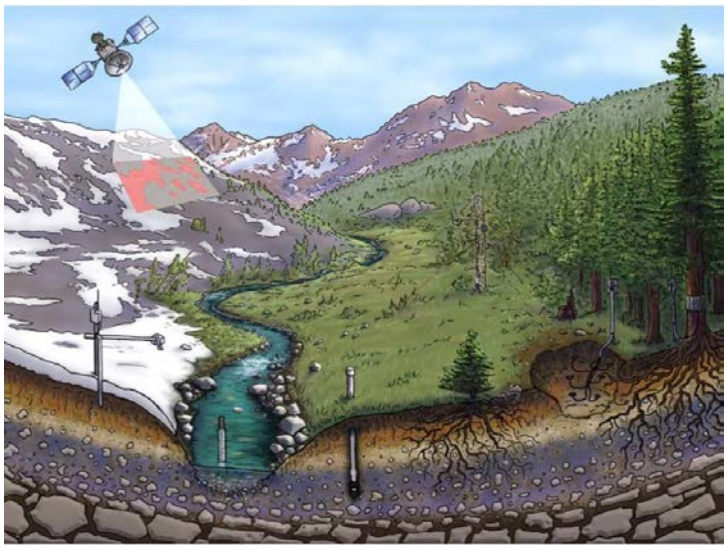
DELTA STEWARDSHIP COUNCIL

ECOSYSTEM RESTORATION PROGRAM

SWAMP Surface Water Ambient Monitoring Program

Delta Science Program, Ecosystem Restoration Program and Surface Water Ambient Monitoring Program Jointly Present

Observing the water balance in the Sierra Nevada:
Southern Sierra Critical Zone and American River Hydrologic Observatories



Martha Conklin
University of California, Merced

Friday, February 14, 2014
12:00 – 1:00 p.m.

Location: Cal EPA Building,
1001 "I" Street
Byron Sher Room, 2nd Floor

Can soil moisture in headwater basins inform the water balance of large complex watersheds?

Observing catchment-wide water balance and nutrient flux requires the integration of many factors, processes, and scales. This presentation characterizes research at the Southern Sierra Critical Zone Observatory (SSCZO) that utilizes wireless sensors to quantify a variety of hydrologic and climatic variables. Small headwater basins as well as large complex watersheds are monitored to understand hydrologic processes and inform forest management. The Observatory is a collaborative research partnership between the University of California and the U.S. Forest Service Pacific Southwest Research Station, and the American River Hydrologic Observatory.

The primary tool is the Critical Zone Observatory model which investigates the linkage between water/material fluxes and landscape/climate variability across the rain-snow transition. The SSCZO is investigating hydrologic processes in small catchments in the Kings River Experimental Watershed. Initial findings of the SSCZO were used to guide the instrumentation of the larger heterogeneous American River Hydrologic Observatory (> 2000 km^2). "Instrument clusters", installed across locations that vary in aspect, slope, elevation, soil and vegetation, capture an array of environmental parameters (snow-depth, temperature, solar radiation, soil moisture and temperature and sap flow), to understand local water balances. Data, analysis, and results from these observatories provide an unprecedented accounting of local water storage and fluxes with implications that extend from the mountains to the Delta—information necessary to develop effective future water management plans.

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for WebEx access information or other questions.