



RESEARCH HIGHLIGHTS

FEBRUARY 2004



DIRECTOR'S OFFICE (DENVER, COLORADO)

Shannon Cunniff relocated to **Denver, Colorado**. Her office is temporarily in Building 56, room 1014. Her new number is 303-445-2132.

The Submitters portion of the PropC System has been temporarily turned off, so that the proposal form and progress report can be changed for the next call for proposals. The goal is to make the proposal form and progress report more user-friendly. This portion of the PropC System will be open starting with the call for FY05 research and development (R&D) proposals. (Dan Levish, 303-445-3175)

The National Council on Science and Environment (NCSE) held its annual conference in **Washington, DC** on January 29 and 30. Its focus was on water for a sustainable and secure future. Shannon Cunniff and Kevin Price attended for Reclamation and made presentations at two sessions on desalination. Recommendations on water science needs that were developed by conference participants will be broadly circulated to Congress and other interests by the NCSE. (Shannon Cunniff, 303-445-2132)

The Science and Technology (S&T) program, in partnership with the United States Geological Survey (USGS) and the **Mid-Pacific Region's Klamath Area Office**, organized and hosted a workshop on Upper Klamath Basin science needs and priorities. Subsequent to the workshop, participants are voting via the web to provide a summary of views on priority science needs. In addition to total votes, priority views will be summarized according to the position



Dennis Lynch, USGS District Chief, Oregon, speaks at a workshop for the Upper Klamath Basin. Seated left to right are Steve Thompson, Regional Director, Fish and Wildlife Service; Kirk Rodgers, Regional Director, Reclamation; and Bill Sexton, Regional Hydrologist, USGS.

(e.g., water manager, scientist, and stakeholder) to ascertain where common and differing views exist. (Shannon Cunniff, 303-445-2132)

The **Technical Service Center (TSC)** and S&T program hosted a tour of the TSC labs for Energy Subcommittee staff. Subsequent discussions updated that staff on key desalination activities of interest to Senator Domenici. (Shannon Cunniff, 303-445-2132)

Met with representatives of the American Water Works Association Research Foundation (AwwaRF) to identify common research interests, to learn about their research management and peer review processes, and ascertain whether future partnerships might be possible. In early April, the AwwaRF representatives will tour TSC labs and have a

more in-depth briefing on Reclamation research activities in which common interest exists. A similar in-depth briefing will be held for Reclamation staff shortly thereafter. (Shannon Cunniff, 303-445-2132)

The S&T program is working with the TSC, the Water 2025 team, and regional representatives to identify priorities on which the Alliance Universities should focus to respond to Congressional direction associated with 2004 appropriations. This effort, which focuses on development of advanced remote sensing technologies to benefit water management, will be pursued through a cooperative agreement. (Shannon Cunniff, 303-445-2132)

UPCOMING EVENTS

March

Week of March 22 Email announcing intent to call for R&D proposals for the Science and Technology (S&T) program in April. This email will include a copy of the proposal form and instructions. This should give those interested in submitting an R&D proposal a month of lead time to firm up their ideas before the actual proposal call. (Dan Levish, 303-445-3175)

April

Week of April 19 Email announcing call for R&D proposals for S&T program for FY05. The Submitters portion of PropC will be opened for submission of proposals for FY05 and for submittal of progress reports for FY04. (Siegie Potthoff, 303-445-2136)

June

Week of June 21 Proposal submission process will close and review phase will begin. (Siegie Potthoff, 303-445-2136)

October

Early October Funding awards made for FY05. (Shannon Cunniff, 303-445-2132)

IMPROVING INFRASTRUCTURE RELIABILITY

The Hydroelectric Research and Technical Services Group, along with the **Eastern Colorado Area Office (ECAO)**, have successfully completed the installation and initial field tests of a 1-kilowatt fuel cell system for Pole Hill Powerplant near **Loveland, Colorado**. The fuel cell is providing critical backup power for the 48-volt dc communication equipment at the powerplant. The fuel cell has performed as expected. The ECAO is planning on replacing batteries with fuel cells at several of their communication sites in the near future. The major advantages are competitive installation cost, reduced annual maintenance costs, and longer backup time, which can exceed several days. The project is funded via the Reclamation S&T program, along with significant support from ECAO. (Jim DeHaan, 303-445-2305)



Field tests of a 1-kW fuel cell at Pole Hill Powerplant

IMPROVING DECISION SUPPORT

Reclamation, through its S&T program, is launching a collaborative project using BORGIS, Reclamation’s enterprise-level, geographic and remote-sensing information system, to deliver information on threatened and endangered species location and water supply to every Reclamation desk top. This effort is Reclamation-wide and aims to support Reclamation’s water management mission and help meet the [Department of the Interior’s Water 2025 objectives](#). This project will also develop enterprise level business partnerships with [NatureServe](#); the [BLM National Integrated Lands System \(NILS\)](#); and the [USGS Biological Resources National Biological Information Infrastructure \(NBII\)](#). More specifically, this effort consists of two S&T-program-funded proposals, titled “Western U.S. T&E Species Locator Web Service,” and “Geo-Spatial Water Supply Information System.” Go to the [S&T proposal management and tracking system](#) and sort by “Output area DS4-Water Res Data Integration and Mgmt” to readily locate those proposals. (Mike Beaty, 208-378-5172)



Brazilian and Reclamation researchers in Belo Horizonte, Brazil, developing a video fish identification system.

Representatives from the Office of Program and Policy Services and the TSC conferred with Commissioner Keys about the possibility of using newly available U.S. Department of Agriculture common land unit field data for replacement of the Reclamation crop census. These data, with proper protections, could form an important data layer in the Water Resource Management Information System currently under development with S&T funds. (Doug Clark, 303-445-2271)

The Annual RiverWare User’s Group Meeting was held on February 24 and 25 at the University of Colorado in Boulder. Several members of Reclamation’s Watershed and River Systems Management Program (WaRSMP) team participated along with representatives from the Center for Advanced Decision Support for Water and Environmental Systems, the U.S. Army Corps of Engineers, USGS, the Public Works Research Institute of Japan, **East Bay Municipal Utility District of California**, the **Lower Colorado River Authority of Texas**, the **Lower Neches Valley Authority**, and a number of private engineering firms. Reclamation participants benefited by learning about new capabilities being developed for RiverWare and how these capabilities are being used by partnering organizations. (Don Frevert, 303-445-2473)

UPCOMING EVENTS

March

March 17 and 18 The Interagency WaRSMP technical team will meet at the Boulder Canyon Operations Office in **Boulder City, Nevada**. (Don Frevert, 303-445-2473)

March 23 and 24 A planning meeting will be conducted at the Boise State University College of Business in **Boise, Idaho**. The objectives of the meeting are to exchange information, form both internal and external partnerships, and develop an action plan. A rapid deployment approach will be used to develop a plan that will focus on tasks that can be readily performed by the second meeting in mid-September 2004. (Mike Beaty, 208-378-5172)

IMPROVING WATER SUPPLY TECHNOLOGIES

A newly developed acoustic Doppler flowmeter was tested and evaluated in the TSC's Water Resources Research Laboratory to determine if it could accurately measure seepage losses in an unlined irrigation canal treated with polyacrylamide (PAM). PAM is a polymeric powder that shows great promise for reducing canal seepage. The flowmeter evaluation was funded by S&T projects: "Improved water delivery through modern canal materials" and "Development, testing, and demonstration of components of a canal modernization system." The results from this evaluation were summarized in a professional paper that was presented at the U.S. Committee on Irrigation and Drainage Water Management Workshop held in **Phoenix, Arizona**. (Tracy Vermeyen, 303-445-2154)

IMPROVING WATER DELIVERY RELIABILITY

A technical report was completed to evaluate selenium levels in constructed wetland ponds receiving irrigation return flows within the **Imperial Irrigation District of California**. This information on selenium concentrations in water, sediment, plant material, macroinvertebrates, and fish has been used by the **Lower Colorado Regional Office** and the **Yuma Area Office** in efforts to construct wetlands for integrating waterfowl and wildlife habitat into water management activities. (Richard Roline and S. Mark Nelson, 303-445-2213)

The effects of river regulation on the successful spawning of Chinook salmon below Cle Elum Dam in **Washington** were examined for 3 years. Despite being different from a reference site in dissolved oxygen and aquatic invertebrate communities, salmon alevin survival was relatively high. It was concluded that flows from the Cle Elum River were conducive to successful incubation of salmon eggs. This information could help identify reservoir operations that could initiate successful salmon production below other Reclamation reservoirs. A final report is available for interested parties. (S. Mark Nelson, 303-445-2225)