

Best Practices for Engaging Communities in Citizen Science: Recruitment & Retention in COASST

Jennifer Metes¹, Heidi Ballard¹ & Julia Parrish²

¹University of California, Davis, ²University of Washington

Introduction

Coastal Observation & Seabird Survey Team (COASST) is a beached bird citizen science program gathering high-quality and near-real time data shared with scientists and resource management agencies. Understanding **how individuals become engaged** in citizen science projects, and **what motivates them to continue** and deepen their involvement, is crucial to long-term and broad- scale citizen science programming.

Using COASST as a “model” coastal citizen science program, we qualitatively examined factors affecting participant **recruitment** and **retention** to identify fundamental features of the program that may be translated into other existing or beginning citizen science projects. This was Stage Two of a three-stage mixed-methods study.

Coastal Observation And Seabird Survey Team (COASST)

Why citizen science?

No single researcher or resource manager alone could collect the breadth or consistency of data that people living in coastal communities can. People visit local beaches all the time and are often seeking ways to steward the marine resources and places they care so much about.

Why beached birds?

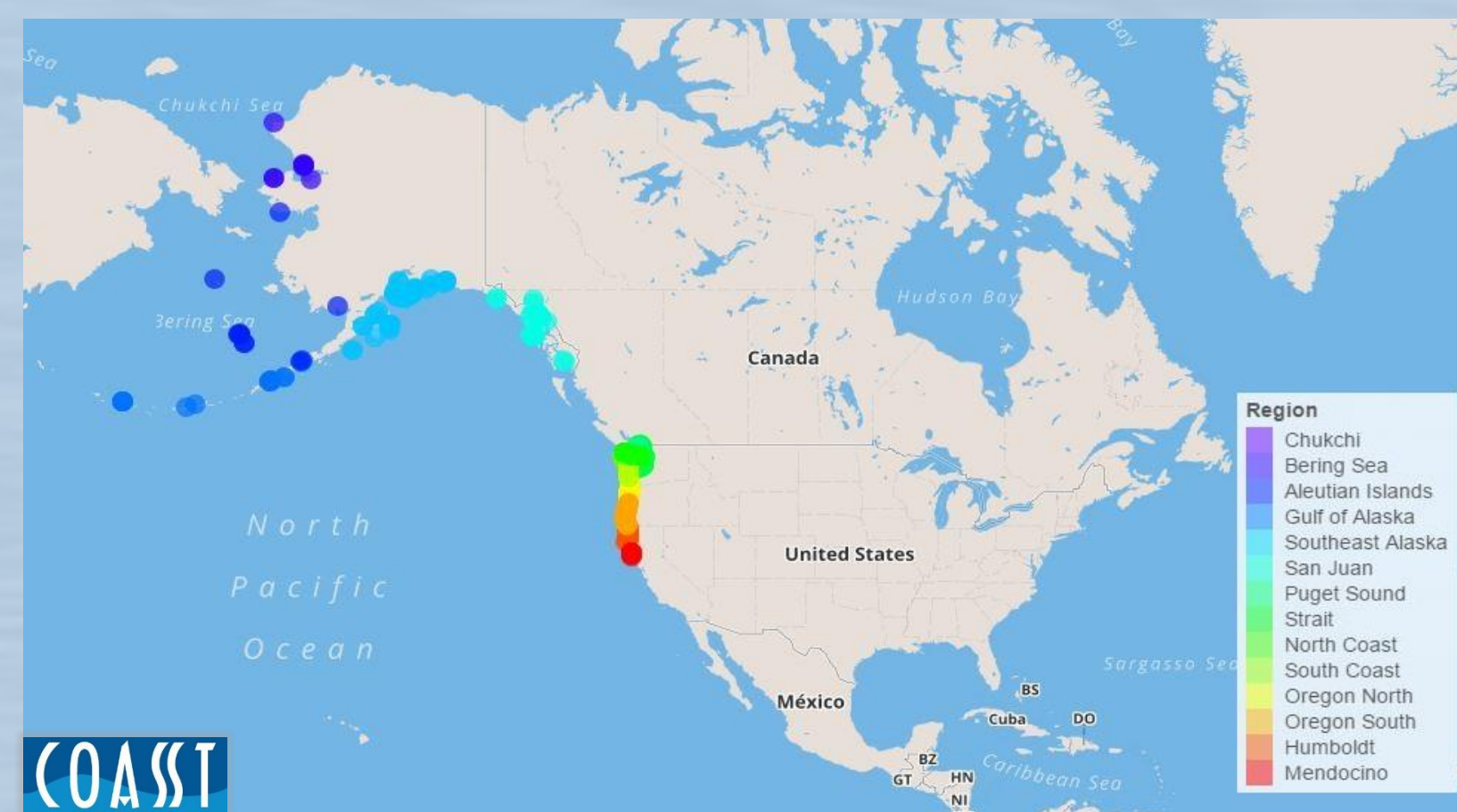
Within the marine environment, seabirds are indicator species. Like the “canary in the coal mine”, their populations can signal overall ecosystem health, as well as help scientists understand ocean weather patterns, predator behavior, fishing impacts, and oil spill effects.



COASST participant (i.e. a “COASSTer”) conducts beached bird survey

About COASST:

- Long-term monitoring (17+ years) of beachcast birds
- Trained participants document bird encounters through carcass measurements and photo evidence; every observation validated by experts
- University of Washington – expert staff and researchers
- Broad spatial-extent data tells where organisms are and when they're there



Coastal and Indigenous communities throughout Northern CA, OR, WA and AK participate in COASST



Common murre documented during beached bird survey

Methods

COASST Participant Focus Groups

Identify additional factors associated with participant engagement/retention, motivations, and interests

- 9 focus groups in communities throughout CA, OR & WA
- Active COASSTers (for 1+ years) from focal communities
- 8-15 participants per focus group
- Tables of 3-5 participants, 2-3 tables per focus group
- For each question: record individual responses, table ideas, new ideas from share-outs – each response on single Post-It, combine all responses on table poster



COASSTers discuss focus group questions in table group



A table's arrangement of responses by level of importance for 'why stay' question

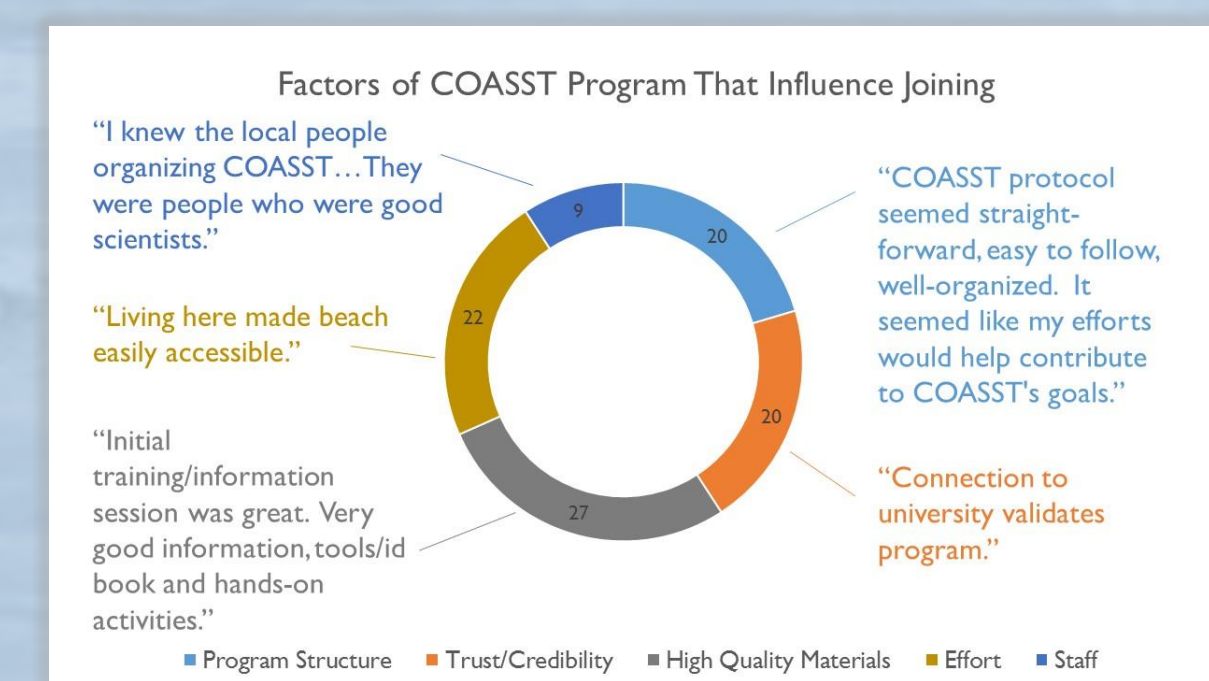
Questions:

- 1.) Why did you **join** COASST?
- 2.) Why do you **stay involved** in COASST?

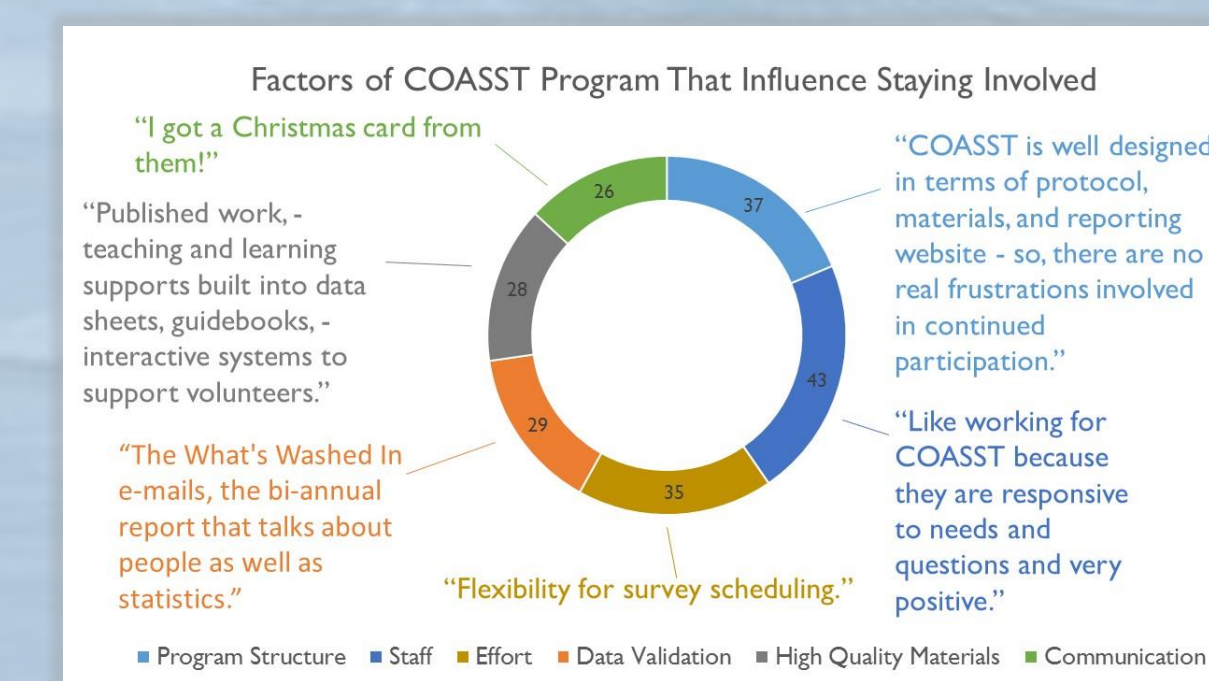
Findings

We asked key questions of the data about why people join COASST, and why people stay. Some questions are around factors we presumed to be important *a priori* before conducting focus groups; some emerged from our experiences during the focus groups or during data analysis. We analyzed the number of table groups (approx. 21) and number of individual references (each time something was said) for each specific factor.

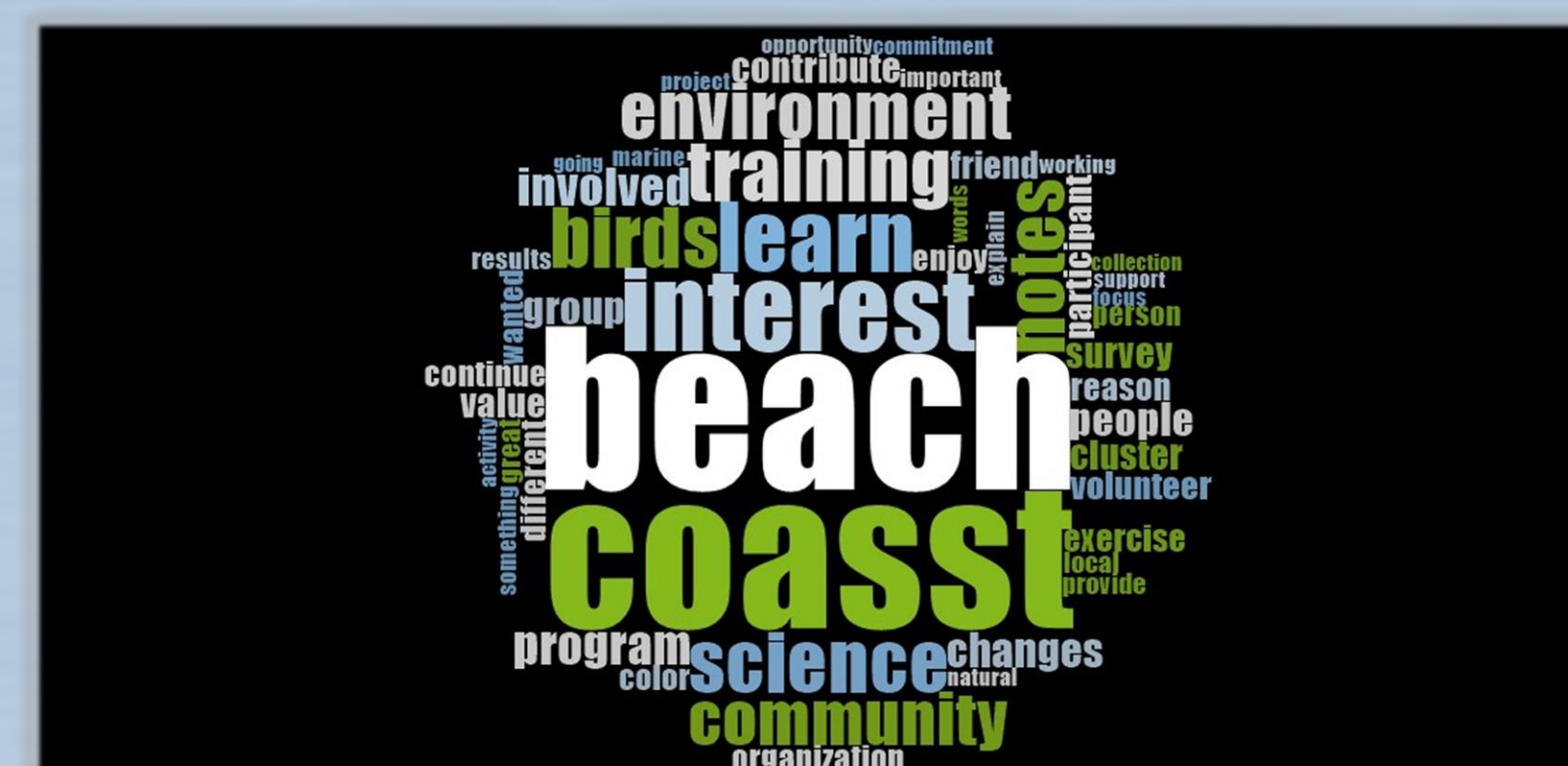
There were major factors & several sub-factors COASSTers cited most frequently. These were important features for both why people join and why they stay in COASST. Factors influencing “why join” appear to evolve and develop over time, leading to increased and more specific statements about how the same factors continue to influence “why stay involved”.



Predominant aspects of program offered as reasons for joining (measured by individual references)



COASSTers refer to additional and more specific reasons for staying compared to why they joined (measured by individual references)



Frequently used words in focus group responses

Implications

Factors	Why Join COASST	Why Stay in COASST
COASST Program Program itself is frequently cited reason for joining/staying, with variety of program sub-factors (see figures).	High quality training materials; Program structure; Trust/credibility of program; Low effort – easy to get involved (compliments current activities); Staff	Staff; Program structure; Low effort – already visiting beach; Validated data (concrete experiences); High quality materials; Good communication with COASST
Trust Aspects of COASST offer reasons to trust and rely on the program to serve certain purposes and meet specific goals (i.e. science, conservation).	Certain level of trust in program from the start. Notion of how the program was credible in these areas before actually participating.	Trust/credibility continues to evolve and develop. Having structures in place for communicating program science through staff, email, and opportunities for participants to interact with the director/lead scientist are important features.
Environmental Concern Concern about environmental issues prompts interest and participation in COASST.	General environmental concerns, mostly connected to personal identities/values and/or regarding a particular beach.	Provides ways to better understand and act upon environmental concerns—treating one's participation in COASST as way to understand/address a concern, or, become connected to wider environmental networks to share experiences and learn about other environmental issues.
Wonder of Nature/Place COASSTers show a love/wonder of nature (esp. birds) and/or a connection to place (local beaches).	People are already doing certain activities (walking the beach, looking for birds, visiting the coast, etc.) that COASST naturally complements and fits with.	Opportunity to revisit a specific place, watch it change, examine and understand it closely.

Summary of major factors influencing COASSTers' decisions to join and stay in program

Findings suggests that initial structure is important for participant **recruitment**, and that these support systems must remain consistent and continue to be of use in evolving ways for participants in order to support keeping people involved in the program.

Organized and clear systems are important for participant **retention**. Having systematic protocols for running trainings and collecting/reporting data fosters the sense of real science and creates clear communication channels (through program structure and staff) overall, encouraging program understanding and engagement. While often in citizen science the question is whether *participants'* data can be trusted, findings imply trust goes both ways, as the program's own credibility can be a driving factor for COASSTers.

Recommendations



As an organization or educator looking to start or participate in a citizen science program, consider what step you're at in this COASST model. If you're already connected to an organization you may be ready to focus on developing the program itself. If you have an idea for a program or good study subject, it may be useful to find a research partner to work with to help you expand. A forthcoming product of this research will be a *Coastal Citizen Science Best Practices* document for citizen science practitioners outlining this work in further detail.

Acknowledgements

Thanks to West Coast Sea Grant for generous funding of this research, COASST staff for help organizing focus groups, and all the COASSTers who participated!