ILI

Engaging and Learning for Conservation: Workshop on Public Participation in Scientific Research

Workshop Evaluation – Report 2, Follow-up

August 2011

Prepared for:

American Museum of Natural History

Cornell Lab of Ornithology

National Audubon Society

Prepared by:
Joe E. Heimlich, Ph.D.

About the Institute for Learning Innovation:

Established in 1986 as an independent non-governmental not-for-profit learning research and development organization, the Institute for Learning Innovation is dedicated to changing the world of education and learning by understanding, facilitating, advocating and communicating about free-choice learning across the life span. The Institute provides leadership in this area by collaborating with a variety of free-choice learning institutions such as museums, other cultural institutions, public television stations, libraries, community-based organizations such as scouts and the YWCA, scientific societies and humanities councils, as well as schools and universities. These collaborations strive to advance understanding, facilitate and improve the learning potential of these organizations by incorporating free-choice learning principles in their work.

Executive Summary

Engaging and Learning for Conservation: Workshop on Public Participation in Scientific Research was held at the American Museum of Natural History 7-8 April 2011. This preliminary report is based on the delayed post feedback from workshop participants 2-3 months following the workshop.

The overall goals of the project are to convene a workshop for scientists, educators, and community members involved in public participation in scientific research (PPSR) to share experiences, lessons, protocols, and tool and to collaboratively set forth a coherent agenda for answering outstanding questions for advancing informal education goals leading to conservation outcomes.

The overarching evaluation question, therefore, is one of accountability: did the workshop lead to such a shared agenda designed in a way as to meet the extended goals? However, moving toward this end requires meeting several objectives of the workshop, which in turn necessitate outcome-based measurement. As the workshop itself is the centerpiece of the proposal, understanding the changes in participants after returning to their daily routines around the key workshop products is a way of formatively understanding the potential for success.

In the workshop feedback, it was clear that both levels of goals were in operation during the workshop. In the delayed post measure, it appears that the distance from the workshop has increased value perceived in the workshop, and has led to a very different perspective of what was valuable from the workshop in translation to daily work.

First, the high percentage of respondents to the delayed post is telling. The findings throughout the follow-up of participants thinking differently, reflecting on practice, and considering new activities and audiences all indicate a strong, sustained influence of the workshop on the participants.

There were strong *gains* in perceived movement toward workshop goals in the delayed post.

There are also some important considerations for the organizers in the continuation of this project.

- As in the workshop feedback data, the energy around networking was tremendous. The shift of the energy to both action *and* to critical reflection suggests the workshop was timely and appropriate.

- Participants appear to be very committed to diversity or reaching new audiences and seeking a broad interpretation of diversity in participants in PPSR. Resources and support for this work could be important.

- Networking was clearly the dominant theme in the feedback immediately following the workshop. In the delayed post, there was still a strong networking theme, but

there was indication of networking underway as a result of the workshop rather than as a planned outcome from having attended.

- There is a perceived need for the toolkit and the completed resources surrounding the toolkit.

- A strong response in the delayed post feedback related to the need for an association for PPSR professionals.

- There was a shift in planned actions from the post workshop feedback to the delayed post feedback. In the immediate post workshop, specific activities were named related to plans for action; in the delayed post, there was more reflective and integrative activities identified.

Table of Contents

List of Appendices

Introduction

Engaging and Learning for Conservation: Workshop on Public Participation in Scientific Research was held at the American Museum of Natural History 7-8 April 2011. This preliminary report synthesizes the delayed post evaluation of the workshop using feedback provided by the participants.

The overall goals of the project are to convene a workshop for scientists, educators, and community members involved in public participation in scientific research (PPSR) to share experiences, lessons, protocols, and tool and to collaboratively set forth a coherent agenda for answering outstanding questions for advancing informal education goals leading to conservation outcomes.

The overarching evaluation question, therefore, is one of accountability: did the workshop lead to such a shared agenda designed in a way as to meet the extended goals? However, moving toward this end requires meeting several objectives of the workshop, which in turn necessitate outcome-based measurement. The goal for the workshop was to: Identify best practices for engaging the public in participatory scientific research that contribute to conservation action and environmental stewardship. To meet this goal, there were three objectives for the workshop:

1. Share success stories and take stock of progress in linking PPSR and biodiversity conservation;

2. Identify key strategies for developing conservation-related PPSR initiatives that contribute to participant learning and to scientific/conservation knowledge for society; and

3. Generate ideas for promoting communication, networking, and partnerships among individuals and organizations working in PPSR and conservation.

Methods

Delayed post. Two months after the workshop, a follow-up feedback form was generated using Qualtrix (delayed post-workshop feedback form). All participants were sent the link to the survey questionnaire. Of the 38 participants, 30 responded with 25 completing the questionnaire (66% completion rate). Of these 25, it was possible to match 15 post workshop feedback forms with the delayed-post (39% of participants). The instrument consisted of seven partially open-ended questions and a six satisfaction rank-scale items on a seven-point rating system. These items were designed to be compared to the post-workshop feedback.

Findings

Of the 38 participants, 32 responded to post-workshop feedback form; there were 30 who responded to the delayed-post. This suggests there is some degree of commitment within the group to this project. Although data were matched as possible, no demographic data were requested of the participants—the following data are from the first report. Of the

Institute *for* Learning Innovation

respondents to that evaluation, of those who shared the data, 12 (40%) were male and 18 (60%) were female. They have been with their current institutions for 1-35 years. The average tenure at an institution is 9.83 years, though this is skewed by the longer tenure time; median tenure is 7 years. This is also the median amount of time that the participants have been doing PPSR. The range for this demographic is 0-30 years, and the median is 7.22 years. Given the high number of respondents to the delayed-post, it is highly likely that there is consistency in these numbers between reports.

Desired outcomes from the workshop

As in the post feedback form, there were several participants who felt that **personal and professional expectations overlapped.**

Consistent with the post workshop feedback, the most consistent outcome for participants was that of **networking, connecting, and making contacts**. The difference between the professional and the personal in terms of the meeting people aspect in the delayed post measure was the more obvious social and personally rewarding aspect of meeting people: "meeting people whose work I have been reading about and with whom I have interacted by phone," "...tussle with folks about a particular issue, or share an evening of conversation that allows me to get to know someone better," and "the times we shared outside of the programmed workshop." For some, "the social aspects of the workshop were very rewarding."

Networking was, as before, the most dominant theme. Four words were used by different respondents consistently in the response for professional outcomes: *networking* (as in "Networking and new relationships that I established. They provide a lasting legacy that will support my work well into the future" and "Networking—it's always good to see who is doing similar things"/"networking and finding out what is going on in the field"), *connecting* (as in "connecting with both educators and scientists" and "making great connections with folks around the country"), *meeting* (as in "meeting with the other Museum staff that work on Citizen Science initiatives" and "meeting colleagues and getting ideas"), and *collaboration* (as in "pursue collaborative funding opportunities").

The theme "**Learn more** about PPSR" from the post workshop feedback did show up as a component in both professional and personal outcomes for the participants in the delayed post. In the more reflective voice, these were often framed in statements relating to professional outcomes such as "see who is doing similar things, and what works and doesn't work" or "seeing the similarities and differences in perspectives" and "it helped me confirm as well as reject some ideas and PPSR and the links between fields that I'd had before the workshop." Within the frame of personal outcomes, the comments were similar but included some aspect of affect that was not as present in the professional: "I enjoyed learning more about the work being done in the field," and "fun to talk to all the folks and recognize how important our work is;" and also more personal applications of what was learned: "learning about potential applications of PPSR might be to my work," and "it gave me new insights and even new, concrete tools and information to bring back."

A theme present in the comments that was not in the post-workshop feedback comments was one of **reflection, contemplation, or refreshing**. One person noted the workshop was "helpful to me in thinking about how to enrich my own program" while another mentioned "contemplating research questions" with colleagues. One participant "benefitted greatly from critically thinking about the possible directions of citizen science/PPSR projects." Others were "energized by the ideas and discussions" or felt "it was encouraging to see so many people so energized about moving participatory ecological research forward." The workshop "refreshed my outlook on citizen science to include a more global perspective" and provided an "opportunity to listen to questions posed in the discussions." One participant noted "I found that my knowledge.....was valued by my colleagues at the workshop. This inspired me to reach out to organizations that could benefit from this information and offer support and advising."

Many statements **bridged several themes**. For example: "dedicating time strictly to thinking about the conservation outcomes that may be desired by PPSR programs....it is a treat to have time dedicated to a single topic and the ability to learn from the experiences of others regarding that topic...feels like cheating—getting a crash-course from others' expertise!"

A theme that carried into the delayed post related to comments in the post-workshop feedback around **audience building and diversity**. "Another wake-up call for me, here in a conservative part of the southern US, was the need to reach out to other demographic groups." "Many environmental organizations and public agencies that engage in conservation work have been making efforts to move towards creating more inclusive participation. This movement is relatively new...conference demonstrated that this group is sincere about stretching and learning more about these methodologies." "I am interested in building my professional skills for reaching diverse audiences, and I met several individuals there who I think can help me with that."

The themes *getting one thing from the workshop*, *the outcome of a real tangible product* and *clarity and unity around PPSR* were not present in the delayed-post comments.

There were several personal comments, a sampling of which follows:

"Personally, it was also really wonderful to get to see people I haven't seen in a while who I consider friends as well as colleagues."

"Citizen Science has deep roots at Cornell. The chance to meet with Rick Bonney and his colleagues was enormously helpful to me in thinking about how to enrich my own program."

One respondent used the opportunity to reflect on issues that arose personally during the workshop: "Of the people who are involved in PPSR, how many are motivated by wanting to learn, wanting to help, and wanting to change the world? And of those who are involved in PPSR—how different are those who are engaged in conservation outcomes and those who are not."

"On a strictly personal level, as a long-time museum person who had never gotten around to visiting the AMNH, to have a workshop there was WONDERFUL."

"Also added a couple new birds to my life list from the Central Park bird walk."

Barriers

In the post-workshop feedback, there were three dominant themes regarding what might prohibit individuals from getting from the workshop what they hoped. The first was the individuals themselves; the second was others; and the third was workshop elements.

In the delayed-post follow-up, no question directly asked about barriers. However, barriers did emerge in the responses. The most consistent barrier to implementation of approaches or reaching new audiences is **funding**. Several respondents included comments such as "I'm currently pursuing funding opportunities to test new PPSR approaches" and "we're waiting on grant funding to be able to implement anything new."

A couple of individuals noted issues of **time**: "I am hoping to find time…in the coming months" and it is "Too soon to reflect" or I am "Still working on them in the proposal stages."

One noted "nothing really, to be honest: we will continue to stress data management and data quality" while another simply stated they "haven't tried yet."

Meeting objectives

In the feedback form, participants felt the workshop did move the field forward, but the strength of agreement was not generally strong. For those matched post and delayed post measures, the means were *lower* in the post-workshop feedback for these 15 than for the larger group of 32. Table 1 lists the mean scores (on a scale of 1-7) from the workshop feedback form and the delayed post-workshop feedback form.

Table 1:   Workshop Objectives in Rank Order

Item	$\overline{x}$ Post	$\overline{x}$ Matched Post
Sharing success stories linking PPSR and biodiversity conservation	5.34	5.13
Generating ideas for promoting networking among individuals and organizations working in PPSR	5.19	4.80
Generating ideas for promoting communication among individuals and organizations working in PPSR	4.94	4.60

Generating ideas for promoting partnerships among individuals and organizations working in PPSR	4.78	4.27
Identifying key strategies for developing conservation-related PPSR initiatives	4.72	4.40
Identifying strategies for expanding PPSR to new audiences	4.59	4.33
SUM	**4.93**	**4.59**

Clearly, these respondents disagreed more with the degree to which the group progressed on the goals of the workshop overall and on each particular goal. Comparing the individuals' changes in response over the delay, there is a clear shift toward the positive, suggesting an improved perception of the workshop outcomes against goals over time.

Table 2:   Workshop Objectives in Comparing Matched Post and Delayed Post

Item	$\overline{x}$	$\overline{x}$
	Matched Post	**Delayed Post Matched**
Sharing success stories linking PPSR and biodiversity conservation	5.13	5.40
Generating ideas for promoting networking among individuals and organizations working in PPSR	4.80	5.40
Generating ideas for promoting communication among individuals and organizations working in PPSR	4.60	5.07
Generating ideas for promoting partnerships among individuals and organizations working in PPSR	4.27	4.87
Identifying key strategies for developing conservation-related PPSR initiatives	4.40	4.87
Identifying strategies for expanding PPSR to new audiences	4.33	4.60
SUM	**4.59**	**5.04**

It is interesting to note that for every score, the matched delayed-post score is higher not only of the post scores for the matched group, but also of the post-scores of the full group. In other words, those who responded with matchable data points were less satisfied with progress toward the goals at the time the workshop ended than the larger group. However, over time, the perceptions of these individuals were that the workshop did better in

Institute *for* Learning Innovation

moving toward its goals to such a degree that they, as a group, now more strongly agree that progress on goals was made at the workshop than did the group at that time. None of the matched items were significant at the .05 level, but given the very low n (15), that is not unexpected. It is the magnitude and the direction of movement that is of most importance in these non-parametric data.

Intentions

Participants were asked what one (or more) new approach they thought they would like to try in their PPSR efforts. They were also asked what they might see themselves doing differently in the next six weeks, and the next six months.

New Approach

In the post workshop feedback, there were no themes shared by more than four participants. But the approaches did cluster into six categories: *Involving people in data analysis, PPSR Steps, Evaluative thinking, Networking, Diversify participants/use local knowledge*, *Standardization,* and *Miscellaneous.*

In the delayed post, the most common theme was one of engaging differently with participants. Several comments related to the ways participants are being used in PPSR such as "Partner with local residents to create a network," "Include participants in the data analysis workshop (this fall)." Others were approaching new audiences such as "We're now working closely with the major UK secondary school networks to try to incorporate our PPSR projects as a core element of schools teaching," or "Explicitly target and try to find and work with groups who serve audiences of color, or underserved groups like Native American tribes."

A few of the participants are using the energy from the workshop to making some specific changes in their approaches. One noted "Just getting into working on a Citizen Science master plan for my institution" while another feels "The workshop was the catalyst I needed to begin a new approach using newer technology to collect data." A third is going to "Augment our website page such that it supports the steps outlined at the workshop. Intentions…have been communicated with a partner working with us developing online infrastructure for our program."

One participant noted they are "emphasizing evaluation" while another is "working on a paper about dealing with data quality issues."

There were three respondents who noted they do not do PPSR or trying new approaches is "not applicable in my work." "Did not gain many new approaches….most of my plans involve networking."

In the post workshop feedback, participants were asked to share what they would be doing differently in six weeks and in six months. For the near term (six weeks to two months), four themes emerged related to intentions: 1) *Networking,* 2) *Use tools from the workshop*, 3) *Share with others*, and 4) *Critically examine program.* For six months, some of the themes carried forward [from the six weeks], but most were not carried forward by the same individuals: 1) *Local implementation*, 2) *Sharing,* 3) *Networking*, 4) *Internal application*, and 5) *Evaluation.*

For the delayed post, participants were asked if they are doing anything differently in their work now compared with prior to the workshop. Three themes emerged clearly across respondents: 1) reaching new audiences; 2) reflecting differently; and 3) increased confidence.

In terms of **reaching new audiences**, the idea of expanding audiences covers a broad spectrum for the participants. *Scientists*: giving talks about citizen science in general…in a larger attempt to bring more scientists (both academic and agency) into the fold." *External*: "attention to how to build a legacy that we can share with outside audiences rather than thinking largely in terms of our own community." *Diverse audiences*: "inclusion of more diverse audiences" and "ensure [the programs] are accessible to community members of all skill levels."

One theme that emerged very much related to the intention "critically examine program" was that of **reflecting differently**. "I am trying to think more deliberately about the specific kinds of conservation outcomes my program has and could have" and "Clearly separating [science, education, and conservation objectives] into three fields with obvious areas of overlap has been helpful in thinking about the intent of this effort." One person is "drawing ideas from some literature to which I hadn't previously been exposed" while another notes that, while not doing anything differently now, "well, not daily. But the musing is important."

The third theme that emerged relates to **increased confidence**. Whether it is through increased commitment (e.g. "just even more committed to what I am doing") or reflecting confidence (e.g. "I'm moving more confidently in particular directions that were affirmed by folks at the workshop") there were several comments that suggest the energy of the workshop was carried into how individuals feel regarding their work.

There were also a couple of comments regarding collaboration and clear intent to move forward with collaborations reflecting one of the post-workshop themes.

Most important outcomes from the workshop

There were, again, very consistent comments related to what individuals saw as the most important outcome of the workshop. The strongest theme was that of a **formalized network, or networking.** A few respondents noted the "personal connections between the PPSR projects" and "new collaborations and partnerships emerge from this workshop" as the important outcomes. Most who referred to networks here referred to "an active

network of PPSR so that we can share ideas, support each others' work, and to help legitimize PPSR to the scientific community." Several referred to "creation of the professional society for PPSR" and "making the association accessible to more than the usual suspects." The reason, according to one respondent, is that "this field is growing rapidly, and I think setting a strong foundation for its future development will be key to advancing the field" while another thought "it would provide us with a way to easily communicate, be a clearinghouse for relevant CS information, a place to network, etc." One reiterated the perspective of the "group-wide decision to support and develop an association and journal for PPSR research and outcomes." In addition to a professional association, one respondent noted "along with the continued development of the various tools already underway. The workshop created more awareness of these efforts." Another, in sharing about building community, noted "it is extremely useful having a framework/toolkit to guide the development and implementation of new projects." Further, as another noted, support "begins to ensure the data collected are useful; support for more and diverse case studies comparing research with and without PPSR—pros and cons."

A second theme was that of **seeing commonalities/sharing stories** across programs. One respondent captured the essence of many other comments by saying "People on the ground running projects tend to think their project is different from everyone else's. …there is far more commonality between projects than organizers seem to initially identify. …When people are better able to see the connections between their work, they can also identify more points for collaboration and learning within the community of practice." Another also focused on the commonalities and suggested "PPSR could play an important role in our country's desperate need to improve the scientific literacy of our citizens."

Diversity was the third theme that emerged and the one that ties back most clearly to the post-workshop themes. As with the other responses, there was tremendous continuity, even when the responses were from different individuals on other questions. "Considerations of how to ensure diverse community members are represented in PPSR projects (i.e. age, race, physical ability, etc.)."

Perceived next steps

Clearly, according to the respondents, the most important next step is the development of "a committee to explore the creation of an Association." "I think that developing a society/organization with annual meetings and/or workshops will advance the field by continuing the discussion started at this workshop while opening it up to a larger audience of interested researchers, educators, natural resource managers, and volunteers." The work of this association could be in "a set of focused workshops; a journal of PPSR; establishment of best practices, a regular meeting." One value in that "the interdisciplinary dialogue is one of the ways we can better understand the full scope and potential of the work being done in this field, and therefore better lobby for the resources to support it." An association "will face challenges of meeting the needs of the many disciplines that need to work together to make PPSR effective."

A second theme related to the development of resources. "Generating solid guidelines for PPSR projects that resonate with both scientists and educators, credible to both" was one idea for next step resources. There was specific mention of "finalizing the toolkit" related to development of resources. One mentioned "improved and more easy to use online data management systems for the PPSR field" and another "encouraging some case studies that cross various programs…..to address very similar and common challenges in conservation and participation." Ultimately, the comments in this theme were about "developing a road map and milestones, creating a workgroup to take action, securing funding to engage in the process" and "creating a mechanism…for staying in touch."

A continuing theme that emerged was that of "new collaborations and partnerships would be great but I'm not sure there was enough interaction in the meeting to make that happen." On that line, next steps might include "provide outlets for face-to-face and online collaboration and discussion." One respondent noted that post finalization of the toolkit, "better integration of conservation needs, data management and PPSR activities" would follow from funding opportunities for collaborative projects.

Conclusions and Recommendations

In the first report, it was noted that the workshop appears to have been successful in meeting both its goals and the desired outcomes of the participants. The delayed-post measure focused less on the workshop itself, and more on the transfer of the workshop into the work of the participants. To that end, the workshop also appears to have been tremendously successful in creating energy around the work of PPSR.

In the workshop feedback, it was clear that both levels of goals were in operation during the workshop. In the delayed post measure, it appears that the distance from the workshop has increased value perceived in the workshop, and has led to a very different perspective of what was valuable from the workshop in translation to daily work.

First, the high percentage of respondents to the delayed post is telling. The findings throughout the follow-up of participants thinking differently, reflecting on practice, and considering new activities and audiences all indicate a strong, sustained influence of the workshop on the participants.

There are also some important considerations for the organizers in the continuation of this project.

- As in the workshop feedback data, the energy around networking was tremendous. The shift of the energy to both action *and* to critical reflection suggests the workshop was timely and appropriate.

- Participants appear to be very committed to diversity or reaching new audiences and seeking a broad interpretation of diversity in participants in PPSR. Resources and support for this work could be important.

- Networking was clearly the dominant theme in the feedback immediately following the workshop. In the delayed post, there was still a strong networking theme, but there was indication of networking underway as a result of the workshop rather than as a planned outcome from having attended.

- There is a perceived need for the toolkit and the completed resources surrounding the toolkit.

- A strong response in the delayed post-feedback related to the need for an association for PPSR professionals.

- There was a shift in planned actions from the post workshop feedback to the delayed post feedback. In the immediate post workshop, specific activities were named related to plans for action; in the delayed post, there was more reflective and integrative activities identified.

End of Report: 19 August 2011

Appendices

Appendix 1   **Instruments**

Engaging and Learning for Conservation:

Workshop on Public Participation in Scientific Research

PPSR Workshop Follow-up Feedback Form

You can complete this in word and send it to the evaluator at heimlich@ilinet.org, fax it care of Dr. Joe E. Heimlich at 614.228.6252, or print it off and mail it to: Joe E. Heimlich, OSUExtension@COSI, 333 W. Broad Street, Columbus, OH, 43215.

Thank you!

Your name:

Think back to the April PPSR workshop held at AMNH in New York City. Reflect on your time there and the discussions you had both in sessions and informally. We'd like to hear about what's been happening since and your perspective of the workshop now that you have some distance from it.

What was the most important aspect of the workshop for you professionally? Why?

What was the most important aspect of the workshop for you personally? Why?

Again, thinking back, for each of the following, please tell us the degree to which you agree or disagree with how well the group moved each of these goals of the workshop.

I think the workshop moved the field ahead by:	Strongly Disagree						Strongly Agree
Identifying key strategies for developing conservation-related PPSR initiatives	1	2	3	4	5	6	7
Sharing success stories linking PPSR and biodiversity conservation	1	2	3	4	5	6	7
Identifying strategies for expanding PPSR to new audiences	1	2	3	4	5	6	7
Generating ideas for promoting *communication* among individuals and organizations working in PPSR	1	2	3	4	5	6	7
Generating ideas for promoting *networking* among individuals and organizations working in PPSR	1	2	3	4	5	6	7

Generating ideas for promoting ***partnerships*** among   1   2   3   4   5   6   7
       individuals and organizations working in PPSR

When you left the workshop, you had some intentions to reach new audience(s). Share with us what you have tried, and what you plan to do next to reach new audiences.

You had also stated some intentions to try one or more new approaches to your work in PPSR. Share with us any experiences you have had in trying new approaches and what you plan to do from here on.

Are you doing anything differently in your work now than you were prior to the workshop? If yes, what are you doing differently and why?

Finally, reflecting back to the workshop and thinking about all the people who use PPSR in their programming, what do you think the most important outcome of the workshop could be? Why?

What do you think are the "next steps" for moving the field forward?

THANK YOU!!