



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

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Citizen Science Program Manager
South Atlantic Fishery Management Council

May 2019
Habitat Advisory Panel Meeting
Charleston, SC



Why Citizen Science?

SAFMC interested in pursuing as a tool to help address long standing data needs

Many 'eyes' – 3.5 million anglers, 40+ million trips in South Atlantic

Fishermen have offered to help collect data & want to be involved

More involvement may improve success



Program Initiation

Jan-Mar 2016

- Cit Sci Workshop & Blueprint

Feb-Jul 2016

- Promotion/feedback on efforts

Sept 2016

- Council Cit Sci Committee formed

Dec 2016

- Council supports FTE position

Jan 2017

- Program Manager starts



SAFMC Citizen Science Program

Mission Statement:

“Improve information for fisheries management through collaborative science”

GOAL 1: Design, implement, and sustain a program framework to guide the development of projects that support fishery management decision making.

GOAL 2: Facilitate development of individual projects to address specific research priorities.

GOAL 3: Ensure data collected are accessible, robust, and fit for purpose.

GOAL 4: Build partnerships that foster mutual learning, collaboration, and programmatic support.

GOAL 5: Inspire active engagement through communication about purposes, processes, and impacts.



Program Development: Action Teams

VOLUNTEERS:

*How to work with **volunteers** on citizen science projects*

DATA MANAGEMENT:

*How to effectively **manage citizen science data** and create **data standards and policies***

PROJECT/TOPICS MANAGEMENT:

*How to select **citizen science topics** for the program and ways to develop and **manage citizen science projects** under the program*

COMMUNICATION/OUTREACH/ EDUCATION:

*How to provide **outreach, training, and communication** about the program and projects under the program*

FINANCE & INFRASTRUCTURE:

*How to identify **resources and funding** to support the program and citizen science projects*

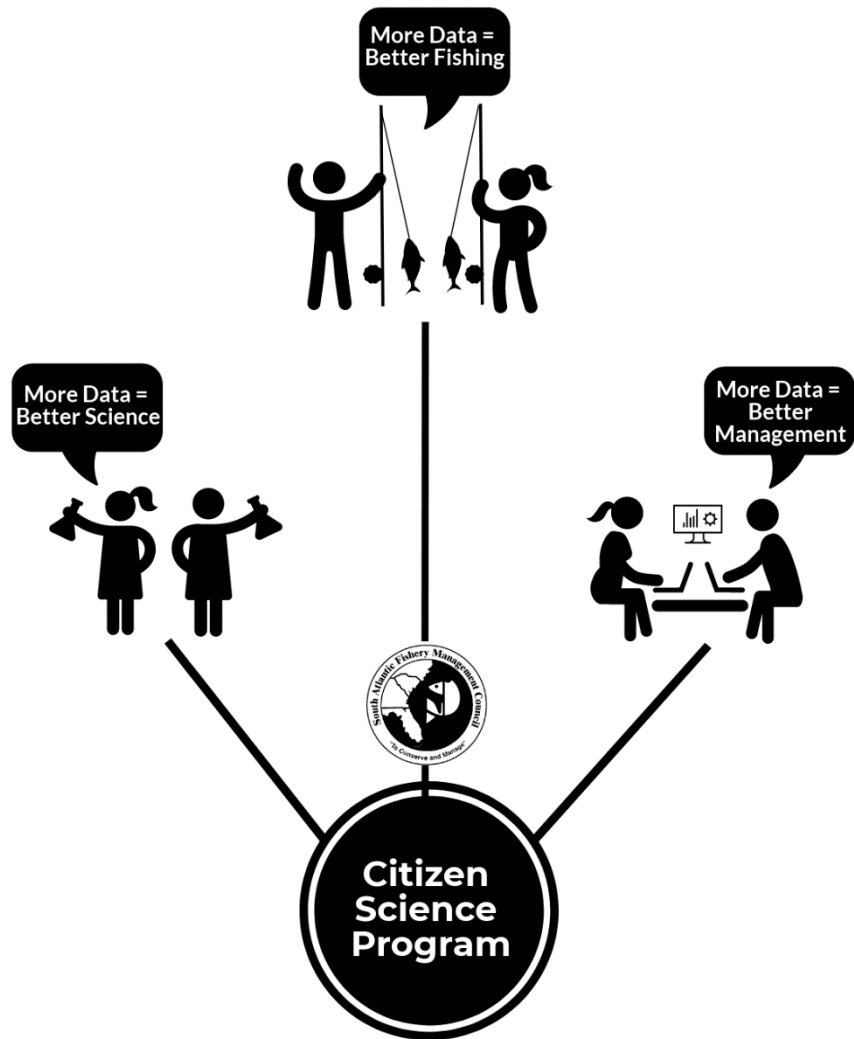


PROGRAM Level - A-Team Products



A-Team:	Templates:	Inventories:	Additional items:
<i>Data Management</i>	<ul style="list-style-type: none"> • Data standards • QA/QC • Data requirements 	<ul style="list-style-type: none"> • Data management resources by agency 	<ul style="list-style-type: none"> • Options for data storage
<i>Volunteers</i>	<ul style="list-style-type: none"> • Basic volunteer orientation • Training by project type 	<ul style="list-style-type: none"> • Sample approaches for training 	<ul style="list-style-type: none"> • Online Volunteer Interest Form – <i>tool to recruit volunteers</i>
<i>Projects/Topics Management</i>	<ul style="list-style-type: none"> • Citizen Science research priorities 	<ul style="list-style-type: none"> • Sources for research needs 	<ul style="list-style-type: none"> • Project Endorsement Program • Project review metrics
<i>Finance & Infrastructure</i>	<ul style="list-style-type: none"> • Sample operational/programmatic budget needs 	<ul style="list-style-type: none"> • Active list of project/program funding opportunities 	<ul style="list-style-type: none"> • Funding models and sources to pursue • Partnerships to pursue
<i>Communication</i>	<ul style="list-style-type: none"> • Project Communication Plan 	<ul style="list-style-type: none"> • Sample outreach/communication approaches 	<ul style="list-style-type: none"> • Samples of approaches for sharing project results

Activities 2018



Program infrastructure

- *Citizen Science Action Teams – program components*

Partnership Development

- *Program and project-level funding opportunities*

Pilot Project

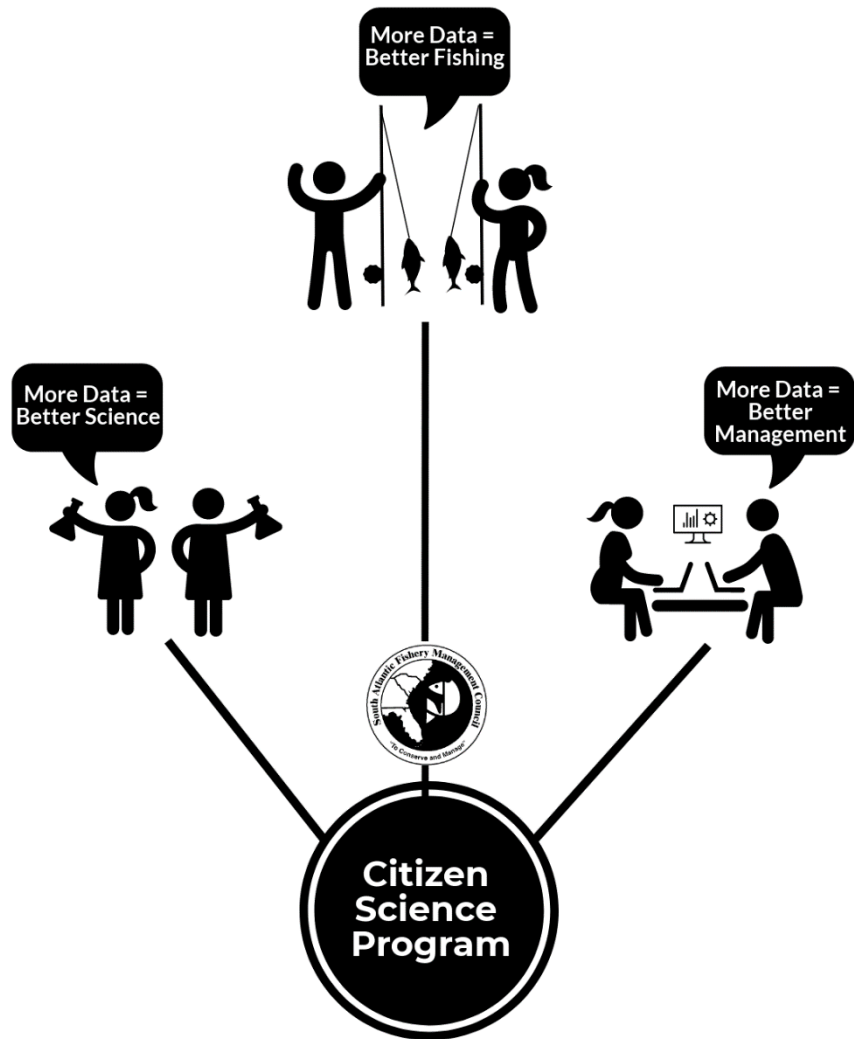
- *Funding secured March 2018*
- *Project to address scamp discards*

Cit Sci Research Priorities Adopted

Operations Committee Meeting

Cit Sci Program SOPPs Adopted

Activities 2019



Program Manager Transition

- *Julia Byrd*

CitSci 2019 Conference

- *SAFMC Team lead Symposium highlighting efforts to develop Program*

Cit Sci Research Priorities Update Projects

- *Pilot project to address scamp discards*
- *FISHstory pilot project to document historic catch and length estimates from historic for-hire photos*
- *Collaborator on TNC project in Gray's Reef National Marine Sanctuary*

Continue Partnership Development

Citizen Science Research Priorities

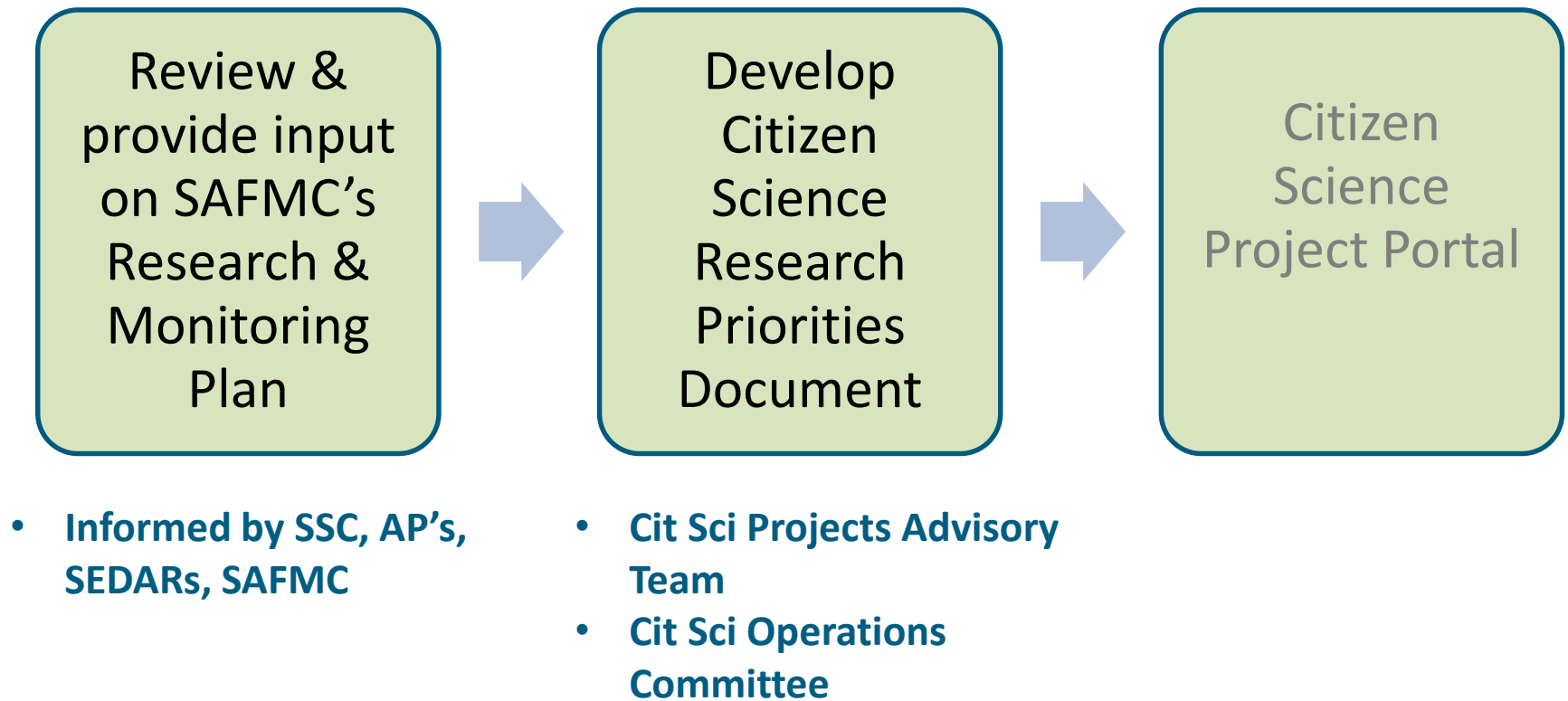
Updated every two
years

Will help guide
projects the
Program pursues

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.
Bottom habitat mapping	Imagery	Improved resolution of habitat
Monitoring in managed areas	Species, length, depth	Changes in fish abundance
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
Oceanographic/ Environmental Conditions	Bottom temperature; weather	Build database on climate and changing conditions
Rare species observations	Point observations	Baseline for species shift



Citizen Science Research Prioritization Process



Cit Sci Projects Advisory Team

Role & Responsibilities

Identify citizen science research & data needs across all FMPs

Assist with developing volunteer engagement strategies

Outreach ambassadors for Program

Membership

1-2 representatives from each SAFMC Advisory Panels

Meet via webinar 1-2 times per year

Need to identify Habitat AP Representatives!






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Cit Sci Pilot Project: *Scamp Release*

Engagement: Work with fishermen and scientists to design a project to collect supplementary data on scamp discards using a mobile app

Data: discard data (length, depth, images)

Use: consideration for use in 2020 stock assessment

A vibrant underwater scene featuring a variety of colorful coral reefs in shades of orange, yellow, pink, and purple. Several fish are visible, including a large grey fish in the upper left and smaller fish swimming in the background. The water is clear and blue.

SAFMC Scamp RELEASE Pilot Project:

Planning & Design Team

PC: Greg McFall, GRNMS

Met to map out initial app design and layout:

- *Fishermen*
- *SE Fisheries Science Center*
- *NC Sea Grant researcher*
- *Harbor Light Software (app developer)*
- *ACCSP (data partner)*
- *Citizen Science Association/ Cornell University (research study partner)*
- *Council staff*

A-Teams developed plans for the project – *Communication, Volunteer Training, Data Management*

Research Study with Cit Sci Association/Cornell University:

- *Dr. Jennifer Shirk – documenting process and how it supports projects*
- *Rick Bonney –developing evaluation metrics for the project*

SAFMC



Release

Catch



Measure



Record



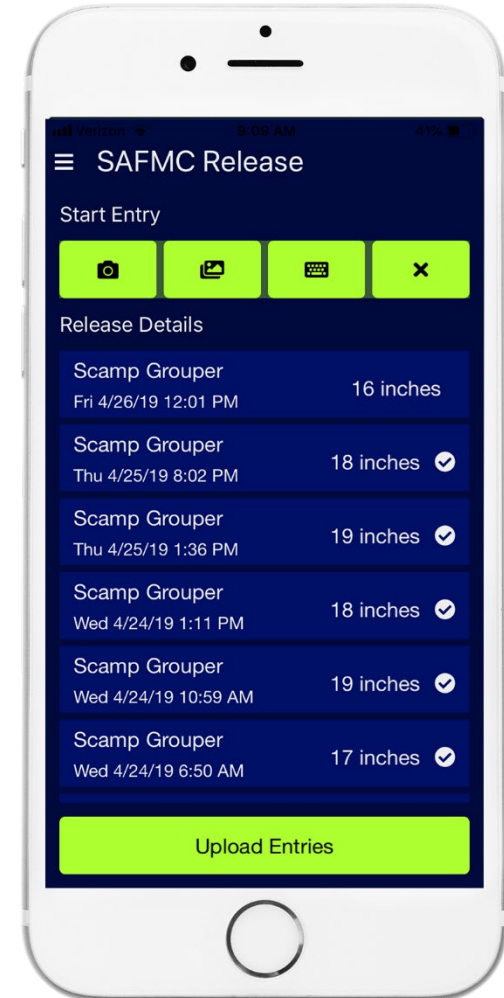
Release



- *Mobile application to collect lengths on scamp grouper discards*

Project Update

- Release Evaluation App Testing Wrapping Up
- Developing training and outreach materials
- Target to have production app ready by late spring
- Recruiting fishermen from all sectors to participate in project



Project FISHstory

Photo credit: Rusty Hudson



Documenting historic catch and length estimates from historical photos in the for-hire sector using electronic data collection and imagery analysis platforms and crowdsourcing approaches.



Photo credit: Rusty Hudson

PROJECT OBJECTIVES/METHODS:

- Fill in historical data gap – headboat photos from 1940s-70s; prior to fishery dependent surveys
- Species composition analysis
- Crowdsourcing
- Expert validation team
- Length analysis of one key species

ZOONIVERSE

Crowdsourcing Platform

- Build project online
- Develop tutorials/training
- Citizen Scientists analyze images
- Validation
- I.D. key species for length analysis

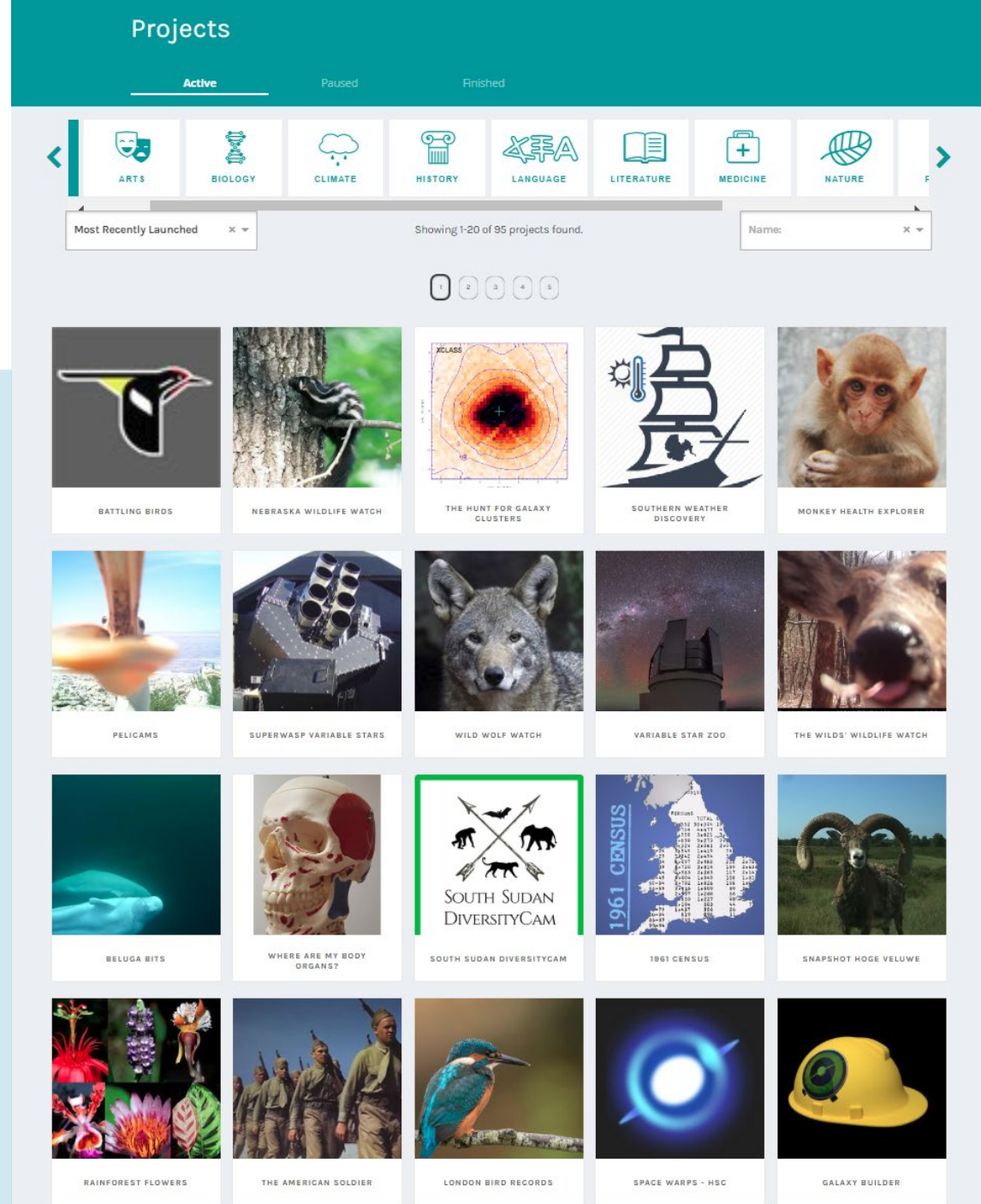
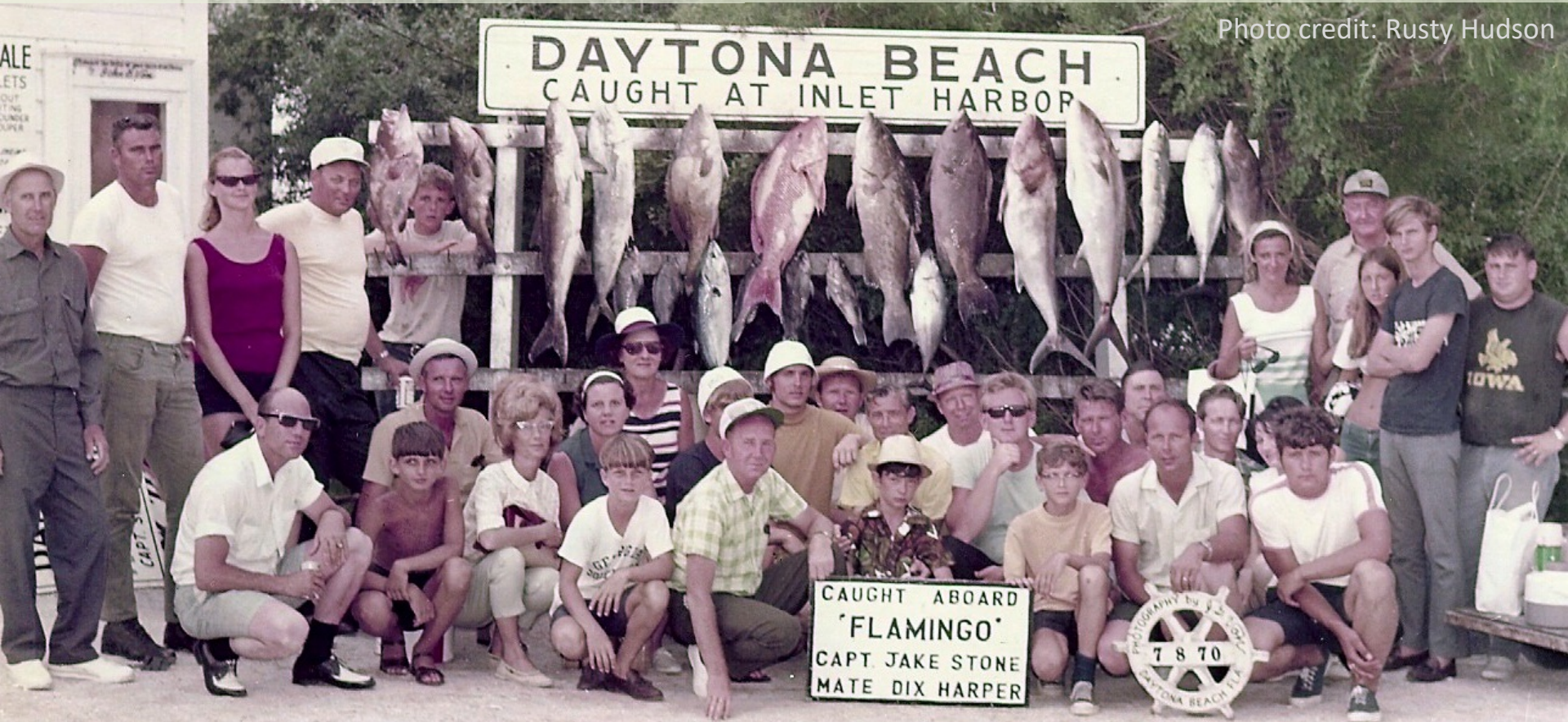


IMAGE 'J'

- Open source image processing program

Methods:

- Establish standards
- Measure lengths



Keep Up with Projects & the Program!

Julia Byrd

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

PC: Don DeMaria