

Reclamation's Science Officer visits PXAO



Left to right: Phoenix Deputy Area Manager Brent Esplin; Keith Edwards of the City of Goodyear; PXAO engineer Tom Poulson; Ryan Rhodes of CH2M Hill; Dr. Paul Houser tour the Bullard Reverse Osmosis Facility located in Goodyear, Ariz.



Left to right: PXAO engineer Tom Poulson; Phoenix Deputy Area Manager Brent Esplin; Jim Bays of CH2M Hill; Dr. Paul Houser; observe the growth of various local vegetation, such as cattails, rushes, and salt grass, in the Concentrate Management Wetlands Pilot Project bins.



Dr. Paul Houser, 2nd from right, attends a morning presentation of Reclamation's Phoenix Area Office activities. Others in attendance, clockwise from lower left: PXAO engineer Tom Poulson; PXAO Water Agreements Planner Mitch Haws; Program Development Division Chief Bob Michaels; PXAO Deputy Area Manager Brent Esplin; Phoenix Area Manager Randy Chandler; and Public Affairs Specialist Nell Zeitzmann of Reclamation's Washington public affairs office.

Dr. Paul Houser, the new science advisor for the Bureau of Reclamation, visited the Phoenix Area Office in August. He met with Area Manager Randy Chandler, Deputy Area Manager Brent Esplin, Program Development Division Chief Bob Michaels and several PXAO employees who are working in the areas of science that specifically interest Dr. Houser. Nell Zeitzmann, public affairs specialist in Reclamation's Washington office, accompanied Dr. Houser on his tour of Lower Colorado Region projects and facilities.

Deputy Area Manager Brent Esplin started off the morning's presentations with an overview of the Phoenix Area Office and its activities, followed by specific presentations by Mitch Haws and Tom Poulson, both of whom work in the Program Development Division.

Haws, a Water Agreements Planner, presented a PowerPoint on desalination using distillation, a Science and Technology proposal that he's been working on. A report of findings will contain the parameters developed from the research and possibly lead to a pilot demonstration project.

"I'm glad to have had the opportunity to share with Dr. Houser the work we are doing here in the Phoenix Area Office," says Haws. "With regards to the Science and Technologies research I'm working on, I feel very fortunate to have the support of the Denver and Washington offices to study renewable energy and water and desalination issues. These studies will have a benefit to Reclamation, the Central Arizona and Salt River Projects, Native Americans, and all of the citizens of Arizona."

Haws is also working on a Science and Technology plan of study for renewable power generation for water transmission, which is looking at the possibilities of adding solar energy to Reclamation project lands for the augmentation of existing and future energy supplies. It appears there are extensive lands suitable for the development of solar facilities for powering the delivery of CAP water.

"Attempting to add renewable energy to the CAP system in order to ensure the sustainability of the project is of great importance," Haws says. "Developing distributed energy and water projects in remote

areas of Arizona will have a profound impact on the citizens without current access to traditional water and energy supplies.

"These research project are interesting and, when developed, will pay dividends in ensuring the sustainability of water and energy in Arizona," says Haws.

Civil Engineer Tom Poulson is continuing his long-term study of salinity issues in Central Arizona, and his presentation gave Dr. Houser a comprehensive history of previous accomplishments upon which current studies are being based. The Central Arizona Salinity Study concentrates on the areas in Maricopa, Pinal and Pima counties supplied by Central Arizona Project water.

After a morning of presentations, Tom Poulson and Brent Esplin took Dr. Houser and Zeitzmann to see the Concentrate Management Wetlands Pilot Project. It is located at the Bullard Reverse Osmosis Facility (RO) located in Goodyear, Ariz.

The RO facility produces 3.5 million gallons a day of pure water from brackish groundwater. In the process it produces 0.5 million gallons a day of concentrate, which contains 15% of the water but all the dissolved salts. This concentrate is considered an "industrial waste" by default in the Clean Water Act. This means the brine cannot be discharged into the environment.

Reclamation is experimenting with "vertical flow wetlands" which remove heavy metals and other regulated ions from the RO concentrate. The pilot project wetlands are located in 28-feet by 8-feet by 4.5-foot tall bins to protect the environment.

"For the experiment we can measure the flow in and out and also the quality of the water in and out. We have various media and plants in each of the bins," Poulson explains, "So far the data is looking very promising."

Partnering with Reclamation are the Cities of Phoenix and Goodyear. Jim Bays, a renowned wetlands specialist from CH2M Hill, is an advisor but Reclamation does all the field work. The money comes through Reclamation's Science & Technology program out of Denver.

They returned to the office for an afternoon presentation by Civil Engineer Leslie Meyers on Landscape Conservation Cooperatives (LCC), a part of the Secure Water Act and WaterSMART which utilizes principles of science, coordination, and communication.

The Desert encompasses the Mojave, Sonoran, and Chihuahuan Deserts in the southwestern United States and northern Mexico. Co-leaders are the Bureau of Reclamation and the Fish and Wildlife Service. In 2010, the Department of Interior developed a plan for a coordinated, science-based response to climate change impacts on our land, water, and wildlife resources. LCCs are the applied science branch of this strategy. Each LCC will function in a specific geographic area, and will form a national and ultimately international network. The Desert LCC is a self-directed partnership managed by a steering committee comprised of Federal agencies, States, Indian tribes, non-governmental organizations and Mexican government agencies.

"Dr. Houser was very aware of the Landscape Conservation Cooperative program and was interactive during the Desert LCC briefing," Meyers said. "His offer to help coordinate with the other interior agencies at the national level is really helpful."

Zeitzmann and Houser found the presentations and the field trip to be enlightening. "Reclamation's Phoenix Area Office is leading the way with innovative water treatment, desalination, renewable energy, and community-coordination and communication," Dr. Houser said. "These are top Department of Interior priorities and are a critical part of ensuring a sustainable future for Arizona."