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Key Summative Evaluation and Findings

Citizens, Science, and Conservation (CSC)

The goals of this Pathways Project will be to: 1) learn how to better recruit and

sustain deep relationships with seniors and youth; 2)facilitate the roles that these

two audiences can play as collaborators in field research and conservation science;

3) study ways that seniors and young people as well as scientists and lay people

might interact most effectively while in training and in the field, and 4) study

cognitive and affective impacts of such collaborations upon both citizens and

professionals.

In partnership with US Fish and Wildlife, Earth Force and RSVP (Senior Corps), the

CSC team will explore key questions that broaden the involvement of

underrepresented audiences in science research, education, and lifelong inquiry.

1) What training and/or mentoring for professional staff and laypersons is most

effective in increasing scientific skills among seniors and youth to prepare them to

be capable and active collaborators in field studies? 2) How does an increasing level

of involvement, motivation, and responsibility in becoming collaborators in field

science programs correlate to changes in knowledge, attitudes, or behaviors? 3)

How can we better recruit, train and retain senior citizens and youth as

collaborators in field research? 4) What new methods regarding the preparation and

launch of seniors and youth as full collaborators in field studies at Audubon IBAs

are applicable to ISE peers that manage other citizen science projects?

CSC's discipline was citizen science (public participation in

scientific research). The project was designed to explore techniques of how to

mentor and scaffold new volunteers to achieve more proficiency and confidence in

skills/knowledge as they 'move up the ladder' to take on increasingly complex and

rigorous monitoring and field research tasks. CSC 's field work at three sites

focused on the conservation of birds and their habitats.

Key Summative Evaluation Findings

**Implementation:** How are IBA sites trying to assist citizen scientists to “move up the ladder”? Are new methods in training and mentoring developed by CSC effective?

The opening national training was more successful than site-specific mentoring trainings.

➢ All program staff interviewed (site and national) mentioned that the introductory training session was productive. This training occurred at the National Center for Conservation Training in West Virginia and brought together program staff from all three sites along with the staff from NAS, Earth Force, and RSVP. Successful components included bringing everyone together to allow for networking across sites, and providing clarity around the vision and goals of the program.

➢ Training surveys for the site-specific mentoring trainings showed a somewhat positive view of the training activities and organization of the training, but many people did not feel that there was enough depth or that the training deepened their understanding of mentoring or scaffolding

**Impact:** To what extent, if at all, does the CSC project impact the learning outcomes of program participants? For whom, and in what context?

➢ Surveys of volunteers indicated that an overwhelming majority came in to the CSC program having engaged in activities in which they used citizen science skills. These activities included collecting data, creating a hypothesis, analyzing data, and even discussing results with others. Fewer people had published or distributed results, but still a good percentage of volunteers had even undertaken that task

➢ In the post-surveys, volunteers were likely to report that they agreed the CSC projects had the potential to make a positive change in the environment, were useful to professional scientists, and allowed them engagement in a scientific endeavor.

➢ Survey respondents who completed the post-surveys were also likely to say that they liked learning how to do citizen science studies

Scale-up: How can Audubon better recruit and retain senior citizens and youth as collaborators in field research?

**Trends and future studies:**

Trends that emerged during this project that may contribute to the literature in the

fields of citizen science, public participation in scientific research and 'crowd-

sourced' science include:

1) There are significant challenges to move volunteers from contributory (collecting

data) to collaborative and co-creative endeavors. Further analysis of the

characteristics and attributes of those that do move beyond contributory tasks--

and those that do NOT--would be invaluable to this research.

2) Training in mentoring and scaffolding--for those volunteers who choose to

mentor other volunteers--requires robust, in-depth and illustrative content.

Practice sessions and role playing, especially in the field, show indications of being

much more effective than group lectures or workshops.

3) Ongoing support, reinforcement and frequent follow up in training for mentors

is crucial to the success of volunteer mentors' efforts. Our project showed,

conversely, that the lack of continued support in the techniques of scaffolding and

similar techniques severely hampered efforts to move new volunteers 'up the

ladder'. Project leaders need to take on the role of mentor to the volunteers who

have chosen to mentor others.

4) Further investigation of the dynamics of the social, intellectual and motivational

interactions between mentor and mentees in the context of citizen science is

warranted. We believe that variables in these complex relationships play a

significant role in the outcomes of successfully scaffolding volunteers. Studies of a

sampling of mentor-mentee pairs with both similar and dissimilar

skill/knowledge/interest/motivation sets may help to define parameters of pairings

that are more likely to produce positive results in moving volunteers beyond

contributory citizen science tasks.