



JANUARY 2010 NEWSLETTER

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VIEWPOINT: CHALLENGES AND NETWORKING

Survival and adaptation to change are challenges that we all must face. Noted sadly is the impending end of regular publication of Southwest Hydrology, due largely to the cessation of funding from the National Science Foundation, although SAHRA would like to keep it going. For eight years Betsy Woodhouse published a journal that was insightful and interesting, and she is to be congratulated for a job well done.

Over the last two years many firms found that survival entailed laying-off staff. Now it is the state's turn. On January 6, the Arizona Department of Water Resources laid off 47 people, eliminating 51 total positions. The ADWR Hydrology Division took a major hit, losing 15 people. The entire GIS group was also eliminated. Given the already depleted ADWR ranks, the loss of 47 people represents a loss of close to one-third of the agency. It could have been worse, as larger numbers had been discussed. Still this is a difficult period for ADWR.

Layoffs are painful, but they can be survived. Many people have been without work for some period of time in their careers. During such periods, the value of networking becomes clear. Networking affords the opportunity to hear about employment opportunities, to keep current in trends within the industry, and to meet new people who can expand your range of vision. Virtually every expert on human resources emphatically underlines the importance of networking for every professional, not just those temporarily laid off.

There is no better place to hone your networking skills than within the Arizona Hydrological Society. The

monthly meetings of the Tucson, Phoenix, and Flagstaff Chapters bring together a variety of water professionals—people you can talk to face to face. Check the schedule for your Chapter, and plant to go to the next meeting; you won't regret it. And the Annual Symposium remains the premier venue for professional contacts within the state and across the Southwest. This year's Annual Symposium will be held at the Westin La Paloma in Tucson, the site of the successful 2007 event, and you should mark your calendars now for September 1-4, 2010.

AHS survived a challenging financial year in which our Annual Symposium lost money (but only about \$1500). We are still financially healthy. We have a new Executive Director, Christie O'Day, who has been an active AHS member for many years. Christie has already assumed her duties. If you attended the 2009 Symposium, your dues for 2010 were included in your registration payment. But if you weren't able to attend, it is time to renew your membership by paying your dues of \$45. I urge you to send in your dues payment as soon as possible. Only by belonging to AHS can you reap the benefits of networking through AHS.

Alan Dulaney,
AHS Corporate Board President, 2009

MEMBERSHIP RENEWAL NOTICE

We remind our current and past members, that it is that time again to renew your membership. Many thanks to those who have already renewed – we value your membership and commitment to AHS!

If you attended the 2009 Symposium, or renewed your membership after the Symposium, your membership extends through the end of 2010. Otherwise, your membership expires at the end of December 2009.

To renew your membership you can either:

- 1) Renew Online: Regular Membership (\$45)
Student Membership (\$15)

- 2) Download our Renewal Form, and either:

- a) Fax to (866) 931-3134
- b) Mail to : Arizona Hydrological Society
3317 S. Higley Road
Suite 114-120
Gilbert, Arizona 85297

PHOENIX CHAPTER NEWS

January Kickoff Meeting

Our next dinner meeting will be held Tuesday, January 12th at the SunUp Brewhouse near 3rd Street east of Central Avenue on Camelback Road in Phoenix. This will be our annual kickoff meeting.

Please join us Tuesday, Jan. 12th at the SunUp Brewhouse in Phoenix to have a beverage, share business cards, and talk water. It's just a short walk from the light rail station too.

Location: SunUp Brewhouse
322 E. Camelback Road
Phoenix, AZ

Date: Tuesday, January 12, 2010
Kickoff Meeting: 6:00 PM – 8:00 PM

Cost: Free – So bring a friend and help us plan for 2010!

RSVP with Kirk Creswick at kcreswick@eecphx.com or 602-248-7702.

Hope to see you then.

December Meeting Summary

The Phoenix Chapter would like to thank Lucius Kyyitan, Director, and Brian Bennon, Hydrologist, of the Gila River Indian Community's Office of Water Rights for their presentation at the chapter's December 15 Dinner Meeting. Director Kyyitan provided background about his Community and shared an oral tradition cultural tale of how the rattlesnake got his fangs. Brian then followed with a presentation on the Hydrogeology of the Community's Reservation. The following is an overview of both presentations.

The Gila River Indian Community is located on the southern boundary of Phoenix, Arizona along the Gila River. From time immemorial, the Akimel O'odham (River Pima) and Pee Posh (Maricopa)—People of the River—and their Huhugam ancestors, subsisted (and thrived) in a symbiotic balance with the surface water flows that the live rivers naturally brought to this area in Central Arizona. They understood and respected the forces of the surrounding environment and, as a result, developed into a flourishing, progressive, and peaceful society that existed within its means in harmonious balance with the available natural resources. This society was known as the "breadbasket" of the arid Southwest by many of the early explorers.

This balance was destroyed when Euro-American settlers diverted water from the contributing watershed in disregard of this existing dependent civilization. What resulted was the collapse of our society. "The People of the River" were left without water and our people experienced tremendous hardship through famine and disease. Some of our people survived; mostly by selling fire wood that was harvested from water-starved riparian forests and mesquite bosques. Today, after decades of endless effort, the Community's water rights claims are settled through the historic 2004 Arizona Water Settlement Act. The Gila River Indian Community Water Rights Settlement will not bring back the once-live rivers of Arizona, but it marks a very significant historical crossroads for Community's future (and the future of others throughout Arizona).

Without the balanced hydrologic system that naturally existed in the past, the Community's lands are functioning essentially as a closed basin. With a shallow aquifer system, high water table, and elevating levels of total dissolved solids (salts), implementing the Community's Water Settlement will be challenging from a sustainability context. Potential long-term solutions include multi-jurisdictional collaborative efforts of regional groundwater management, shallow brackish groundwater dewatering and desalination, conjunctive management strategies for salinity control and aquifer storage and recovery. Additional strategies could include replacing massive salt cedar infestations with managed mesquite plantations for soil salinity control and soil fertility enhancement.

Hopefully, with their Water Settlement entitlements, the Gila River Indian Community will recreate a sustainable hydrologic balance with collaboration with their neighbors.

2012 Symposium Planning Underway

In the wake of the conclusion of the 2009 Symposium, the Phoenix Chapter has already begun thinking about and planning for 2012. Christie O'Day, Ted Lehman, and Mike Hulst have already begun exploring possible venues. If you are interested in helping them with the early stages of the planning for 2012, please contact 2012 symposium planning chair, Ted Lehman, at ted@jefuller.com or 480-222-5709.

Event Calendar (see also calendar on www.azhydrosoc.org)

- January 12th – 2010 chapter kickoff, SunUp Brewhouse
 - February – Chapter dinner meeting, TBD
 - March – Bouwer Intern Application Deadline, exact date TBD
 - March 22-25 – Arizona Science & Engineering Fair, Phoenix Convention Center
 - April 6th – AEG-AHS Student Night, ASU Memorial Union
 - Mar-July Dinner meetings – How 'bout you? Contact [Keith Ross](#) if you're interested in speaking!
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WSP BROWN BAG WATER SPEAKER SERIES: JANUARY 2010

Topic: Nanoparticle Interaction with Biological Wastewater Treatment Processes

Speakers: Jim Field, Professor, Department of Chemical and Environmental Engineering, The University of Arizona

Date: January 20th, 2010

Time: Noon to 1:30

Held at the University of Arizona Cooperative Extension, Maricopa County, Palo Verde Room at 4341 E. Broadway, Phoenix. Free and open to the public. Bring your lunch. There will be time for questions and answers. Please RSVP to Nancy Crocker at 602-827-8200 ext. 335 or NCrocker@cals.arizona.edu.

Information for additional seminars can be found on the WRRRC web site: www.cals.arizona.edu/azwater



TUCSON CHAPTER NEWS

Tucson Chapter January Meeting Announcement

Location: Offices of Montgomery and Associates
1550 E Prince Rd
Tucson, AZ 85719

Date: Tuesday, January 12th 2010, 6:00 pm

Social half-hour begins at 6:00 pm; Talk begins at 6:30

Food and beverages provided

Speakers and Topic: Bill Ellett; ADEQ and Jeff Tannler; ADWR. Outlook for ADWR and ADEQ in light of recent budget cuts.

Bill Ellett is the manager of the Superfund Programs Unit for the Southern Regional Office of ADEQ. Mr. Ellett will discuss the current state budget for the Water Quality Assurance Revolving Fund (WQARF) which is Arizona's state superfund program, how the current budget compares to recent years, and what the expectation is for fiscal year 2010. Mr. Ellett received his B.S. degree in Geophysics from the University of California at Riverside in 1980, and his M.S. degree in Hydrology from the University of Arizona in 1994. Mr. Ellett has been with ADEQ since 1998.

ADWR Tucson AMA Area Director Jeff Tannler will discuss the current state budget situation as it applies to ADWR, and will describe some of the options being discussed with stakeholders for future agency funding. Mr. Tannler received his B.S. degree in watershed hydrology from the University of Arizona. Jeff Tannler has worked in the Tucson AMA office since 1988. His responsibilities include policy development, planning, water rights administration and staff oversight within the Tucson Active Management Area.

Tucson Chapter February Meeting Announcement

Location: TBA

Date: Tuesday, February 9th 2010, 6:00 pm

Social half-hour begins at 6:00 pm; Talk begins at 6:30

Food and beverages provided

Speaker: Terra Michaels, Engineers without Borders

Topic: Terra Michaels will present on current and past activities of Engineers Without Borders (EWB) UA Student Chapter, including a recently completed upgrade to a wastewater treatment plant in Ghana and current activities developing and implementing a rainwater harvesting program in Mali. EWB is always looking for professional support for their projects, and would appreciate any support from interested AHS members.

2010 Symposium Planning Committee

The AHS Symposium Planning Committee met on December 17th, 2009 at the offices of Montgomery & Associates. Items discussed included:

- development of the 2010 symposium website
- details of the contract to be signed with Al Wynant of A6
- contacts made with other professional organizations regarding advertising the symposium to their members through mailings or advertising in newsletters/journals
- technical sessions and sponsorship subcommittees will meet prior to the next planning committee meeting

The next AHS Symposium Planning Committee meeting will be held on **Wednesday January 13th, 2010 at 5:30 pm** at the offices of Montgomery & Associates, 1550 East Prince Road, Tucson.

WRRC BROWN BAG SEMINARS: JANUARY 2010

Topic: The Arizona Water Atlas

Speakers: Linda Stitzer, ADWR, Resource Assessment Planning Manager and
Kelly Mott Lacroix, ADWR, Community Water System Planning

Location: Sol Resnick Conference Room
Water Resources Research Center
350 N. Campbell Ave.

Date: January 20th, 2010

Time: Noon to 1:30

Information for additional seminars can be found on the WRRC web site: www.cals.arizona.edu/azwater

FLAGSTAFF CHAPTER NEWS

Next Flagstaff Chapter meeting:

The next Flagstaff Chapter meeting will be on Wednesday, January 13th, 2010. 6pm, at Flagstaff City Hall. Margot Truini, Hydrologist with the USGS, will talk about her recent project work northwest of Kingman. Pizza will be provided. Hope you can join us!.

Location: Flagstaff City Hall
211 West Aspen Ave

Date: Wednesday, Jan 13, 2010, 6 PM

Cost: Free – So bring a friend and help us plan for 2010!

Mark your calendars for the following presentations at NAU!

Speaker: Tim Scheibe, Darcy Lecturer of the National Ground Water Association,

Date: Friday January 29, 12:30, Physical Sciences Room 103.

“Beyond the Black Box: Integrating Advanced Characterization of Microbial Processes with Subsurface Reactive Transport Models”

In this talk, Dr. Scheibe will introduce the audience to the amazing world of subsurface microorganisms and present some novel approaches to incorporating new knowledge and data into reactive transport simulations. Particular focus will be given to genome-scale models of microbial cell function, and how these models are being integrated into simulations of contaminant transport and fate in groundwater systems. These will be presented in the context of the application of in-situ bioremediation that aims to immobilize uranium in groundwater through microbially mediated metal reduction..

Speaker: Paul Marinos, 2010 Jahns Distinguished Lecturer of the Association of Environmental & Engineering Geologists and the Engineering Geology Division of the Geological Society of America

Date: March 5 at 12:30, location TBD

Topic: Geology of Athens, Greece: A case of urban geology for land use, construction of major engineering structures, hazard assessment and sustainable development.

HYDRO-NEWS

LOW SAN CARLOS LAKE LEVEL THREATENS FISH POPULATION

Farmers cut off from water, must use pricier sources

The Associated Press

Tucson, Arizona | Published: 01.03.2010

PHOENIX — The water level on Eastern Arizona's San Carlos Lake is so low the irrigation district that takes water from the lake for deliveries to Pinal County farmers has turned off the spigot.

As the lake empties because of persistent drought, authorities worry that thousands of fish could die.

The water level now sits at less than 5 percent of what it was a year ago and is nearing its lowest point in nearly 20 years.

In 1976 and 1977, the reservoir dried up entirely, resulting in millions of dead fish. But the water isn't likely to completely disappear this winter unless the weather turns abruptly warm and dry.

Fishing is still permitted, but farmers were cut off Monday when the San Carlos Irrigation Project, the federal overseer of operations at the reservoir, stopped releasing water.

<http://www.azstarnet.com/allheadlines/323722.php>

POLLUTION CONFLICT TRIGGERS ADDED TRIBAL HEARINGS

By Carol Berry, Today correspondent

Story Published: Jan 4, 2010

BLACK MESA, Ariz. – Opponents of increased coal mining on this massive site in northern Arizona were encouraged by the disclosure Dec. 3 that the Environmental Protection Agency has withdrawn a water permit and has ended, at least temporarily, concern about mining-related runoff into inadequate treatment ponds.

Black Mesa Water Coalition had appealed the water permit issued to Peabody Western Coal Co. on grounds that it violated the Clean Water Act, National Environmental Policy Act, and Endangered Species Act, and that it “failed to adequately analyze the environmental impacts of leaky waste ponds and failed to provide local residents with adequate opportunities for public participation,” according to a press release.

The EPA’s Southwest Regional office said by phone that the permit in question was a stormwater permit entering a routine five-year renewal period and was not flawed, but that the agency had decided to hold two additional public hearings on Navajo and Hopi tribal lands to accommodate further public comment.

<http://www.indiancountrytoday.com/national/80427077.html>

TIGHTER, COSTLIER WATER SHIFTING FOCUS TO CURBING DEMAND

by **Shaun McKinnon** - Dec. 27, 2009 12:00 AM
The Arizona Republic

OUTSIDE EL CENTRO, Calif. - About 25 miles west of Yuma, across the Colorado River in California's sand-dunes country, construction crews work day and night on two gaping basins that will, inside of a year, add another piece to Arizona's increasingly complex water future.

The Drop 2 Reservoir, a name befitting the project's utilitarian purpose, will collect the dregs of the Colorado, billions of gallons of water that seep through the cracks of an imperfect system. The water now flows south into Mexico if it can't be used immediately, written off as a loss for U.S. users.

For its \$28.6 million investment in Drop 2, about 16 percent of the total cost, Arizona will receive a small share of the water saved, to be taken in even smaller increments over 20-some years. California and Nevada will split the rest based on their contributions.

The water saved - up to 70,000 acre-feet each year - will amount to barely one-half of 1 percent of the river's annual flow. Arizona's share, 100,000 acre-feet by 2036, is a few drops in the bucket for a state that in a year uses 7 million acre-feet. (An acre-foot is 325,851 gallons, enough to serve two average households for one year.)

<http://www.azcentral.com/news/articles/2009/12/27/20091227water-future1227.html>

RAINWATER CAN CONTRIBUTE TO WATER SUPPLY, ADVOCATES SAY

Activists push to capture, store rainfall

by **Shaun McKinnon** - Dec. 28, 2009 12:00 AM
The Arizona Republic

TUCSON - Thickets of native trees shade the street in front of Brad Lancaster's downtown home, a patch of urban greenery that owes its survival to the strategic management of concrete.

Lancaster and his neighbors worked with the city to cut gaps in the curb to allow storm water to fill earthen basins carved out around the trees. No drinking water is used to support the landscaping, a lush array of mesquite, paloverde, cholla and prickly pear cactus and desert shrubs.

"It used to be the streets flooded around here, and I thought, 'It's like a creek,' " said Lancaster, an author, lecturer and rainwater-harvesting evangelist. "Then I realized, it *is* a creek. There's all the water we needed, and it's free."

With the curb cuts, the basins, some reshaping of the lot and the installation of two 1,200-gallon cisterns, Lancaster's one-eighth-acre property can now harvest as much as 100,000 gallons a year.

<http://www.azcentral.com/news/articles/2009/12/28/20091228water-rain1228.html>

REBATE PROGRAM TO LAUNCH IN MARCH WILL HELP CONSUMERS SAVE WATER, ENERGY, MONEY

by **Max Jarman** - Dec. 29, 2009 05:39 PM
The Arizona Republic

Arizona consumers in the market for a new washing machine, dishwasher or water heater might want to hold off until March.

That's when rebates from \$75 to \$450 will become available to Arizonans who scrap their old appliances for more-efficient models.

Cash for Clunkers Part II is expected to boost lagging appliance sales and help the environment by encouraging consumers to purchase more energy-efficient appliances.

Arizona has \$6.2 million to give away.

That's its share of a \$300 million pool of funds set aside by the American Recovery and Reinvestment Act of 2009 for appliance rebates, all designed to stimulate sales to help jump-start the U.S. economy.

The program will be administered by the Arizona Energy Office, which is still working out details of a program that is expected to get under way in March and last until the money is gone. Given an average rebate of \$200, the program could benefit as many as 31,500 people.

<http://www.azcentral.com/business/articles/2009/12/29/20091229biz-appliance1230.html>

CLEANING DIRTY AIR RISKS COSTLIER ARIZONA WATER

by **Shaun McKinnon** - Nov. 1, 2009 12:00 AM
The Arizona Republic

"People say water will get more expensive in the future, but what they mean is it's going to get more expensive to provide it, to move it, to treat it. Energy costs are going to be huge, and I don't think people understand it."

- **Sharon Megdal**
Director of the University of Arizona's
Water Resources Research Center

The Navajo Generating Station, the huge coal-fired power plant outside Page, supplies a fraction of Arizona's electricity demand, but its role in moving water to the state's largest cities has thrust it into a growing battle over the cost of cleaning up air pollution.

In the two months since the U.S. Environmental Protection Agency proposed rules that would require costly new air-scrubbing equipment at the plant, the debate has escalated into a war of increasingly dire predictions: Tribal economies could collapse. The plant itself could close. The price of water sold to Phoenix and Tucson could quadruple. Environmental groups have targeted Navajo and the nearby Four Corners Power Plant for years because of the emissions-related haze that builds up over the Grand Canyon and other fragile landscapes. The EPA ranks Navajo as the nation's third-largest emitter of nitrogen oxides,

pollutants created when coal is burned. Four Corners is the second-largest.

Find the rest at <http://www.azcentral.com/arizonarepublic/news/articles/2009/11/01/20091101water-ings1101.html>.

Shaun McKinnon also writes a blog – **Waterblogged** – on news and analysis about water, drought, conservation, climate change, natural resources, wildlife and the environment, from the forests to the deserts, from Arizona across the West at <http://www.azcentral.com/members/Blog/ShawnMcKinnon>.

Additional Information

For more information about the Arizona Hydrological Society, or to view current job listings and announcements, please visit our web site at:

<http://www.azhydrosoc.org/>

Your membership may be renewed for 2010 by credit card through the AHS website or by mailing a check to the Arizona Hydrological Society, c/o Christie O'Day, 3317 S. Higley Road, Suite #114, Box 120, Gilbert, Arizona 85297. Dues remain at \$45.00 year for regular membership and \$15.00 for students. Looking forward to a great 2010 with your continuing support. For those who attended the 2009 Water Symposium, be reminded that membership dues for 2010 were included in the registration fee.