

# DRAFT

## International Marine Conservation Congress (IMCC)

### *Focus Group Summary – July 31, 2016*

#### Recommendations for Programmatic Components of the South Atlantic Fishery Management Council Citizen Science Program

##### **IMCC - Overview:**

Members of the SAFMC Citizen Science Organizing Committee attended the International Marine Conservation Congress July 30-August 4, 2016. The Congress is a meeting of the Marine section of the Society for Conservation Biology with a focus on marine conservation issues. Members of the SAFMC Citizen Science organizing committee that attended the Congress included Amber Von Harten (Council staff), Julia Byrd (Council staff), Ben Hartig (Council member), Leda Dunmire (The Pew Charitable Trusts) and Jennifer Shirk (Cornell Lab of Ornithology).

Von Harten and Dunmire were presenters and served on a discussion panel as part of a symposium entitled, *“Creating actionable science: Connecting science and practice through researcher-manager partnerships”*. Their presentation focused on the role of developing partnerships and key program development components as part of the Council’s effort to create a citizen science program.

Following the symposium, the Council’s team hosted a focus group entitled, *“Building a fishery citizen science program in the U.S. South Atlantic to improve management and policy”*, to solicit input on the Council’s Citizen Science initiative and items in the Citizen Science Program Blueprint.

##### **Focus Group - Overview:**

The goal of the focus group was to develop recommendations for each of the four programmatic components proposed in the SAFMC Citizen Science Program Blueprint. Recommendations on the four components will be used to inform the objectives that will be developed under the core program goals outlined in the SAFMC Citizen Science Program Blueprint.

The four programmatic components that were discussed include,

- Volunteers,
- Data Management,
- Project Management, and
- Finance & Sustainability.

The organizing committee targeted focus group invitations towards conference attendees that were known citizen science practitioners and others with experience designing and/or managing citizen science projects. A total of 27 participants contributed to the focus group. Participants were presented information about the Council’s citizen science program development efforts and then provided an overview of the issues surrounding each of the four components. The focus group used facilitated, small group exercises with plenary, round-robin discussions to gather input on each of the four components. A preliminary summary of the recommendations is provided below.

Recommendations were categorized into major themes that include Building Trust; Project Design (General, QA/QC, Communication, Evaluation, Technology); Participation; Participant Management; Data Management; and Incentives. Some recommendations were captured by more than one theme.

## VOLUNTEERS

**Issue:** The Council has strong experience working with fishermen in the management process from a policy perspective. A citizen science program would engage fishermen from a scientific perspective. Fishermen have concerns about the limitations of the data collected in our region and have expressed interest in collecting data. However, the data they collect will be used to regulate and manage their harvesting activities.

### Recommendations:

Theme(s)	Recommendation:
Project Design – General Building Trust	<ul style="list-style-type: none"> <li>• Need to discuss up front data ownership and authorship.</li> </ul>
Project Design - General	<ul style="list-style-type: none"> <li>• Work backward from outcomes back to the goals for efficient implementation (logic model).</li> </ul>
Project Design – QA/QC	<ul style="list-style-type: none"> <li>• Be aware of abundance/quality trade-offs – assess the needs of the project and whether it’s best to have a large number of volunteers reporting smaller amount of data vs. a smaller number of volunteer reporting larger amounts of data (level of commitment over the duration of the project); from a data management perspective, if you have outliers in the data, it is more difficult to see in a project that has fewer data points vs. a project that has many data points.</li> <li>• Double blind validation by and within the fishing community before submitting data to science.</li> </ul>
Project Design – Communication	<ul style="list-style-type: none"> <li>• Observational data are acceptable (eg., video review for species presences/absence or identification).</li> </ul>
Building Trust	<ul style="list-style-type: none"> <li>• Bring volunteers in early – build trust by co-developing goals and outcomes.</li> <li>• Understand fishermen’s concerns about data.</li> </ul>
Building Trust Participation	<ul style="list-style-type: none"> <li>• Success is measured by when people no longer feel like volunteers!</li> <li>• Incorporate local ecological knowledge – conduct a baseline survey with fishermen on their observations and historical knowledge of the fishery; have the fishermen review the survey/data and then they help publish the data.</li> <li>• Train and test volunteers (project protocols to help with data reliability).</li> <li>• Consider participant placement in projects to avoid conflicts between participating fishermen.</li> <li>• Involve fishermen as full research participants (example is participatory statistics – who and how people are participating in projects).</li> </ul>
Participation Incentives	<ul style="list-style-type: none"> <li>• How to overcome participation in citizen science projects by those fishermen that are not used to being involved/monitored; Use storytelling and making it something fun. (Focus group to understand why?)</li> </ul>
Incentives	<ul style="list-style-type: none"> <li>• Use incentives with caution and consider incentivizing all participants, not just those that collect data but also those that may be validating the data.</li> <li>• Use gamification for incentives – “virtual rewards” for contributions and accomplishments.</li> </ul>

## PROJECT MANAGEMENT

**Issue:** There is a history of cooperative research projects in the South Atlantic involving fishermen and scientists to collect information needed for management. However, the data from some projects have not been able to be applied to management because of the way the project was designed and/or conducted. There is a need to ensure that projects are set up to meet scientific standards so that data can be used in management while also allowing an open exchange of ideas between fishermen and scientists.

### Recommendations:

Theme(s)	Recommendation:
Building Trust	<ul style="list-style-type: none"> <li>• Include boundary spanning organizations/neutral facilitators (especially in cases where there is mistrust) – bridging government agencies, fishermen, and scientists.</li> </ul>
Building Trust Communication	<ul style="list-style-type: none"> <li>• Educate managers about citizen science – this will help with the perception issues surrounding the data and that citizen science is in fact science</li> </ul>
Building Trust Project Design - General	<ul style="list-style-type: none"> <li>• Scientists and fishermen work in lock-step from the start to finish – from goal setting, idea, project design, sampling, analysis, disseminating results to application in management.</li> <li>• Ensure that when setting goals for the program you are aligning mutual needs from scientists, managers, and fishermen.</li> </ul>
Project Design - General	<ul style="list-style-type: none"> <li>• Consider the scale of management and connect that to the scale of the activity – think ahead and expand scale over time, if appropriate.</li> <li>• Identify questions from both groups (scientists and fishermen); then prioritize and determine what data need to be collected in order to answer the questions.</li> </ul>
Project Design – Evaluation	<ul style="list-style-type: none"> <li>• Learn from past and existing projects – both mistakes AND successes.</li> <li>• Incorporate program evaluation from the start – make part of the communication strategy.</li> <li>• The program must be adaptive – allow for course correction (evaluation throughout the process).</li> <li>• Determine why past projects failed and how to avoid failure moving forward (evaluation post-project).</li> <li>• Have project design peer reviewed (by both fishermen AND scientists).</li> </ul>
Project Design – QA/QC Project Design – Evaluation	<ul style="list-style-type: none"> <li>• Make sure you do pilot projects to ensure that data is statistically valid so that you understand issues and barriers with how the data are collected; then once this has been figured out, conduct a larger scale project.</li> </ul>
Project Design – Communication	<ul style="list-style-type: none"> <li>• Use frequent and relevant communications through appropriate channels during a project/program and include all information, both the positive and the negative; consider newsletters, social media, fishing magazines, etc. to deliver communication.</li> </ul>
Participation Incentives	<ul style="list-style-type: none"> <li>• Recognize the differences in citizen science for the recreational and commercial sectors – the incentives for participation will be different between sectors</li> </ul>
Participation Building Trust	<ul style="list-style-type: none"> <li>• Allow the fishing community to be responsible for funding research and the level of scientific rigor in the project dictates how it can be applied and used in management.</li> </ul>
Building Trust Participant Management	<ul style="list-style-type: none"> <li>• Have honest discussions about expectations up front with fishermen and scientists – for example, fishermen need to understand early on in the discussions that data could result in an increase or decrease in fishing access.</li> </ul>

(Continued)

Participation Management Data Management	<ul style="list-style-type: none"> <li>Require mechanisms for managing volunteers and data (within a project) – example was you have a scientist that develops a project with fishermen and then all of a sudden the scientist is having to coordinate a large number of participants as well as the data coming in; develop ways to help manage and coordinate these two inputs to a program</li> </ul>
Building Trust Project Design - General Participant Management	<ul style="list-style-type: none"> <li>Establish roles up front – who has the power in making decisions? Will the fishermen be involved in data collection only or will they also be involved in the decision making moving forward; those impacted by management decisions need to be clear about their roles.</li> </ul>

## DATA MANAGEMENT

**Issue:** The Council would like to ensure that data collected under the citizen science program is accurate and can be used in the science that helps determine management decisions. There is a perception that volunteer data may be biased and unreliable because the data are self-reported by fishermen and would then be used to manage their fishing activities. Additionally, data collected under a citizen science program would need to meet specific governmental requirements for data.

### Recommendations:

Theme(s)	Recommendation:
Project Design - Evaluation	<ul style="list-style-type: none"> <li>Need to evaluate both engagement of participants and the collection of data – they may not both be connected even if that is the ideal.</li> </ul>
Project Design – QA/QC	<ul style="list-style-type: none"> <li>Need (rigorous) data and metadata standards – BUT don't reinvent the wheel.</li> <li>Ask observer certainty of data - <i>Ask the participants how certain they are of the data they have collected as well as the people that are reviewing the data; so if the scientists thinks a data point is an outlier they can flag it with a level of certainty based on the collector and reviewer's level of certainty (some type of sliding scale of certainty); may only use data with a certain level of uncertainty for a specific type of limited analysis vs. data that is 100% certain by both collectors and reviewers may be used for more rigorous data analysis.</i></li> </ul>
Project Design - Technology	<ul style="list-style-type: none"> <li>Make it easy – use instrumentation and/or simple and accessible technology (data entry/recording tools).</li> </ul>
Project Design - General Building Trust	<ul style="list-style-type: none"> <li>Get buy-in early on in the process, start small, and try projects that are not too controversial; Small wins can lead to scientific buy-in (limited data can lead to stakeholder buy in).</li> </ul>
Building Trust	<ul style="list-style-type: none"> <li>Approach with trust – everyone needs to trust that data collected by citizen science; stop saying that there is a level of mistrust within the Council community about the data and when the program or project starts, make it the standard that the data IS reliable; don't sell it short before the program/project is out of the gate.</li> </ul>
Project Design - General Building Trust Participant Management	<ul style="list-style-type: none"> <li>Need open or semi-open access – make sure the fishermen know the level of access and who will have access to those data.</li> </ul>
Project Design - General Building Trust Data Management	<ul style="list-style-type: none"> <li>Make decisions up front with projects (program?) about <u>how</u> to summarize the data in order to protect confidentiality.</li> </ul>

## FINANCE & SUSTAINABILITY

**Issue:** The Council does not have the ability to apply for and receive grants. So, creative partnerships and alternative funding avenues will be critical for supporting projects.

### Recommendations:

- Explore options for public private partnerships
- Creation of a 501(c) 3 non-profit foundation to channel funds and donations to the program (for example, *Friends of the South Atlantic Council*)

### Additional Recommendations from Discussion:

- Go beyond “outreach” and emphasize learning – social science learning theory – in reference as to why some data may not be used
- Not all projects need to be “gold standard” – recognize varying levels of involvement when considering scale of projects and how they will be used in management

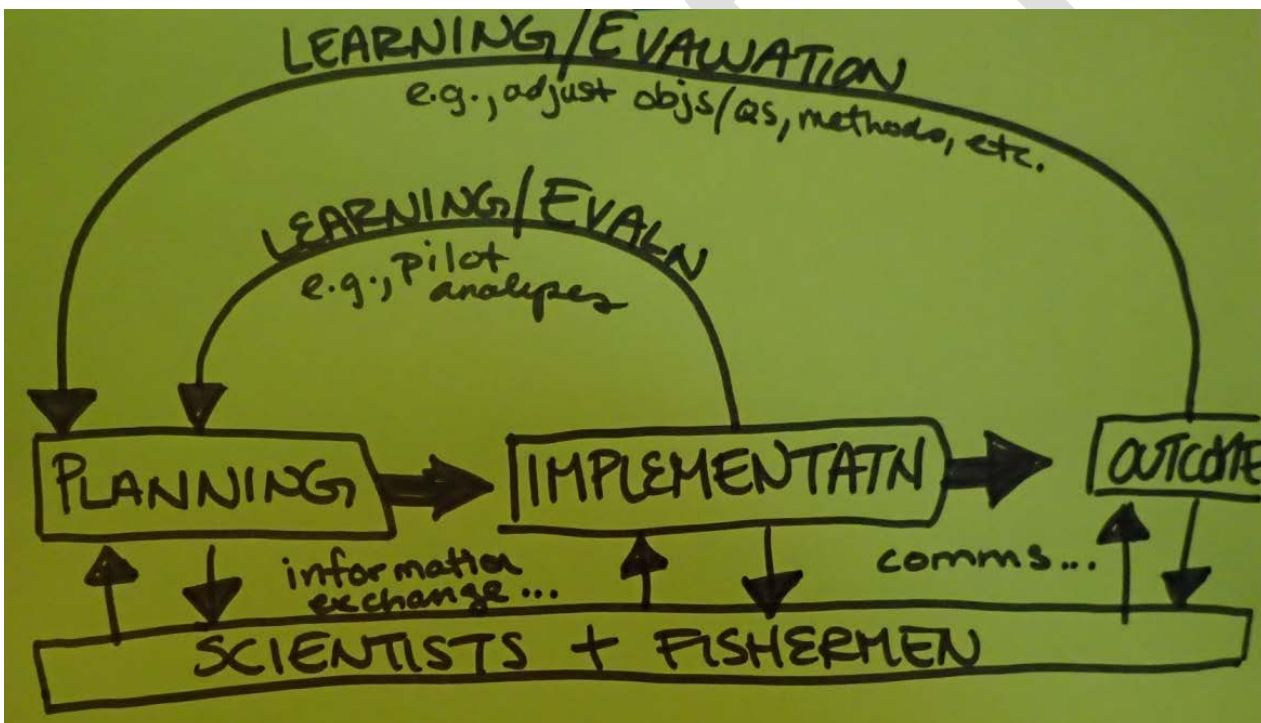


Figure 1: Diagram of an idea for a Citizen Science Project Flow Chart produced by a focus group participant.