Session K1: Evaluating Monitoring Program Needs and Outcomes

Room A105

3:30 – 5:00 pm

0536
K1-1

A Summary of Findings on Citizen Monitoring Contributions towards the Monitoring of California Waters and Beneficial Uses

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With a population of over 38 million people, the demand for California's most precious resource, water, is growing exponentially. The usability of our water depends on its quality. To assist the state in meeting its water quality objectives, the Clean Water Team (CWT) was formed. Citizen monitors and watershed stewardship organizations can have a vital role in helping the state improve and protect water quality, especially during times of budgetary declines and staff downsizing. Data generated by the citizen monitoring groups, has been used by the state in a variety of programs. The CWT's goal is to help achieve effective, sustainable and integrated citizen monitoring programs throughout California. It assists groups through six core functions: outreach and communication, technical assistance/quality assurance, training, loans of equipment, event support, and information management. In 2010 a citizen monitoring program survey was conducted. Information obtained from this survey will improve how the CWT can assist citizen monitors and communicate the value of citizen monitoring programs and their data.

This presentation will highlight knowledge obtained through this survey. Such as the annual number of monitoring sites and/or stream miles assessed; the types of constituents monitored beyond just vital signs; the annual accumulation of volunteer hours devoted to citizen monitoring; an assessment of citizen monitoring budgets and the annual monetary impact of citizen monitors in California which can be measured in the tens of millions of dollars. We will also touch on items the survey indicated citizen monitoring groups could use additional assistance

0429
K1-2

Assessing the Needs of Extension-Affiliated Volunteer Monitoring Programs

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This presentation summarizes the results of a Fall 2011 web-based needs assessment survey of Cooperative Extension (CE)-affiliated volunteer monitoring programs. This survey included queries on program staffing, size, scope, age and ethnicity of volunteers, what is monitored and where, how data and results are used, as well as programmatic concerns such as funding, training, data sharing, and outreach tools. The questions are similar to those used in the last, 2001, survey, so that changes within the past decade can be determined. The survey results will be used to inform and direct the efforts of the staff of the Extension Volunteer Monitoring Network in enhancing and building capacity of volunteer water quality monitoring programs. The results will have widespread use and are germane to all volunteer monitoring or citizen science programs, not solely those connect to Cooperative Extension. (Note that the survey itself had not been conducted as of the abstract submittal date.)

This is the third time these CE programs have been assessed. The first nationwide assessment of Extension-based volunteer water quality monitoring programs took place in 1996. The target audience was Extension state water quality coordinators as well as program coordinators, at a time when there was considerable resistance to volunteer monitoring. It was also the first effort to systematically locate programs and learn their number, extent, and how they operated. This was also *before* volunteer monitoring was considered an acceptable-, and fundable activity for Extension staff. The results laid the groundwork for changes in Extension policies regarding volunteer monitoring, leading to their acceptance with Extension administration. The second systemic assessment of Cooperative Extension program took place ten years ago in 2001. It ascertained programs' perceived strengths and needs, their origins, staffing, training methods, quality assurance methods, support and outreach tools as well as funding. The responses formed the backbone of the comprehensive Extension "Guide for Growing Extension Volunteer Monitoring Programs." (http://www.usawaterquality.org/volunteer/GuideForGrowing/index.html) which has been described at previous NWQMC conferences, and used for several NWQMC & EPA volunteer monitoring workshops.

0421
K1-3

Analysis and Reporting of Volunteer-Collected Data in the Deer Creek Watershed, St. Louis County, Missouri

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Water quality data have been collected at the Litzsinger Road Ecology Center (LREC) in Deer Creek (St. Louis County, MO) by trained volunteers with the Missouri Stream Team program since 1996. For the past four years, a team of experienced volunteers has collected water chemistry data on a monthly basis at seven sites within the watershed. The group has also monitored the diversity of macroinvertebrates at LREC twice per year for several years. These data have been submitted to the Missouri Stream Team program for use in assessments by the Missouri Department of Natural Resources and the Missouri Department of Conservation. The data have also been shared with the recipients of a 319 water quality grant in the watershed to fulfill part of their monitoring requirements.

Though Stream Team volunteers from across the State of Missouri collect and submit water quality data and are aware of its use, data from a single Team are rarely analyzed as a unit and even more infrequently is this analysis returned to the Team in a format that they can understand and share with their community. The leader of the LREC Stream Team has performed an analysis of the Team's data and compiled a report combining a scientific approach with terminology that makes the work accessible to the general public.

0194
K1-4

What about the Volunteers? A Toolkit for Evaluating Learning Outcomes of Volunteer Participation in Water Quality Monitoring Programs

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Water quality monitoring is commonly depicted as a methodology that engages volunteers in scientific research aimed at the continuous monitoring, assessment, and reporting of aquatic ecosystems. Without the dedication of tens of thousands of volunteers devoting their time and energy to monitor the condition of their local watersheds, knowledge of these systems would be vastly reduced. Yet, despite the success of these projects to collect high quality, scientifically relevant data, we are only just starting to gather data about the volunteers themselves and what they get out of monitoring. For example, what motivates participants to engage in these efforts? What are they learning as a result of their participation? Does their participation encourage sustained interest in science? How might their involvement influence their overall stewardship practices toward aquatic systems? Water quality monitoring provides numerous opportunities to explore these questions and promote science learning in informal environments. However, the evaluation of learning outcomes within the volunteer monitoring community has remained a low priority for project leaders for numerous reasons.

A recent survey of water quality monitoring groups conducted by the Cornell Lab of Ornithology (CLO), working in partnership with ALLARM (Alliance for Aquatic Resource Monitoring), revealed that many practitioners would like to evaluate learning outcomes, but few know where to begin or can expend the time and cost associated with program evaluations. Recognizing the need to provide project coordinators with high quality, yet cost effective evaluation assistance, the CLO is currently developing an online toolkit for evaluating public participation in science efforts such as volunteer water quality monitoring programs. Through DEVISE, an NSF funded project, we intend to provide professionals, especially those with limited knowledge or understanding of evaluation techniques, with a suite of tools and techniques for understanding educational impacts related to knowledge, engagement, skill, attitudes, and behavior.

This presentation will provide a review of the current state of evaluation in water quality monitoring projects, as well as an overview of the upcoming toolkit. We also will discuss the importance of evaluating learning outcomes as a means of better understanding and improving volunteer satisfaction, recruitment, and retention.