

SAN DIEGO CITIZEN SCIENCE NETWORK

October 10, 2013 Meeting Notes

The sixth meeting of the San Diego Citizen Science network/group was held on Thursday, October 10, 2013 from 4:30 to 6:30 pm at the Adobe at Los Penasquitos Canyon Preserve.

Introductions

Twenty participants offered short introductions and their interests in citizen science.

San Diego Tracking Team

The San Diego Tracking Team (SDTT) shared information about their wildlife monitoring efforts and use of citizen scientists in the collection of data. The mission of the SDTT is to promote the preservation of biologically diverse and sensitive landforms and wildlife habitat in San Diego County and adjacent areas by conducting wildlife monitoring and research coupled with outdoor and environmental education programs. SDTT is a regional alliance of volunteer-based wildlife tracking teams that conduct quarterly wildlife surveys in open spaces throughout our area. SDTT establishes data collection protocols, organizes teams, provides training, and maintains a historical database of wildlife survey results. More information at <http://sdtt.org/>.

Fred Kramer emphasized the history of collecting wildlife data in Los Penasquitos Canyon Preserve in the early 1990s, the transect-based protocol developed, incorporation as a non-profit organization in 2003, and the extent of data collected and analyzed over two decades. There are now also tracking teams for Preserve Calavera, Rose Canyon, Daley Ranch, Mission Trails, Blue Sky Ecological Reserve, and Anza Borrego. Volunteers collect presence/absence data as they observe tracks, scat, browse, carcasses, and other wildlife sign, and have installed some remote cameras. Since 2007, data has been collected on 36 transects, with 30-50 volunteers each contributing four days to transects monitoring. Challenges are funding, commitment of volunteers, resources to add transects, automated data collection, and quality assurance of data. The SDTT efforts have contributed to open space preservation, engaged people in local nature issues, and developed tracking skills that enhance employment of participants.

Analysis of San Diego Tracking Team Methods and Data

Dr. Rebecca Lewison, Associate Professor of Biology at San Diego State University gave an overview of the project she completed for the SDTT to assess methods, data collection and quality assurance, and trends of mammal presence/absence of mammals using tracking methods. She identified the human activity (housing, car traffic, recreational use) and environmental change (rainfall, vegetation condition, wildfire) that influence mammal populations and interest wildlife professionals and land managers.

ABSTRACT: Ecological networks are designed to protect and maintain biodiversity and ecosystem function over large scales, yet evaluating their ability to meet these objectives remains challenging, largely due to a lack of large-scale, long-term monitoring data for these networks. Citizen science often provides an effective way to collect large amounts of data over large temporal and spatial scales, potentially providing a means for monitoring and evaluating conservation outcomes within an ecological network. We used a long-term, citizen-science database to estimate trends in species' occurrence and response to landscape patterns across 13 sites within an ecological network in San Diego County, California, USA from 2000-2009. These data were effective for quantifying trends in occurrence of six focal species – coyote, mule deer, bobcat, raccoon, gray fox, and cougar – across several different spatial scales, as well as for reliably assessing species' responses to large-scale habitat and landscape patterns (e.g., urbanization, spatial arrangement of habitat fragments).

However, these data cannot be used to identify specific variables driving these patterns, and challenges in the design and effective implementation of large-scale ecological network monitoring protocols remain. Large-scale monitoring programs require careful consideration of spatial autocorrelation, detection probabilities, and study design, as well as close collaboration among citizen scientists, management agencies, and research scientists. This will ensure development of a robust monitoring program that includes clear questions and objectives, statistical rigor of the sampling design, and a detailed plan for managing and analyzing data, generating reports, and linking results to the management and decision-making process.

Interests and Information

- Megan Jennings (recent Ph.D. from San Diego State University) and Jack Tracey, US Geological Survey, have installed cameras in various tunnels in San Diego County to capture photos of animals using under-crossings (of roads).
- Heather Henter, University of California at San Diego (UCSD) outlined the San Diego Biodiversity Project, funded by the National Science Foundation-funded to incorporate authentic research into the biology curriculum at UCSD, <http://sdbiodiversity.ucsd.edu/info/about.html>. Students generate novel information - species barcodes - to communicate to the larger research community through the Barcode of Life database at <http://www.barcodinglife.com/>. Contact Heather at hhenter@ucsd.edu
- Teachers are interested in using citizen science, but they need relatively simple activities and applications. Identification and development of methods, for collecting and reporting data locally, would reduce the uncertainty of teachers about incorporating citizen science into their classes.
- Shelley suggested three great websites: www.citizensci.org, www.scistarter.org, and www.vitalsignsme.org.
- Shelley will give a presentation on “Engaging Students as Citizen Scientists,” at the San Diego Computer-Using Educators on Sat. November 2 at California State University-San Marcos.
 - Abstract: Students can participate with scientists and other observers in research projects by collecting and entering data about plants, birds, insects, weather, and astronomy. The San Diego Citizen Science Network can help educators identify online programs and smartphone apps that can enhance learning in and out of the classroom.
- Anne Marie Tipton will attend the North American Association for Environmental Education conference in Baltimore, MD from October 9-12, 2014, <http://www.naaee.net/conference/program>, which will have a strand for citizen science.

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