

## **Session L5: Data Sharing and Presentation for Diverse User Groups**

Room B117-119

8:00 – 9:30 am

**0050**

**L5-1**

### **The State of Missouri's Streams – Showcasing Missouri Stream Team Invertebrate Data: 1993- 2010**

Holly Neill<sup>1</sup>, Tony Thorpe<sup>2</sup> and Dan Obrecht<sup>2</sup>

<sup>1</sup>Missouri Stream Team Watershed Coalition, Ozark, Mo., USA, <sup>2</sup>Mizzou-Univ. of Missouri, Columbia, Mo., USA

One aspect of the Missouri Stream Team program is collection of volunteer water quality data through the volunteer water quality monitoring program that began in 1993. Volunteer water quality data management occurs within the Missouri Department of Natural Resources. Early in the program there were plans for summary reports of the volunteer water quality data that would be distributed to volunteer monitors, general public, state agencies, governmental official and community leaders. This never became a reality because of the unforeseen volume of data, lack of staff time, and inconsistency of the data.

In 2010 the Missouri Stream Team Watershed Coalition (MSTWC) through a strategic planning process determined that showcasing volunteer water quality monitoring data was a priority. MSTWC is a state-wide nonprofit organization that focuses on supporting the Missouri Stream Team program in various capacities. MSTWC published the “State of Missouri’s Streams-Summary of Missouri Stream Team Invertebrate Data: 1993-2010” in 2011.

This presentation will discuss the challenges and benefits of analyzing and interpreting state-wide volunteer invertebrate data. It will also describe methods used to analyze data and communicate outcomes to a broad audience.

**0512**

**L5-2**

### **Tools for Integrated Water Quality Management: The San Diego Experience**

David Gibson<sup>1</sup>, Lilian Busse<sup>1</sup> and Joe Purohit<sup>2</sup>

<sup>1</sup>San Diego Regional Water Quality Control Board, San Diego, Calif., USA, <sup>2</sup>EcoLayers, Inc., San Diego, Calif., USA

Water, whether in its natural environment or in the built infrastructure, exists as an integrated system: Water resources, supply, use, wastewater, land, and habitat remain inter-related across water flows through jurisdictions and watersheds. However, the organizations, regulations, and processes involved in managing this integrated system are generally fragmented. Even within organizations, departmental roles and information “silos” for monitoring, compliance, and operations are common. This mismatch, or the lack of an integrated approach to any aspect of water management, including water quality, is a major cause for the high costs and inefficiencies for regulatory compliance and improving water quality.

The practical implications are simple. Almost every task becomes more expensive, repetitious, or cumbersome than what it could be with an integrated approach to managing water quality. In addition, the tools and data that enable Integrated water quality management will also encourage increased adoption of smarter, localized solutions that are cheaper and more sustainable (i.e., permanent).

The proposed paper will discuss Integrated Water Quality Management (IWQM) in the context of an ongoing long- term collaborative effort in the San Diego. Collaborators include the San Diego Regional Water Quality Control Board (SDRWQCB), EcoLayers, Inc., NGOs, universities, permittees, a river conservancy, and others. We will present key aspects of several web-based applications (portals) that have been implemented to date, including the SDRWQC-sponsored San Diego Regional Water Quality Portal in achieving IWQM at the regional level. We will also discuss some of the more important factors that go into the successful implementation of IWQM programs.

**0521**

**L5-3**

### **Niche Portals – Filling the Gap between Large-Scale Data Servers and the Needs of User Groups**

Peter Sabee<sup>1</sup> and Kamran Syed<sup>2</sup>

<sup>1</sup>*North Jackson Company, Corvallis, Oreg., USA*, <sup>2</sup>*North Jackson Company, Marquette, Mich., USA*

We expect to see rapid evolution of affordable yet dynamic data access web portals with niche focus, filling the computational and process gap that lies between the large-scale water quality data servers and the very focused information needs of specific user groups. This class of portal will be characterized by an absence of unrelated feature clutter, the ability to pull together diverse datasets, powerful data engines, smart menu-driven user interfaces coupled to interactive visualization and reporting tools, often including geographic displays and the ability to effectively display time-series information in a geographical context. In some cases, use of these portals will start with geographic or programmatic focus and evolve toward real-time, forecasted operational applications. This presentation will explore and demonstrate examples of niche web portals with geographic, programmatic and forecasted operational focus used by organizations ranging from cities to watershed groups and by user groups ranging from educators to utility operators.

**0481**

**L5-4**

### **Development of a Web-Based Data Repository to Assess Land Use Change and Surface-Water- Quality in the Piceance Basin, Northwest Colorado 1959-2009**

Jennifer Moore<sup>1</sup>, Jude Thomas<sup>1</sup>, Alisa Mast<sup>1,2</sup>, Cory Williams<sup>1</sup>, Keelin Schaffrath<sup>1</sup> and Jean Dupree<sup>1,2</sup>

<sup>1</sup>*US Geological Survey, Grand Junction, Colo., USA*, <sup>2</sup>*US Geological Survey, Denver, Colo., USA*

Northwest Colorado, including the Piceance basin, is undergoing large-scale energy development. The Piceance basin contains portions of the Colorado River, White River, and Gunnison River basins. Land management in the Piceance study area (9,500 square miles) is varied, including federally owned lands, agricultural land use, urban land use, ski resorts, gas well development, and oil shale lease areas. As energy development proceeds, there is potential for short- and long-term changes in surface-water and groundwater resources. Ongoing monitoring and assessment of surface-water and groundwater resources is needed in order to establish an understanding of baseline conditions and to understand the effects of development on those resources. Significant water-resource data sets, publications, and other materials have been developed over the years and are potentially available for use to assess baseline conditions and to predict land-use and energy-development effects.

Existing water-resource data sets, publications, and other materials are currently stored in disparate formats among numerous agencies and groups. The US Geological Survey, in cooperation with federal, state, county, and industry partners, developed a web-accessible common data repository to provide interested stakeholders access to historical and current water-quality information. These data were analyzed in a retrospective analysis report to provide a baseline assessment of available water-resource data, assess data gaps, and aid in the development of regional monitoring strategies. The analyses included multiple analytical approaches for selected water-quality properties and constituents including within-site and between-site comparisons for constituent concentrations and loads where data were sufficient using flow adjusted trends methods. Water-quality properties and constituents were also compared to Federal and State standards. The development of the web-based data repository and the findings from the report dictated a regional water-quality monitoring program designed to strengthen management of energy development and land use change and water quality in the basin.