



JULY 2010 NEWSLETTER

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VIEWPOINT: TIME FOR TUCSON!

OK, our Annual Symposium is now just a few weeks away. For those of us in municipal and state government, a new fiscal year has dawned. For those of us in the consulting realm, it is time to spend the money set aside for professional development. For those of us in academia, travel plans need to be made now, prior to the new semester. No excuses now, folks.

For all hydrologists and water resources professionals, it is now time to commit to attending our premier event of the year: the Annual Symposium of the Arizona Hydrological Society, which will be held in Tucson on September 1-4, 2010, at the Westin La Paloma. Registration is on-line and available now—you don't need to delay any longer. The Web site is <http://www.hydrosymposium.org>. And the rooms at the Westin La Paloma are ready to go too—no need to wait to make your reservation at \$96/night plus tax and resort fee. Such a rate for a major resort and spa, complete with golf, pools, and a water slide, is a major discount and makes for a great family vacation. Go to the Symposium Web site above to make your reservations now.

The Tucson Chapter is already working hard to assemble a memorable technical program based on the theme: Dryland Hydrology: Global Challenges, Local Solutions. "The symposium will focus on arid and semi-arid environments, not only because these are the conditions we face here in the southwestern United States, but because many parts of the world share our inherent challenges.

Fostering collaboration between communities from drylands all over the world can help generate new solutions to water resource difficulties. This is a particularly important part of U.S. border relations with Mexico.” We already have a great program lined up, plus workshops and field trips, including one to Cienega Creek that should be particularly interesting.

It is the premier AHS event and your Society needs you to register now! Don't let us down! It's time to get going!

Alan Dulaney,

AHS Corporate Board President, 2010

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GOVERNMENT GOINGS-ON

Something is afoot on the Colorado River.

The US Bureau of Reclamation is putting together an assessment of water demands and available supplies. The Colorado River Basin Water Supply and Demand Study was authorized in September 2009, and will run from January 2010 through January 2012. This is a relatively short timeframe in which to do a comprehensive study to define current and future imbalances in water supply and demand in the Colorado River Basin. Demands or uses to be taken into account include current and future power generation, recreation, and environmental demands, in addition to those allocations already established. This is new.

The Colorado River Basin Study will involve all seven Basin states, but Arizona has perhaps the biggest stake in the process. Arizona's portion of its land is the largest portion of any state to fall within the Basin; all other states have smaller areas encompassed by the Basin boundaries. And we have the CAP canal. Each state is contributing its own information concerning its water demands and supplies. The Department of Water Resources has compiled information for Arizona, based on the Hydrologic Atlas and various reports filed by water providers and permit holders.

The stated goal is to analyze water supply and demand imbalances through the seven-state Basin through 2060, assess options for addressing the imbalances, and develop recommendations. The analysis is one thing, but options and recommendations tend to make water managers a bit nervous. Everyone will be watching very closely to see how this study unfolds, and what changes might be proposed. Everyone knows the Colorado was over-appropriated back in 1922. Everyone knows the degree to which galloping municipal and industrial growth has forced reliance on the river, and how jealously everyone guards their allocations. Everyone knows that climate change and the possibility of severe drought could dramatically affect flows.

Nobody sleeps easy when the Law of the River is at stake.

Alan Dulaney,

AHS Corporate Board President, 2010

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2010 AHS ANNUAL HYDRO SYMPOSIUM UPDATE

The next AHS Symposium Planning Committee meeting is July 21 at 6:00 PM. See Viewpoint for update. Please contact [Shane Clark](#) or [Al Wynant](#) for additional details.

AHS CORPORATE BOARD MEETING JULY 10,2010

The next AHS Corporate Board meeting will be held in conjunction with the Flagstaff Chapter field trip at the Mormon Lake AHS campsite July 10 at 4:00. Please see the Flagstaff chapter news for field trip details. All AHS members are encouraged to attend the Corporate Board meetings. Please contact [Alan Dulaney](#) or [Christie O'Day](#) for additional details. [Click here for the Agenda](#).

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PHOENIX CHAPTER NEWS

July Dinner Meeting

Please join us Tuesday, July 13th at the SunUp Brewery near downtown Phoenix to have a beverage, share business cards, and talk water.

Location:	SunUp Brewery 322 E. Camelback Road Phoenix, AZ 85012
Event:	<i>ADEQ Program and Outlook update</i> , Michael Fulton, ADEQ
Chapter Board Meeting:	4:30 PM – 5:30 PM
Happy Hour & Dinner:	5:30 PM – 7:00 PM
Presentation:	7:00 PM – 8:00 PM
Cost:	\$15 member, \$20 non-member, \$5 student

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

Hope to see you there!

June Dinner Meeting Summary

-- Provided by Tom Walker, Phoenix

The AHS Phoenix Chapter thanks **Dee Fuerst, Central Arizona Project (CAP)** Senior Policy Analyst, for her interesting presentation at the Phoenix Chapter meeting on June 8, 2010 at SunUp Brewing Co. in central Phoenix. Dee's presentation was titled "**Planning For Recovery**," where "Recovery" is referring to the retrieval of CAP water stored underground for future use.

CAP water is stored underground by the Arizona Water Banking Authority (AWBA), which was established in 1996 to increase utilization of the state's Colorado River entitlement and develop long-term storage credits for the state. AWBA stores or "banks" unused Colorado River water to be used in times of shortage to firm (or secure) water supplies for Arizona. Colorado River to which Arizona is entitled, but which Arizona will not use in real (river) time, is stored underground to meet future needs for: assuring adequate supply to municipal and industrial users in times of shortages or disruptions of the CAP system; meeting the management plan objectives of the Arizona Groundwater Code; assisting in the settlement of Indian water rights claims; and exchanging water to assist Colorado River communities. In addition to these functions, the AWBA can also undertake additional water banking activities, for example, storing water for Nevada pursuant to the Amended Agreement for Interstate Water Banking.

The partners in the recovery process are the AWBA, the Central Arizona Water Conservation District

(CAWCD), CAP contractors, interstate customers, and the Central Arizona Groundwater Replenishment District (CAGR). In general, physical water is not exchanged; rather, “exchange credits” are the medium of exchange in groundwater banking transactions.

Recovery of CAP water stored underground may take place in the case of shortages on the Colorado River, in accordance with the 2007 “Colorado River Shortage Sharing Agreement;” under the terms of interstate water agreements; or in the case of non-routine repairs to the canal system, causing an interruption in anticipated deliveries.

The methods of recovering stored CAP water include direct recovery, in which water is pulled up and returned to the aqueduct; indirect recovery, in which water is pulled out from underground storage, but does not go into the aqueduct; and credit exchange recovery, in which exchange credits are traded, with water coming out in one location but being returned in a different location.

Recovery may take place at the interstate level, as with water banked for Nevada in Arizona; at the operational and regional level, involving large-scale projects such as the Tonopah Desert Recharge Project or the Pinal County Storage Project; or at the local level, often involving exchange credit transactions or indirect recovery.

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2012 Symposium Planning Underway

Ted Lehman, Christie O’Day, and Mike Hulst have been scoping out possible venues for the 2012 AHS Symposium and hope to have a decision this summer. If you have any strong opinions on locations or 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.

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

- August and September – No regular dinner meetings. Please join us September 1-4 at the Tucson Westin La Paloma for the AHS/IAH annual symposium!
- Oct-Dec Dinner meetings – How ‘bout you? Contact [Keith Ross](#) if you’re interested in speaking!

SURVEY RESULTS FOR POTENTIAL SHORT COURSES

The Phoenix Chapter appreciates everyone who took the time to participate in our poll on potential short courses in Isotopes and Current Mining Issues and Sustainability. The poll showed strong interest in the Mining Issues short course but a more even split for the Isotope workshop. A final decision will be made shortly taking in account of poll results and comments. The courses would be held in the in the afternoon from 3-7 pm for about \$50 which includes dinner.

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TUCSON CHAPTER NEWS

There will be no July meeting in order for chapter members to focus on the annual symposium. Please see Symposium Update and the Viewpoint for details.

August Meeting Announcement

The next Tucson chapter meeting will be held on Tuesday, August 10th.

Location: TBA

Event: TBA

Date: Tuesday, August 10, 2010

Time: 6:00 pm

FLAGSTAFF CHAPTER NEWS

The Flagstaff Chapter will not have a July meeting because of the July field trip and Corporate Board meeting on July 10th at Mormon Lake. See the Flagstaff Chapter Website or the field trip link off the main site for more details. The next Chapter meeting will be Wednesday, August 18, 6:00 pm, at the Lumberyard Brewery in Flagstaff, on San Francisco Street.

FLAGSTAFF CHAPTER SUMMER FIELD TRIP

Hops, Stops and Rocks: Hydrology, Geology, and Volcanology of the Mormon Lake area – Saturday July 10, 2010

We are gearing up for the Flagstaff Chapter Field Trip, Hops, Stops and Rocks: Hydrology, Geology, and Volcanology of the Mormon Lake area. If we have enough people sign up we may A) get a tour bus, which will really perk things up, and B) be surprised with a pancake and sausage breakfast Sunday morning from one of our fabulous members! We WILL have coffee Sunday morning.

Remember the good ol' days...when AHS put you on a bus with your best buddies, took you to interesting sites and talked hydrology all day long, while keeping you properly hydrated? Well, the Flagstaff Chapter would like to offer something similar this summer. You can now reserve your spot for the Flagstaff Chapter Summer Field Trip. Together, Dr Richard Holm, Volcanologist and NAU Geology Faculty Emeritus, and Dr. Abe Springer, Hydrogeologist and NAU Geology Professor, will take us to the best kept secrets in the region, presenting hydrology, structure, and volcanology from vistas and at outcrop. Dr. Holm said that he will even talk petrology, for enthusiasts; don't be caught off guard, come prepared! The field trip costs \$25 for members and \$30 for non-members, and includes van transportation from Mormon Lake, lunch, beverages, and, of course, hops at each stop. We will meet at the camp site near Mormon Lake at 9:00 am (departing at 9:30 am), and return by 4:00 pm.

Following the field trip and before dinner at 6:30, you can relax at the camp site we will have established, play some horseshoes, or engage in the quarterly Corporate Board Meeting! Dinner is catered BBQ from Flagstaff's delicious Big Foot BBQ. Pulled Pork and Pulled Chicken Sandwiches, Tater Salad, Cole Slaw, BBQ Beans, Green Garden Salad, Cornbread and Cobbler, plenty of drinks, and continued libations. Cost for dinner is \$15 for members, \$20 for non-members, and \$5 for Kids. If you choose to set up camp with us (free) you can opt for bagels, spreads, and juice the next morning for \$5. Mormon Lake Lodge is also an option for breakfast. The camping will be "rustic" but we are going to provide his and her toilets. If you would like to be cozier consider the cabins at Mormon Lake Lodge. They also offer RV and camp sites with facilities. See www.mormonlakelodge.com for details. Book now as these fill up quick! Other camping options are available at the Double Springs and Dairy Springs sites, reservations can be made online by visiting the Coconino National Forest website.

Please RSVP by Wednesday June 30. Call (928) 606-8422 or email Erin Young eyoung@flusol.com. While we really do trust your word, we still need a check (payable to Arizona Hydrological Society) or cash to completely guarantee and hold your spot. Please mail to: Erin Young 1055 Hano Trail Flagstaff, AZ 86001.

Directions to camp site: From I-17: Take exit 339 for Lake Mary Road, turn right and head southeast for 20.1 miles. Take right on Mormon Lake Road for 4.8 miles. Take right on Forest Service Road 240. We hope to be camped ¼ mile on left, but we may be at a site further up the road. We will have a sign for AHS on the Forest Service road. Please contact Erin to RSVP and for a map if you plan on attending.

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HYDRO-NEWS

COLORADO GEOLOGICAL SURVEY MAPS GEOTHERMAL HOTSPOTS

DENVER, Colo. – The Colorado Geological Survey has published two new maps of Colorado’s geothermal resources which may one day be used to help the state diversify its renewable energy generation portfolio.

One of the maps shows the state’s geothermal gradient, or the rate at which temperature increases underground. The second plots the location of inactive or abandoned oil and gas wells located near promising geothermal resources, wells which might be repurposed for electrical generation.

“Most of Colorado has temperature gradients that are higher than average for the earth’s crust, but we now have a map that shows us specific areas where temperatures are much higher than average,” said Matt Sares, deputy director of the Geological Survey.

Several other western states produce electricity from geothermal power plants, the top two states being California and Nevada. Colorado does not yet have a geothermal plant, though the U.S. Bureau of Land Management has begun the process of leasing federal lands for geothermal development.

The new map of Colorado’s geothermal hotspots was compiled using geothermal data from several sources including past Colorado Geological Survey publications, national and global heat flow databases, and oil and gas well data. It identifies several areas of high geothermal potential in mountainous areas of Colorado, including Mt. Princeton and Poncha Springs in Chaffee County, Waunita Hot Springs in eastern Gunnison County and much of the San Luis Valley. Other areas lie in or near Trinidad, Pagosa Springs, Rico, Ouray, Somerset, Cañon City and North Park, Sares said.

The second map identifies inactive oil and gas wells located in promising geothermal areas which could potentially be re-entered and deepened to access commercially promising geothermal resources.

“The Raton Basin near Trinidad and the San Juan Basin near Durango jump out as favorable areas on this map,” said Paul Morgan, senior geothermal scientist at CGS. Other “temporarily abandoned” or “shut-in” well locations in the Denver Basin are also highlighted.

Funding for the compilation of data and production of the maps came from the Governor’s Energy Office to help develop renewable energy in Colorado.

“This work is truly a collaborative effort between our state agencies to develop the geologic data that will attract geothermal development in Colorado,” said Francisco Franco, GEO’s Renewable Energy Program senior associate.

The new maps, “*Interpretive Geothermal Gradient Map of Colorado*” and “*Oil and Gas Wells in Areas of Colorado with Superior Geothermal Properties*” are available in digital format only. CD-ROMs containing the maps and associated databases can be purchased through the Colorado Geological Survey’s online bookstore at: <http://dnr.state.co.us/geostore/>.

COLORADO GEOLOGICAL SURVEY

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SOLAR PROJECTS WILL PROTECT ARIZONA'S WATER SUPPLY, NOT THREATEN IT - OPINION

by **Kris Mayes** - Jun. 21, 2010 10:01 AM

Special for The Republic

Arizonans don't need to worry that solar energy will guzzle our water supply. In a June 5 column, Sen. Jon Kyl raised concerns about a technology called "conventional concentrating solar power" (CSP), which uses the sun's heat to generate electricity.

He noted that this technology requires water usage similar to other water-intensive options for generating electricity, like nuclear power. Sen. Kyl called on energy policy makers to consider Arizona's future water supplies when making decisions about plants.

I wish to assure him that this is precisely what the Arizona Corporation Commission has done, both through the passage of the Renewable Energy Standard (which requires regulated utilities to generate an increasing share of their power from renewable sources) and in every case that has come before us regarding a CSP project.

The overwhelming evidence is that most forms of renewable energy, including wind and solar, use far less water than the types of energy our utilities are currently tapping to power Arizona homes and businesses.

Read more:

<http://www.azcentral.com/arizonarepublic/opinions/articles/2010/06/21/20100621mayes21.html#ixzz0sJIRYFxX>

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WATERBLOGGED BY SHAUN MCKINNON, ARIZONA REPUBLIC

Mapping the San Pedro: toads, bears, birds, bobcat tracks ... and even a little water

Friday, June 25, 2010 at 11:04 AM

More than 100 hardy volunteers spread out across 150 miles of the San Pedro River earlier this month to help create a map of where the river has water and where there is none.

Along the way, they found water, but they also experienced the rich diversity of life a river supports, everything from toads and frogs to bears and bobcats.

The mapping project, now in its 12th year, seeks what sounds like basic information -- the stretches of river that are wet and those that are dry -- but knowing where there's water and comparing it to past surveys can help scientists concentrate their work on areas that will most benefit from restoration work.

The Nature Conservancy, which oversees restoration projects on the San Pedro, organizes the river mapping project each year, working with the U.S. Bureau of Land Management and several other community groups from both sides of the U.S.-Mexico border.

The volunteers divide up the river and walk its banks. They record whether water is flowing, note the condition of the river corridor and report any wildlife sightings.

Long lengths of the San Pedro have dried up as water demands in the area climb. In some areas, the river's flow shifts underground, while in others, the river simply stops flowing, except during spring runoff and summer thunderstorms.

Read more: <http://www.azcentral.com/members/Blog/ShawnMcKinnon/87729>

Winter of '10: Yep, it was a wet one

Wednesday, June 23, 2010 at 10:51 AM

Not that statistics will tell the story of the past winter any better than the water rushing down the lower **Salt River** in April, but a set of numbers released today by **Salt River Project** puts an official sort of exclamation point on Waterpooza 2010.

What's surprising, though, is despite the full reservoirs, the mountains of snow and that drenching we took in January, the winter as measured in rainfall was just the 10th wettest on record for the **Salt** and **Verde** river watersheds.

The total on the two watersheds for December through May: **13.35 inches**. Even more striking was that almost half of that total fell in a six-day period in January. A total of **6.76 inches** fell from Jan. 18-23, a record for six days on the watersheds. And on Jan. 21 alone, **3.76 inches** fell across the two watersheds, the most one-day total on record.



Roosevelt Lake filled quickly, in part because it filled the year before, and it peaked on April 26 at a record elevation of **2,152.08 feet** above [sea](#)

[level](#). It stands today at elevation 2,149.44 feet.

The total January-May runoff into SRP's six reservoirs was **1,430,841 acre-feet**, which isn't a record, but puts it among the top 20 years in SRP's century-plus history. The total was far more than the reservoirs could hold, which meant SRP released **668,061 acre-feet** into the lower Salt River

Read more: <http://www.azcentral.com/members/Blog/ShawnMcKinnon/87577>

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For urban rivers, 'there is no safe zone'

Thursday, June 3, 2010 at 05:17 PM

Urban development can weaken rivers and streams far faster than once thought, according to a new [study](#), which suggests it doesn't take a whole city to wipe out a riparian ecosystem.

Native fish, [insects](#) and other aquatic life can begin to suffer losses after low levels of development, the **U.S. Geological Survey** found. Even so-called low-impact projects, seen often as protective of a stream, can lead to declines in biological diversity.

"We learned that there is no 'safezone,'" said **Tom Cuffney**, a USGS biologist, "meaning that even minimal or early stages of development can

negatively affect aquatic life in urban streams."

[USGS](#) scientists looked at aquatic life in urban streams in nine urban areas around the country, including **Salt Lake City, Portland, Denver** and **Dallas**. The

[study](#) found that as [parking lots](#), roads, sidewalks and other urban land covers spread, rivers and streams suffered. The damage was evident when as little as 10 percent of a watershed had been paved over.

Read more:



<http://www.azcentral.com/members/Blog/ShawnMcKinnon/85422>



Upper Colo. lands on endangered rivers list

Thursday, June 3, 2010 at 05:17 PM

Unrelenting demand for more water threatens the long-term health of the [upper Colorado River](#), enough to land it on this year's list of [10 most endangered rivers](#).

American Rivers, the group that compiles the list each year, said new diversion projects on the river could dry up fisheries and riparian habitat and weaken the Colorado's ability to provide a sustainable water supply for the region.

"We can't continue to take and take water from the Upper [Colorado](#) without accounting for the serious impacts to fish and wildlife habitat," said **Ken Neubecker** of **Colorado Trout Unlimited**, a conservation group that helped American Rivers with its report.

"This is a river on the brink," he said. "A vibrant, healthy river system in the Upper Colorado is every bit as important to the future of Colorado as the water it supplies to our farms and cities."

The Colorado, which supplies water to more than 25 million people in seven U.S. states and [Mexico](#), bubbles up in the highest reaches of the Colorado **Rocky Mountains**, where cities and other users begin diverting its flow through dozens of tunnels and canals

Read more:

<http://www.azcentral.com/members/Blog/ShawnMcKinnon/85237>

For associated links and other timely water blogs on Shaun McKinnon's Arizona Republic site – **Waterblogged** visit <http://www.azcentral.com/members/Blog/ShawnMcKinnon>.

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ADDITIONAL INFORMATION

For more information about the Arizona Hydrological Society, or to view current job listings and announcements, please visit our regularly updated 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.