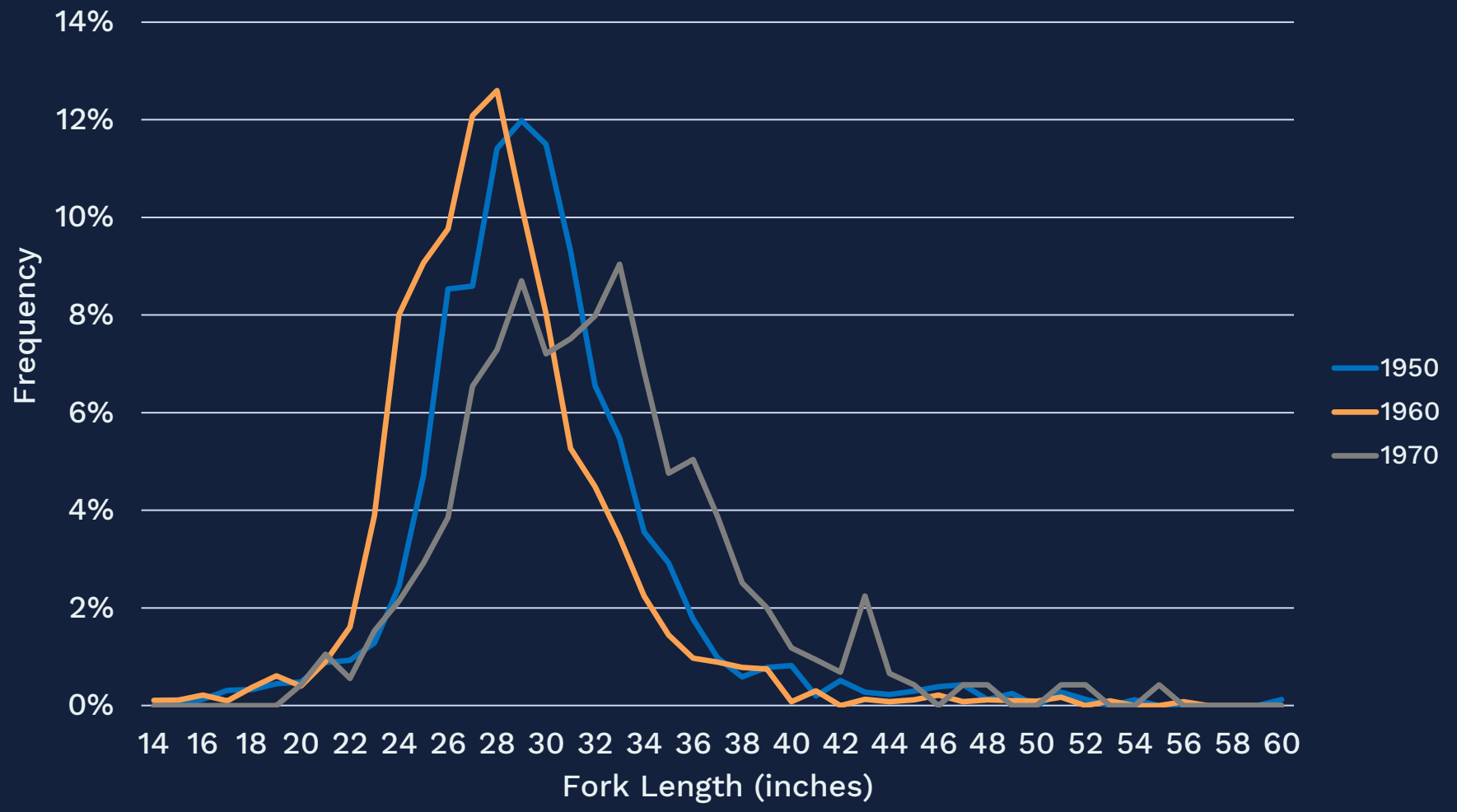
Test protocol

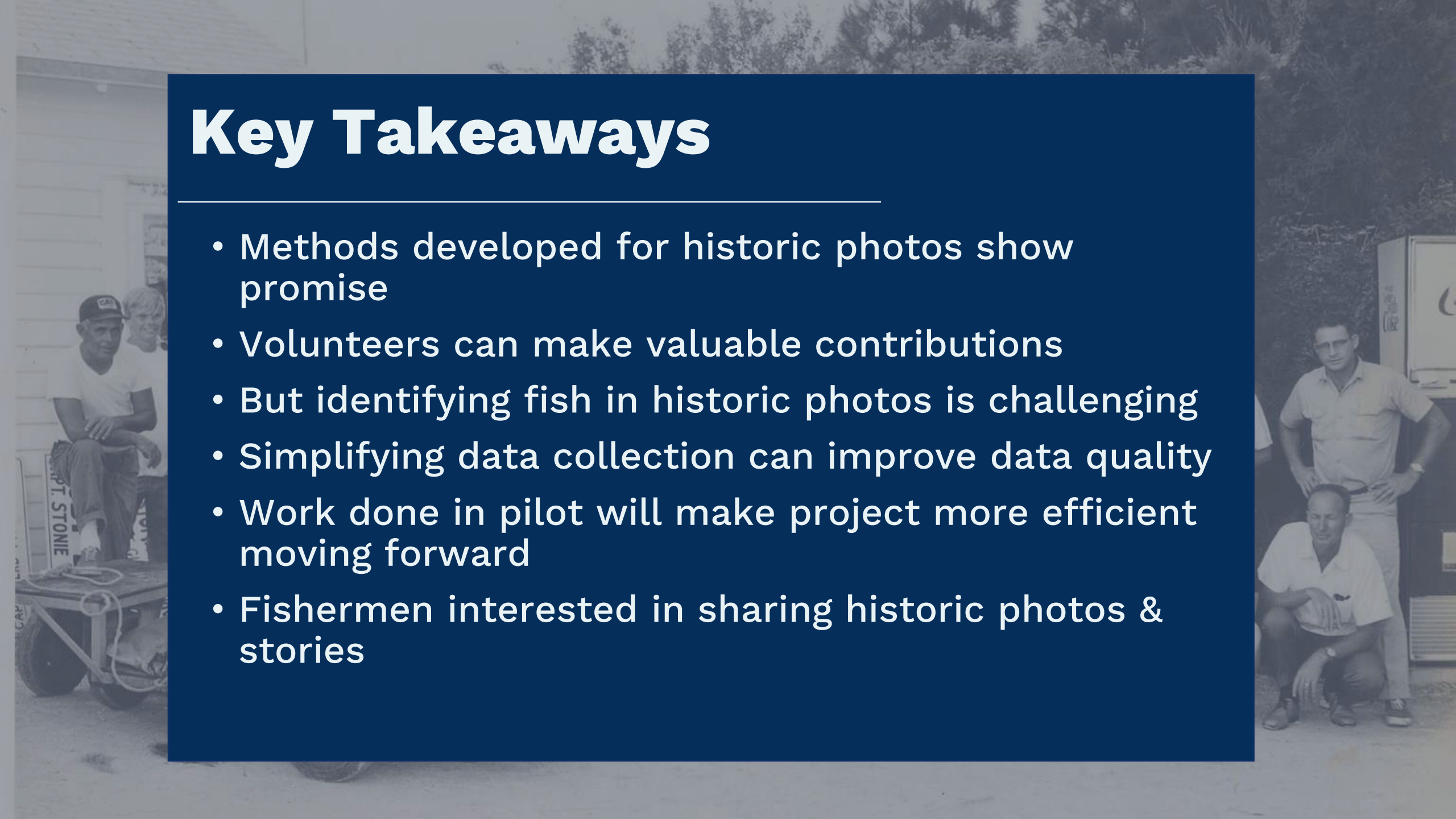
Train length analysts

Coordinate & measure King Mackerel

Share Results

King Mackerel length compositions by decade





Key Takeaways

- Methods developed for historic photos show promise
- Volunteers can make valuable contributions
- But identifying fish in historic photos is challenging
- Simplifying data collection can improve data quality
- Work done in pilot will make project more efficient moving forward
- Fishermen interested in sharing historic photos & stories

Next Steps

- Move from pilot to full scale project

Funding to grow project

Expand geographic & temporal range of photos

Improve efficiency of processes

Estimate length compositions for more species

Initial Program Evaluation Plan

- Gather baseline data on knowledge, attitudes, collaborations, engagement, and trust levels of various stakeholders in three stages:

Interviews → Complete: 6 fishermen, 6 scientists, 6 managers

Gather information from broader group

Implement & analyze results

Interviewees

- **The 18 Interviews were conducted by Zoom** and took from 30 to 45 minutes each. An initial draft of the findings was sent to all interviewees in mid-May 2022.

- **All interviewees were highly experienced**, and nearly all were familiar with the SAFMC, the stock assessment process, and how data are used to inform management decisions.

- Most of the fishermen have been fishing essentially all of their lives. **Three are commercial fishermen, two are charter boat captains, and one is a recreational fisherman.**

Interview Key Findings

- **Opinions on the health of the South Atlantic US fishery varied:**
  - *Most scientists* felt that many species are declining and in poor health.
  - *Managers* tended to feel that fish stocks are doing better than scientists feel they are, especially for the most actively managed species.
  - *Fishermen* were the most pessimistic about the health of the fishery, with all but one stating that it's getting very hard to catch fish. Fishermen used terms like "depleted resources" and "depressing." One said that when he talks to fishermen his own age, he ends up crying.

Interview Key Findings

- **Regarding the sufficiency of data available to support fisheries management:**
  - *Scientists* tended to feel that sufficient data are available, especially for species that receive stock assessments. Only one scientist strongly felt that more data are needed.
  - *Managers* were unequivocal that more data are needed. Only one manager said that sufficient data are available, and only for some species.
  - *Fishermen* mostly felt that more data are needed. Four said that more data are needed; one stated that scientists rely too much on modeling, and another said that scientists and managers need to obtain more data from fishermen, as they are the experts on the water.

Interview Key Findings

- **Considering familiarity with citizen science:**
  - *Scientists* were generally familiar, but not particularly engaged. Four had not engaged with citizen science projects or data.
  - *Managers* were more involved than scientists; three have participated in at least one program.
  - *Fishermen* were the most engaged, largely with SAFMC projects, with five having participated in some way.

Interview Key Findings

- **Familiarity with the SAFMC Citizen Science Program:**
  - *All scientists* were at least passingly familiar. Three knew about its goals and objectives and two had advised on current projects. None of them were familiar with the list of research priorities.
  - *Most managers* did not know specifics about the program, and none were familiar with the list of research priorities.
  - *Most fishermen* were familiar with some of the specifics, with some having gathered data. One was familiar with the list of research priorities but called it “a bit broad.”

Interview Key Findings

- **Support and faith in citizen science:**
  - *All scientists* were generally supportive, but stressed the need for sound project design, and offered many caveats.
  - *Managers* were very supportive; four stated that fishermen would be able to collect a great deal of useful data.
  - *Fishermen* did not seem optimistic about the utility or uptake of citizen science. Many of them felt that scientists and managers would not use or trust the data. Two felt that fishermen mostly won't participate.

Interview Conclusions

- *Scientists* need to be convinced that projects have sound design and that their data are truly needed.
- *Managers* need to be convinced that scientists will use the data.
- *Fishermen* need to be convinced that scientists and managers will use the data.
- *The fisherman audience* needs to be studied in much more detail.
- Fishermen are three audiences. More interviews with members of each audience would be helpful.
- Research into needs/desires/motivations of fishermen & how best to reach fishermen are critical, which will require funding.

Initial Program Evaluation Plan

- Gather baseline data on knowledge, attitudes, collaborations, engagement, and trust levels of various stakeholders in three stages:

Interviews	→	Complete: 6 fishermen, 6 scientists, 6 managers
Gather information from broader group	→	Online survey – scientists & managers More interviews - fishermen
Implement & analyze results		

Keep Up with Projects & the Program!

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

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