

CITIZEN SCIENCE IN SAN DIEGO

December 10, 2012

Meeting Notes

The second meeting of the San Diego Citizen Science network/group was held on Monday, December 10, 2012 from 4:00 to 6:00 pm at the Girl Scouts program center, with 41 attending. It was noticed that more teachers and scientists attended the meeting at this time, and more agency professionals attended the October 19 meeting (from 8:30 to 10:30 am).

Introductions. Participants gave short introductions and brief statements of their interests in citizen science. Shelley Glenn Lee gave an overview of citizen science processes, and referred to two primary references: article by Rick Bonney and others, 2009 (posted at <http://sdchildrenandnature.org/citizenscience.php>), and *Frontiers in Ecology Research* issue devoted to citizen science (posted at <http://www.esajournals.org/toc/fron/10/6>).

Presentations. Information was shared, from different perspectives, about local citizen science projects:

- James Hung, an ecology graduate student in the laboratory of Dr. David Holway at UCSD, discussed the benefits of working with the public (specifically schools) to conduct citizen science within ecology. James is planning a project with a local biology teacher (Jesse Wade Robinson) that will involve students collecting pollinators (bees and wasps) from around the county to assess pollinator diversity. The students will be using an internationally accepted protocol to collect specimens from their own backyards. The project may be expanded to a second school, which is located in close proximity to a wildlife refuge in east county. This will allow data to be collected within both urban and rural environments. James shared some experience working with a school, and that it was a positive experience for him as a scientist.
- Jesse Wade Robinson, Biology teacher at High Tech High-Point Loma, shared the experience and results of the bee project that was designed with Dr. James Nieh from University of California at San Diego (UCSD). The results and methodology of their project were published in an article "Testing Honey Bees' Avoidance of Predators" in the journal "American Biology Teacher" (2012).
- Matthew Leader, High Tech High teacher, is collaborating with a UCSD research lab (Therese Markow) to have students study *Drosophila* genetics through a citizen science field-based collection effort. He shared lessons about field trips, data analysis, and integration of the project with other classes.
- Robin Rivet, Technical Assistance for Urban Forestry, California Center for Sustainable Energy, outlined tree inventory mapping project (www.sandiegotreemap.org), which will soon be extended with mobile application for collecting data

Proposal to National Science Foundation. Shelley Glenn Lee provided an overview of a proposal that is currently being drafted to support citizen science in San Diego, for the Advancing Informal STEM Learning (AISL) to submit to the National Science Foundation by January 14 (<http://www.nsf.gov/pubs/2012/nsf12560/nsf12560.htm>).

The project/proposal is being drafted with four goals:

1. Increase awareness, communication, collaboration, and innovation among Citizen Science/Public Participation in Scientific Research (PPSR) stakeholders (educators,

professional scientists, government agencies, informal science centers, non-profit organizations) through the creation of a regional network. [Activities would include bi-monthly meetings of the CS network with learning workshops and time for coordination, at least 20 participants “committed” to attending all 6 meetings and others with “open” attendance; also online communication/collaboration tools.]

2. Build capacity of our informal science centers/educators, professional scientists and others to conduct citizen science projects regionally. [Activities would include doing an inventory of current projects and actively supporting the development of three “pilot” projects, one with your involvement.]
3. Increase availability and awareness of opportunities for public participation in citizen science projects at a regional level.
4. Formalize a process to disseminate and evaluate the impact of citizen science projects across the region.

Meredith Vaughn, Shelley Glenn Lee, Mary Ann Hawke, and Anne Fege are writing the proposal. Three key cooperators are sought, to develop and launch small citizen science projects using the nine steps of organizing CS projects (outlined in the article by Rick Bonney), each involving a team of scientists, land managers/conservation biologists, and an informal science center. A pre-proposal was submitted in August for a larger implementation grant (this one is for \$250,000 for a planning grant), and the reviewer’s comments were that it is a solid concept, well-qualified investigators, needs more pilot work, needs to specifically identify partners and participants, and needs more detail about the evaluation. The first two meetings of this SD Citizen Science network have provided an informal “needs assessment,” evidence of interest from many sectors, and some logical next steps for this project/proposal.

Feedback on NSF proposal concepts: The following suggestions were made:

- Incorporate evaluation and assessments that confirm scientific validity of data collected
- Evaluate participants’ experiences, perhaps with focus groups
- Emphasize values of bringing science, management issues, and collection resources into one network, and serving as a “matchmaker” for project sponsors and participants
- Add advisory group to review project proposals
- Connect adults and children to the nature “in their backyard” and actions “they can do something about” locally
- Engage parents, as their children participate in citizen science projects
- Engage community leaders (recall that Mayor Filner has a chemistry degree and Ph.D. in the history of science)
- Focus on locally-based science projects, instead of large national programs
- Build case studies, then communicate them as “stories” to engage the public in the future
- Use this driving point for outcomes, “it made a difference”

Expectations from Citizen Science Network: The following were contributed, as advantages of working together:

Education:

- Develop additional programs that address the mission of informal science/nature centers
- Increase public understanding of and belief in climate change trends and impacts, with data not collected by the government
- Engage schoolchildren to learn about their local environment, for example, Vista students collecting data on expansion of SR-76
- Teach students to love nature before introducing environmental impacts

- Humanize scientists and conservation biologists, meet them in person and learn about their career paths

Citizen engagement:

- Public participation in science questions relating to the environment, that citizen science can uniquely address
- Enhanced engagement and advocacy from participants in citizen science projects
- Address local issues that have considerable impacts on governments and businesses

Science values:

- Study nature components that are proxies for climate change impacts, to add regional data to national/global trends
- Analyze historical data sets retrospectively, and collect current parallel data
- Ask, “what would be the key species, that would be noticed if they disappeared tomorrow?”
- Focus on the biodiversity and unique Mediterranean climate-based habitats of San Diego
- Gather data on cross-section of beaches to foothills to mountains to desert

Coordination:

- Establish working groups featuring regional questions
- Provide support to educators and project coordinators for project implementation, perhaps with trained naturalists, to make the best use of scientists’ time in designing and analyzing project data

Communication options: Suggestions were made, for ways to communicate among participants in this SD Citizen Science Network:

- Realize that information overload results in messages deleted before they are read (“I’m only here because xx said the meeting would be interesting”)
- Use the MeetUp platform to share information about meetings(calendar) and local projects
- Send some messages in “bite-sized pieces,” perhaps using Twitter
- Assemble local project updates in a newsletter
- Continue using email format, for those who don’t belong to Facebook or Twitter

Next meeting: Ideas included:

- Set meeting for the week of February 4 to 8, at the Birch Aquarium at UCSD.
- Invite Karen Martin of Pepperdine University, who organized Grunion Greeters <http://grunion.pepperdine.edu/>. This is a “group of scientists, community members, environmental organizations, surfers, and beach workers dedicated to a better understanding of the habits and habitats of beach-spawning grunion, *Leuresthes tenuis*.”
- Host meeting at project or potential project sites, to “bring people out of their offices and away from computers!”
- Feature the scientists who have worked on these projects, learn how they connect with the public/citizens

Additional information:

Most attendees provided answers on a one-page survey (if they didn’t complete it at the October 19 meeting), and these responses have been collated. Questions related to personal experience with citizen science projects, what to get out of a project and this network, barriers, reasons for interest in citizen science, and relevant local science questions.

Send meeting note corrections to Anne Fege, fege@sandiegoaudubon.org