



MAY 2011 NEWSLETTER

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VIEWPOINT: WATERSHED VARIABILITY

The Bureau of Reclamation recently put out a study of the potential effects of climate change on several major watersheds in the West; go to <http://www.usbr.gov/climate/SECURE/> for the entire report or several fact sheets. One was the Colorado River basin, of critical importance

to the seven states that share its over-allocated water. The Bureau fact sheet on the Colorado River watershed identifies several potential shifts that could affect the watershed. Temperature in the Basin is projected to increase by 5-6° F by mid-century. Precipitation is projected to increase by 2.1% in the upper basin while declining by 1.6% in the lower basin. Mean annual runoff could decrease by 8.5%. And these warmer conditions will likely result in a shift from snowfall to rain, thus increasing December-March runoff and decreasing April-July runoff.

What does this mean for Colorado River water users and managers? Well, the major demand on the water is irrigation for agriculture. If runoff decreases in the spring and early summer, the supply will be less when farmers need water the most. Warmer drier summers will increase evaporation from all reservoirs, adding complexity to management decisions. Reservoir management will become a true balancing act for smaller facilities, although Lakes Powell and Mead are large enough to act as buffers. Increased winter runoff could produce more floods, meaning more flood management will be needed. Environmentally, shifts in fish populations and ranges and riverine ecosystems could well occur.

The end of the world is not upon us. But the system will become less easily predicted as variability increases. The increasing complexity of management decisions must inevitably draw on hydrologic expertise to evaluate the range of options available. We can predict that there will be an increasing need for hydrologists as water resources management becomes more difficult.

This is why it is important for hydrologists to look at watersheds. The theme for this year's Annual Symposium strikes at the heart of the issue—Watersheds Near and Far: Response to Changes in Climate and Landscape. Every hydrologist needs to be in Flagstaff September 18-20 for this important event. Registration is open now online, and abstracts can still be submitted. Go to http://www.azhydrosoc.org/2011_symposium.html for more information, and register soon.

We can see what is coming. And all of us recognize the need to increase our skills.

Alan Dulaney,

AHS Corporate Board President, 2011

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GOVERNMENT GOINGS-ON

Sine die: The Arizona Legislature adjourned at 5:25 AM on April 20, 2011. There were few bills that directly touched water this session, and most did not fare well. SB1566 would have made permanent the ability to transfer groundwater between basins in a drought emergency—currently the authority is voted to the Arizona Department of Water Resources each year as session law. Changes in the permitting of exempt wells in emergencies would also have occurred. But the bill died a procedural death, never moving out of committee. SB1522 also died in committee; this would have set up a study committee to study rainwater harvesting issues (already mandated in Tucson), but would also have allowed groundwater pumping credits equal to 50% of the rainwater harvested. HB2114, which dealt with aquatic chemicals used to kill unwanted fish species, actually made it to the House floor, where it was defeated 10-50. Arguments focused on the requirement for the Arizona Department of Environmental Quality to conduct a full impact analysis for certain compounds and the moratorium on the use of chemicals until ADEQ becomes adequately funded. Like, never.

One of the biggest changes to come out of the budget battle was a new method of funding ADWR. Both ADWR and ADEQ have been taken off the General Fund. But while ADEQ has various Federal funding sources for delegated programs, ADWR has no Federal equivalent. ADWR needs \$7 million to replace the General Fund monies it is losing. So a new assessment based on population was levied on all municipalities to come up with the \$7 million, on the theory that the cities can raise water rates to cover it and citizens will blame municipal rather than state government. But there are certain implications that warrant careful thought. General Fund monies meant that ADWR was funded by the entire state, rural and urban, and thus all interests were served by ADWR. Now the largest cities will provide the majority of annual agency funding; Phoenix alone will pay \$2 million. What is it that water flows uphill towards? Cities are not interested in exercising direct control over ADWR, but voices can become very influential when backed with money.

Alan Dulaney,
AHS Corporate Board President, 2011

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PHOENIX CHAPTER NEWS

The next Phoenix chapter dinner meeting will be held **on Tuesday, May 10, 2011**, back at the SunUp Brewery near downtown Phoenix. Unfortunately, our scheduled speaker, Marie Pearthree, Central Arizona Project, will not be able to make it, but Karen Collins of Salt River Project (SRP) has graciously stepped up to give us a presentation on Water and Power. Please come and join us for a beverage, to share business cards, and talk water!

Location:	SunUp Brewery 322 E. Camelback Road Phoenix, AZ 85012
Event:	<i>Water and Power – Two Sides of the Same Coin?</i> Karen Collins, Salt River Project (SRP)
Chapter Board Meeting:	4:30 PM – 5:30 PM
Happy Hour & Dinner:	5:30 PM – 7:00 PM
Program:	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!

Abstract

Karen Collins manages water conservation and water sustainability programs for SRP's Water Group. Prior to this position, Karen worked in SRP's Energy Solutions Department,

Commercial Customer Services, Economic Development, and she was SRP's Corporate Economist for 5 years. Karen holds Master's and Bachelor's Degrees in Economics from Arizona State University. She is a member of the National Association of Business Economists and has appeared on the local PBS show, Horizon. Karen is also an adjunct professor of Economics at Chandler Gilbert Community College. Karen has been with SRP for 28 years.

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

- June 14 - **Ben Ruddell**, Assistant Professor in the Engineering Department at ASU, the *Water-Energy Nexus*
- July 14 (Thursday) – **Herman Bower Intern Scholarship Wine Tasting Fundraiser**, Terroir Wine Pub at 7001 N. Scottsdale Rd in Scottsdale, co-sponsored by Accutest
- October 2011 and beyond – Anyone with a suggestion for a monthly meeting topic please contact [Tom Walker](#), Phoenix Chapter Vice President

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ARIZONA SCIENCE AND ENGINEERING FAIR AWARDS

Each year since 2004, AHS and CAP awards cash prizes to deserving students at the Arizona Science and Engineering Fair <http://azsef.org/>. These prizes are awarded to elementary, junior and senior high school students for outstanding projects focusing on geology or hydrology. The AHS awards are considered "Special Awards", separate from the awards given by AzSEF.

The Arizona Hydrological Society is Announcing the Following Awards for AzSEF 2011, April 14-15:

Senior (High School) Division

First Place (\$100): S-EV-11-AzSEF-1178 "Banishing Bacteria: Testing Simple Ways to Reduce Bacteria in Water" by Kyra Tatlow and Catrina Letterman

Honorable Mention: S-EA-11-AzSEF-1005 "Comparative Crater Morphology of the Leading and Trailing Hemispheres of Saturn's Inner Moons" by Bridget Russell

Junior High School Division

First Place (\$50): J-CB-11-AzSEF-1291 "The Effect of Sunlight on Contaminated Water" by W. Brandon Peters

First Place (\$50): J-ME-11-AzSEF-1086 "Are You Prepared?" by Michelle Thomas

Honorable Mention: J-EV-11-AzSEF-1569 "Tsunamis – Giant Ocean Waves" by Aamirah Chisti

Elementary Division

First Place (\$50): E-CH-11-AzSEF-1683 "What are You Really Drinking?" by Cora Stevens

First Place (\$50): E-EG-11-AzSEF-11607 "Geothermal Well Optimization" by Liberty Scott

First Place (\$50): E-EV-11-AzSEF-1091 “Salinity of Central Arizona Waters” by Henry Gorton

First Place (\$50): E-ME-11-AzSEF-1207 “Don’t Take it for ‘Granite’ That Your Countertops are Safe” by Brogan Smith

Honorable Mention: E-EA-11-AzSEF-1530 “Dirt-Water-Perc” by Alexis Burgoyne

Honorable Mention: E-EV-11-AzSEF-1453 “Thirsty for Safe H2O” by Zainab Chaudhry

This year had a stand-out showing from the elementary division! Many thanks to Paul Plato, Clear Creek Associates, for organizing the AHS AzSEF awards each year!

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AHS 2012 SYMPOSIUM NOW IN PLANNING STAGES!

The venue for the 2012 Annual Symposium has been selected and dates confirmed! The Phoenix Chapter is pleased to announce that the 2012 Symposium will be held at the Desert Willow Conference Center (DWCC) on Sept. 18-21, 2012 in Phoenix. The DWCC is conveniently located near 48th Street and Broadway Road just off Interstate 10. Click [here for a map](#).

One of the great advantages of the DWCC is that it is not associated with a hotel. However, there are a number of great options for accommodations within convenient distance of the conference center with a wide array of levels of luxury from [Motel 6](#), [Hampton Inn](#), and [Homewood Suites](#) to [The Buttes](#) and the [Arizona Grand Resort](#).

More information will be coming available in the next few months as the Chapter begins to develop a website, program, and other details. If you are interested in helping with any of these preparatory activities, please contact 2012 Symposium chairperson, Ted Lehman (ted@jefuller.com, 480-222-5709) or Phoenix Chapter Vice President, Tom Walker.

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TUCSON CHAPTER NEWS

May 2011 Meeting Announcement

The Tucson Chapter will meet on **Tuesday, May 10, at 6PM**. The meeting will be held at the offices of Montgomery and Associates, 1550 East Prince Road, Tucson. The meeting will start with a social half-hour at 6:00 PM, followed by the regular meeting at 6:30PM.

At this meeting, Evan Canfield, Chief Hydrologist Planning & Development Division of Pima County Regional Flood Control, will give a presentation on the Beneficial Use of Stormwater.

Abstract:

Concerns about water scarcity, stormwater quality, the urban heat island, groundwater recharge and flood mitigation have resulted in greater interest in beneficially using stormwater. An assessment of the beneficial use of stormwater for the City/County study found that lot and neighborhood scales provide the greatest opportunities for stormwater

harvesting, primarily as a source of water to grow drought-tolerant deep-rooted plants. Therefore, the study recommended a shift toward more decentralized stormwater management practices, such as water harvesting in right of ways and greater use of passive water harvesting on individual lots. Along with other interested parties, the Pima County Regional Flood Control District recently conducted a Low Impact Development (LID)/ Green Infrastructure (GI) workshop to begin the process of integrating decentralized stormwater management techniques into our environment. Since these methods were developed to address water quality concerns in more humid areas, such as the eastern United States, integrating them into an arid environment is a challenge. However, the District is planning to integrate these methods into an upcoming Neighborhood Scale Water Harvesting Manual and an update of the Detention/Retention Manual. This presentation will summarize these efforts

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March 2011 Meeting Summary

Write up provided by Shane T Clark. Shane has been an AHS member since 2009 and is the Tucson Chapter Secretary (since January 2010). He is soon to graduate from the University of Arizona with a B.S. in Watershed Hydrology.

"OPTIMIZING RECHARGE EFFICIENCY-CASE STUDY-SAVSARP"

On Tuesday, March 8th, 2011 the Tucson Chapter hosted a special guest lecture by Wally Wilson of Tucson Water. This talk was attended by 12 people and was held at the offices of Montgomery and Associates, 1550 East Prince Road, Tucson.

Here is a brief summary of his lecture for those AHS members unable to attend:

Wally Wilson gave a presentation on optimizing recharge efficiency. Wally discussed the general operation procedures, monitoring and instrumentation logistics, data analysis ability, and modifications of recharge efforts in dealing with SAVSARP. Wally began his presentation by providing an overview of the facility which has been operating since 2008. SAVSARP is a real-time data instrumented, "Eyes on" monitoring facility in order to maximize the recharge volume being recharged in the basin. Wally Wilson and Dick Thompson operate this plant using non-traditional techniques. Prior to the results of SAVSARP, recharge into basins was done by flooding a recharge pond, shutting off the water when full, and then allowing the water to infiltrate into the basin consequently. Wilson and Thompson decided to try an innovative approach with SAVSARP. The basins are filled at a designated rate whereby the infiltration is measure via instrumentation above and below the ground, and closely monitored by Thompson through "real-time" data. The collection and analysis of this real-time data is done to enable optimal recharge rates into the basins. The empirical data collected is instrumental in conducting operation strategies that have exceeded recharge expectations for the SAVSARP facility. The SAVSARP model, utilizing the real-time data, is an innovative approach that highlights the actual versus perceived limitations on the recharge capabilities and capacities of individual basins. The results of the SAVSARP have been implemented in the Central Avra Valley Storage and Recovery Project (CAVSARP) which has been providing water to community residents since 2001. The results of SAVSARP as a case study could quite possibly change the way recharge rates are viewed in future water management operations.

The AHS Tucson Chapter extends a very warm thanks to Wally Wilson for his informative presentation!

Additionally The Tucson Chapter would like to thank Montgomery and Associates for providing the space so that this monthly talk could be held!

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SOUTHERN ARIZONA REGIONAL SCIENCE AND ENGINEERING FAIR AWARDS

AHS was again involved with at the Southern Arizona Regional Science and Engineering Fair (SARSEF). SARSEF 2011 was held at the Tucson Convention Center on March 21-26, 2011. AHS sent three science poster judges: Gary Burchard (Hydrogeologist from Metro Water), Shane T Clark (Watershed Hydrology, University of Arizona), and Dick L Thompson, Hydrologist, Water Resources Management, Tucson Water Department.

From thousands of exciting and wonderfully produced K-12th grade posters these were the AHS award winners:

Arizona State School for The Deaf and Blind: **Sabina Shysh**

Arizona Hydrological Society High School 1st Place-awarded \$125

Project Title: "Water Pollution"



Teacher: no information provided by SARSEF
This poster also won these other awards at SARSEF:

Stockholm Water Environment Federation Certificate

U o f A Community Connections Gift - Certificate \$50, SciEnTeK-12 Foundation 3rd Place

Empire High School: **Luke Spence**

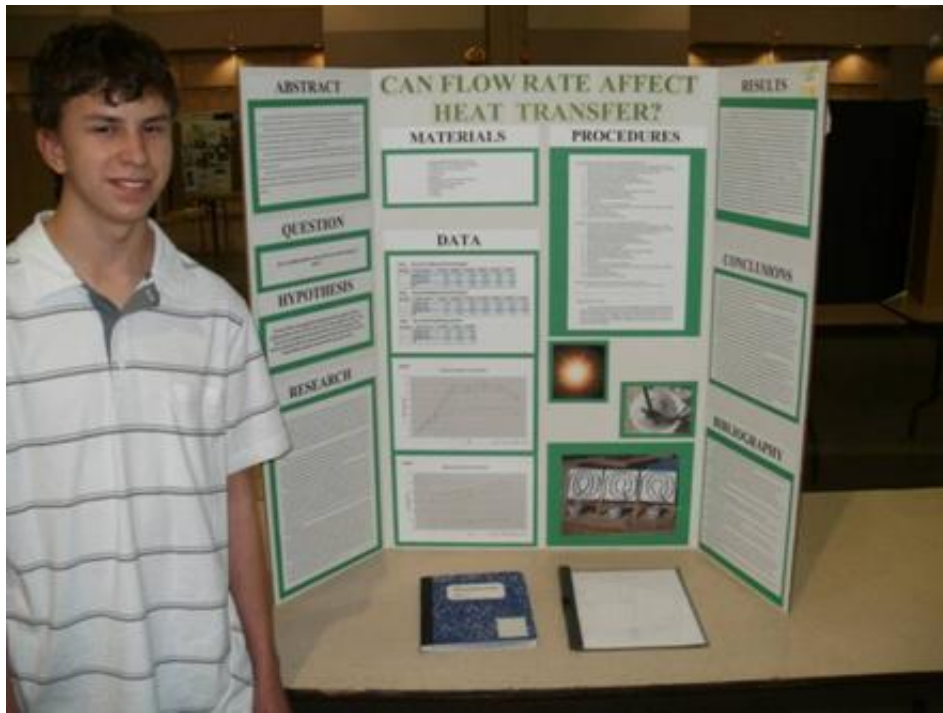
Arizona Hydrological Society High School Most Creative-Awarded \$75.00

Project Title: "The Effects of Flow Rate on Heat Transfer"

Teacher: Dr Frank

This poster also won these other awards at SARSEF:

Tucson Electric Power Check, RICOH Award Certificate, Texas Instruments 3-HM Calculator, Pima Co Regional Wastewater Reclamation Dept 1st Place - Plaque, SciEnTeK-12 Foundation 1st Place

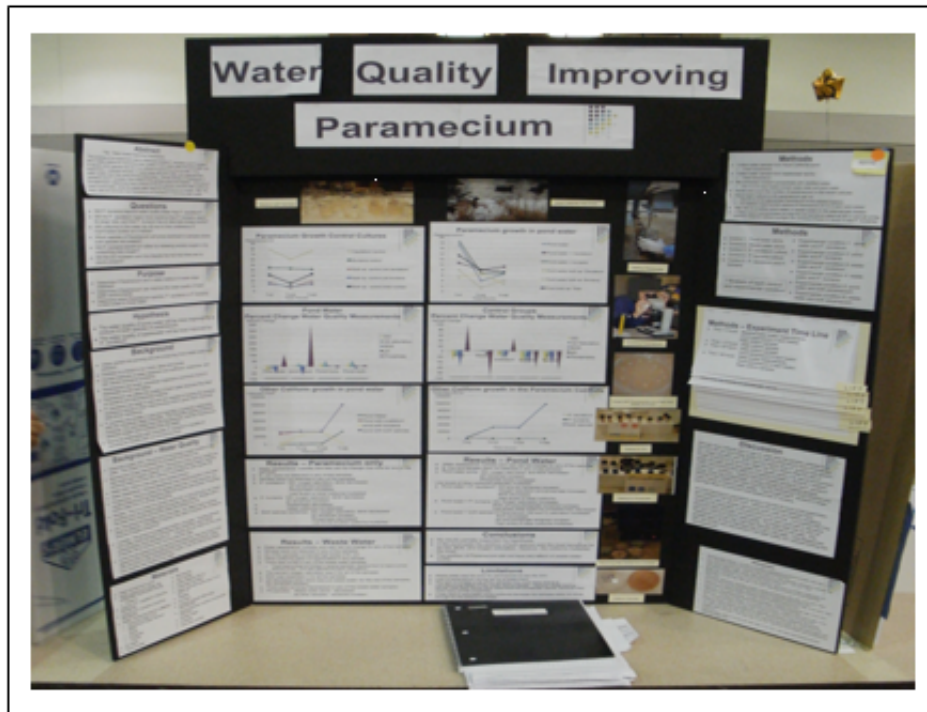


Tucson Hebrew Academy: **Ethan Manninen**

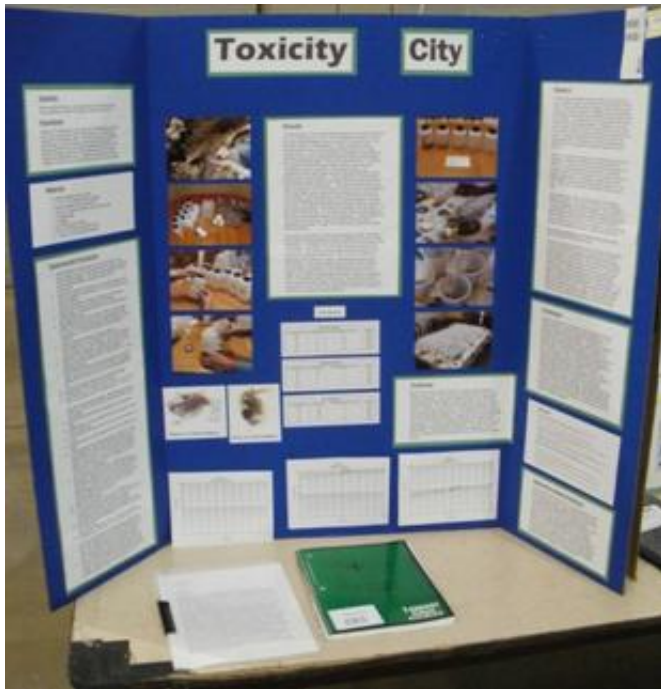
Arizona Hydrological Society 8th Grade 1st Place-awarded \$60

Project Title: "Water Quality Improving Paramecium"

Teacher: Jennifer Mattes



This poster also won these other awards at SARSEF: SciEnTeK-12 Foundation 3rd Place, Texas Instruments 2nd Place - Calculator, Pima Co Regional Wastewater Reclamation Dept 2nd Place – Plaque



Desert Sky Middle School: **Celina Pargas**

Arizona Hydrological Society 7th Grade 1st Place-awarded \$60

Project Title: "Toxicity City"

Teacher: Howell / Wauer

This poster also won these other awards at SARSEF: SciEnTeK-12 Foundation 2nd Place, Broadcom Masters Certificate, U o f A Community Connections Gift - Certificate \$50

Tucson Hebrew Academy: **Maxim Quint**

Arizona Hydrological Society 6th Grade 1st Place-awarded \$50

Project Title: "H2o Is It Good To Go (in Your Mouth)?"

Teacher: Jennifer Mattes

Richard B Wilson Middle School: **Hanna Stephens**

Arizona Hydrological Society 6th Grade Most Creative-awarded \$30

Project Title: "Winter Wonderland"

Teacher: Teresa Fritton

Castlehill Country Day School: **Mariana Lemmen-Meyer**

Arizona Hydrological Society 5th Grade Most Creative-awarded \$25

Project Title: "Desalinate Using Solar Power"

Teacher: Pamela Tinley

This poster also won these other awards at SARSEF:

SciEnTeK-12 Foundation 2nd Place, Tucson Electric Power Check

Lulu Walker Elementary School: **Claire Acke**

Arizona Hydrological Society 5th Grade 1st Place-awarded \$45

Project Title: "Tap Water Vs Bottled Water"

Teacher: no information provided by SARSEF

Academy Of Tucson Elementary School: **Anthony Cariseo**

Arizona Hydrological Society 4th Grade 1st Place-awarded \$40

Project Title: "Does Water Pressure Increase with Water Depth?"

Teacher: Mrs. Van Hise

Green Fields Country Day School: **Samantha Adams & Amelia Purwin**

Arizona Hydrological Society 3rd Grade 1st Place-awarded \$30

Project Title: "The Wet Situation"

Teacher: Mrs Moore

This poster also won these other awards at SARSEF:

SciEnTeK-12 Foundation 2nd Place

Booth-Fickett Math/science Magnet School: **Group or Class Project**

Arizona Hydrological Society 3rd Grade Class Award-\$60

Project Title: "Will An Ice Cube Melt Faster In Fresh Water Or Salt Water?"

Teacher: Therese McDonald

To see a complete list of all SARSEF award winners go to:

<http://www.scientek12.org/pageframe.asp?pg=74>

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WRRC EVENT: MAY 4 BROWN BAG - WATER STEWARDSHIP AT PEPSICO: LOOKING IN, OUT, AND BEYOND

Tuesday, 5/4/11 from 10:30 AM to 12:00 PM

NOTE: early start time

Location: WRRC, Sol Resnick Meeting Room, 350 N. Campbell Ave., Tucson, AZ

Event Summary

Speaker: Liese Dallbauman, Director, Water Stewardship, PepsiCO

PepsiCo relies on water in ways that go beyond its use as a major ingredient in our beverages. We use water throughout our food and beverage plants; our supply chain partners also depend on water to operate.

Many of PepsiCo's water stewardship initiatives are directly linked to the four-stage ReCon (Resource Conservation) program, which is based on understanding energy and water use at the plant level and beyond. In addition to being implemented across PepsiCo's international business units, the program has been shared with key suppliers.

Beyond ReCon, we partner with organizations with expertise in providing safe water and sanitation to underserved communities in countries around the world.

Examples of our ongoing water stewardship efforts – in our operations, with our suppliers, and in the community -- will be provided.

Note: WRRRC Spring 2011 AWR newsletter is posted at:

<http://www.ag.arizona.edu/azwater/awr/awr-pdfs/2011-Spring-awr-newsletter.pdf>

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FLAGSTAFF CHAPTER NEWS

Next Flagstaff Chapter/2011 Symposium Planning Meeting. Please contact [Brad Hill](#) or [Dana Downs-Heimes](#) for additional information.

Date: May 25, 2011

Time: 6:00

Location: Peabody Energy
3001 W. Shamrell Blvd., Suite 110
Flagstaff, AZ 86001

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HYDRO-NEWS

ANNUAL SPRING SME MEETING HOSTED BY QUADRAFNX



Annual Spring Meeting – Arizona SME

Hosted by

QuadraFNX – Carlota Copper Company

Please join the Arizona Society for Mining, Metallurgy, and Exploration for the Annual Spring Meeting at the Arizona SME Conference hosted by QuadraFNX – Carlota Copper Company on **Saturday, May 7, 2011** at the Freeport-McMoran Training Center, Cobre Valley Plaza, 2250 E Highway 60 (@ HWY 188 turnoff to Lake Roosevelt), Globe Arizona, 85501.

Presentations: 9:00 am – 11:00 am

Lunch Served: 11:30 am – 12:30 pm

Mine Tour: 1:00 pm – 3:00 pm

Transportation for the tour will be provided.

NOTE: The Mine Tour of Carlota will be on a limited First Come, First Served basis, using the date of e-mail RSVP response as the criteria.

The Technical Presentations will be limited to: 125

The Mine Tour will be limited to: 90

Please RSVP to SME.Carlota@quadrafnx.com

with the following information:

- Name
- Company or Affiliation
- Attend Entire Session *or*
- Attend Technical Presentations

*Note: **Please bring your own PPE (hardhat and safety glasses).** Steel toed shoes are preferred but close-toed shoes with a good tread are required at a minimum for the mine tour. Please no shorts or tanktops for the tour.*

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ARIZONA GEOLOGICAL SURVEY – NEWS RELEASE APRIL 29, 2011

Breccia-pipe uranium mining in northern Arizona and potential impact on uranium concentrations of Colorado River water

Abstract & Report @ http://repository.azgs.az.gov/uri_gin/azgs/dlio/1000

Contact: Michael Conway Michael.conway@azgs.az.gov 520.209.4146

A new study by the Arizona Geological Survey (AZGS) shows that potential accidental release of uranium to the Colorado River due to a mining-related accident in the Grand Canyon region would cause little change to the large annual flux of dissolved uranium that is carried naturally by the river.

In July 2009, U.S. Secretary of the Interior Ken Salazar called for a two-year withdrawal of nearly one-million Federal acres from exploration and new mining claims in the Grand Canyon region in response to concerns about the potential environmental impact of uranium mining. As part of the withdrawal process, the U.S. Bureau of Land Management, working in cooperation with federal, state, county and tribal agencies, including the AZGS, released on 17 February 2011, a Draft Environmental Impact Statement (DEIS). The DEIS identified increases in uranium concentration in water due to mining-related activity and subsequent impact on downstream water quality as a “relevant issue for detailed analysis”.

To examine one potential impact of uranium mining in the Grand Canyon region on uranium levels in Colorado River water, Dr. Jon Spencer (AZGS Senior Geologist) and Dr. Karen Wenrich (Consulting Geologist) posed a hypothetical, worst-case, scenario involving an accidental spill of the entire contents of an ore truck hauling 30 metric tons (66,000 pounds) of uranium ore containing one percent uranium (ore grades in northern Arizona are typically somewhat lower), followed by flash-flood transport and dissolution of all spilled uranium into the Colorado River. In this scenario, the ore is pulverized and dissolved within a single year, releasing 300 kg of uranium directly into river waters.

The result: uranium concentration of Colorado River waters would increase from 4.00 to 4.02 ppb (parts per billion by mass); an increase of just one half of one percent that would be masked by natural uranium-concentration variations as determined by measurements reported in a recent U.S. Geological Survey study. Furthermore, the uranium content of Colorado River waters would remain well below the 30 ppb Maximum Contaminant Level set by the Environmental Protection Agency (EPA) for safe drinking water.

The small change in dissolved uranium content of Colorado River waters as a result of this hypothetical accident is due to the very large annual volume of river water that passes through the Grand Canyon and the approximately 60 metric tons of dissolved uranium that is naturally carried by the river each year.

Citation: Spencer, J.E. and Wenrich, K, 2011, [Breccia-pipe uranium mining in the Grand Canyon region and implications for uranium levels in Colorado River water](#). Arizona Geological Survey OFR-11-04, 13 p.

BLM's Proposed Mineral Withdrawal Near Grand Canyon Draft Environmental Impact Statement
<http://www.blm.gov/az/st/en/prog/mining/timeout/deis.html>

Contact: Michael Conway Michael.conway@azgs.az.gov 520.209.4146

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ARIZONA WATER DRAMAS MARK ENGINEER'S 42-YEAR CAREER

by **Shaun McKinnon** - Apr. 18, 2011 12:00 AM
The Arizona Republic

Sitting in a cramped conference room, hundreds of miles from where water was sloshing near the top of Glen Canyon Dam, a government engineer named Larry Dozier was trying to reassure the governor of Arizona that the dam could contain the water and the Colorado River would not overflow its banks downstream.

Except he couldn't tell him exactly why, not in a room filled with television cameras.

Dozier recently had moved to Boulder City, Nev., to work for the U.S. Bureau of Reclamation as it prepared for the opening of the Central Arizona Project Canal. Two years later, he would join CAP, where he would log nearly 26 years working on Arizona water issues. Earlier this month, he retired from his post as CAP's deputy [general manager](#) and from a 42-year career in Western water.

But on that day, in that conference room, he had to help Gov. Bruce Babbitt decide whether to call out the National Guard to evacuate communities along the lower river in case the bureau had to release more water from Lake Powell and Lake Mead, the two huge reservoirs on Arizona's northern border.

It was the spring of 1983, and the river was swollen with runoff from a series of unexpected storms and the sudden rush of melting snow from the Rocky Mountains. The two reservoirs were nearing their high-water marks.

Read more: <http://www.azcentral.com/news/articles/2011/04/18/20110418larry-dozier-storyteller.html#ixzz1KnKel0A9>

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REPORT: CLIMATE CHANGE TO WORSE WESTERN WATER WOES

Apr. 25, 2011 12:52 PM
Associated Press

WASHINGTON - A new government report says already scarce water supplies in the Western [United States](#) are likely to dwindle further as a result of climate change, exacerbating problems for millions of water users in the West.

The Interior Department report says annual flows in three prominent river basins - the Colorado, Rio Grande and San Joaquin - could decline by as much 8 to 14 percent over the next four decades. The three rivers provide water to eight states.

The declining water supply comes as the West and Southwest, already among the fastest-growing parts of the country, continue to gain population.

Interior Secretary Ken Salazar called water the region's "lifeblood" and said small changes in snowpack and rainfall levels could have a major effect on tens of millions of people.

Read more: <http://www.azcentral.com/news/articles/2011/04/25/20110425western-water-problems-climate.html#ixzz1KnL48mz7>

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MESA TWEAKS WATER-RATE PROPOSAL

City wants to reduce gap between bills, service costs

by **Gary Nelson** - Apr. 22, 2011 11:51 AM
The Arizona Republic

This fiscal year, it costs Mesa's water utility an average of \$67.46 a month per customer to provide service.

That includes direct costs such as personnel, chemicals and everything else it takes to keep

the water flowing. It also includes about \$12.50 to pay off the bonds that bought the treatment plants, pipes and other infrastructure that brings water to each home.

And it includes \$29.08 that is transferred from the water department to the city's general fund to help pay for police, fire and other services required by every home in Mesa.

Regarding that general-fund transfer, City Council members will tell you it is a major source of city funding in lieu of the primary property tax that voters soundly rejected five years ago.

When people accuse the city of using water rates as a "back door" tax, Mayor Scott Smith said, he tells them they're wrong.

"Right through the front door," he said, with no apologies for needing to somehow pay for government services.

But while it costs \$67.46 per customer to provide the service, the average Mesa water customer is paying only \$36.41 a month.

Closing that gap without administering a major financial shock to Mesa residents was a major topic of Thursday morning's City Council study session.

Read more: <http://www.azcentral.com/community/mesa/articles/2011/04/22/20110422mesa-water-rate-proposal-tweak.html#ixzz1KnMAveg8>

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SEATTLE URBAN BUILDINGS UNPLUG FROM WATER GRID

by **Phuong Le** - Apr. 24, 2011 01:46 PM
Associated Press

SEATTLE - In one of Seattle's most urban neighborhoods, a small elementary school is trying to wean itself off the city's water grid.

The classroom toilet composts and treats waste on site rather than flushing it into city sewer pipes. Water washed down sinks doesn't flow into storm drains but recirculates to a 14-foot high wall filled with plants, which will eventually soak it all up. For now, excess flows through the wall.

Plenty of "green" buildings strive to generate as much energy as they use, but Bertschi School's new science building is one of dozens nationwide taking it a step further. They're attempting to unplug from the municipal water and sewer system to collect, recycle and reuse water and wastewater on site, a concept often referred to as net zero water.

The U.S. Army has a goal for several installations to reach zero water, energy and waste use, and this week it designated Fort Riley in Kansas, Camp Rilea in Oregon and Joint Base Lewis-McChord in Washington, among others, to be net zero water. It also named other installations to strive for net zero use for energy and waste.

Read more: <http://www.azcentral.com/news/articles/2011/04/24/20110424seattle-urban-buildings-unplug-water-grid-ON.html#ixzz1KnMxB0Yf>

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LAKE MEAD TO RECEIVE EXTRA WATER FROM FEDS

by **Shaun McKinnon** - Apr. 9, 2011 12:00 AM

The federal government will release enough extra water into drought-stricken Lake Mead in the coming months to avoid shortages on the lower Colorado River for as long as five years.

The U.S. Bureau of Reclamation said Friday that runoff from snow in the mountains of Wyoming and Colorado is expected to increase [storage](#) on the river enough to adjust water levels at two key reservoirs and avert drought restrictions.

The decision comes just six months after Lake Mead dropped to within 7 feet of a level that would have triggered drought restrictions. Under those restrictions, Arizona would have lost about 11 percent of its allocation for at least one year.

Arizona officials had prepared contingency plans that included forfeiting a small amount of the state's allocation as a hedge against larger losses. Those plans are no longer necessary.

"We still want to be somewhat cautious," said Tom McCann, assistant [general manager](#) of the Central Arizona Project, which delivers Colorado River water to Phoenix and Tucson. "We've been in drought for 11 years. We've had a good year, and that's very helpful. It pushes us further away from shortages, but it doesn't mean the drought is over."

Read more: <http://www.azcentral.com/news/articles/2011/04/09/20110409water-mead0409.html#ixzz1KnNatCbd>

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ARIZONA CONFERENCE TO FOCUS ON OCEAN WATER FOR SOUTHWEST

Apr. 22, 2011 06:39 AM
Associated Press

YUMA - A [University of Arizona](#) research center is hosting a conference Tuesday and Wednesday that focuses on whether desalination can help the Southwest's limited water supply.

The university's Water Resources Research Center says experts from across the Southwest and as far away as Israel will be at the conference to discuss the challenges and effects of using desalination to help manage water resources.

The center says desalination of coastal sea water and poor [quality](#) inland water offers an endless means to fresh and clean water to augment limited supplies in the Southwest.

But, the center wonders, is it really the answer?

Experts question the benefits and costs of desalination and wonder what the barriers are.

The conference will be held at the Hilton [Garden](#) Inn in Yuma.

Read more: <http://www.azcentral.com/news/articles/2011/04/22/20110422arizona-ocean-water-conference.html#ixzz1KnOGkAqf>

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LAKE MEAD REPLENISHED BY SNOWFALL

by **Shaun McKinnon** - Apr. 19, 2011 12:00 AM
The Arizona Republic

Six months ago, [Lake](#) Mead was turning to dust, its water levels receding so rapidly that marina operators were moving boat docks weekly.

The reservoir, victim of a 10-year drought on the Colorado River, reached a historic low in November, and water users in Arizona and Nevada braced for shortages within the year.

[Low water levels at Lake Mead](#)

Then last week, the federal agency that operates the reservoir declared that enough water would flow down the river this spring - the most in over a decade - to raise water levels above the shortage triggers and ease the threat of rationing through at least 2016.

It wasn't enough water to end the drought.



David Kadlubowski/The Arizona Republic

Lake Mead will still finish the year about 100 feet below its high-water mark and still less than half-full. But it was enough to satisfy the terms of a 2007 river-management plan that gives the federal government the leeway it needs to better stretch water supplies on an already overallocated river.

"This year was key," said Scott Huntley, spokesman for the Southern Nevada Water Authority in Las Vegas.

"It could have gone one of two ways: either with the lake gaining water or, had we had another bad year, with shortages. What

we're seeing now is definitely good news."

Read more: <http://www.azcentral.com/news/articles/2011/04/18/20110418lake-mead-replenished-by-snowfall.html#ixzz1KnPmS8XW>

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WATERBLOGGED BY SHAUN MCKINNON, ARIZONA REPUBLIC

(CLICK ON TITLES FOR LINK TO FULL COLUMN)

[*Cover the canals with solar panels?*](#)

The **New York Times** wrote Wednesday about a [movement in California](#) to float photovoltaic [solar panels](#) on ponds, small lakes and reservoirs. According to [the story](#):

The solar panel aqua farms have drawn interest from municipal water agencies, farmers and mining companies enticed by the prospect of finding a new use for — and new revenue from — their liquid assets, solar executives said.

Land is expensive, the thinking goes, so why not make use of all those small bodies of water that just sit there in the sun? The idea is starting to gain traction in other countries as developers cast about for locations:

Chris Robine, [SPG Solar](#)'s chief executive, said he had heard from potential customers as far away as India, Australia and the Middle East. When your land is precious, he said, "There's a great benefit in that you have clean power coming from solar, and it doesn't take

up resources for farming or mining.”

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[Wilderness bills weaken protection](#)

Wilderness advocates say congressional Republicans are trying to remove protections from millions of acres of public lands, mainly in the West.

Two recent actions have drawn angry responses from conservation groups:

- The budget resolution that passed last week included a policy rider that would block the Interior Department from spending any money to implement a new [wild lands initiative](#) created by Interior Secretary **Ken Salazar** earlier this year. The initiative would allow the government to designate areas as "wild lands" and manage them as wilderness areas, restricting many uses. Critics said the move was an attempt to circumvent congressional involvement in designating wilderness areas.
- Rep. **Kevin McCarthy**, R-Calif., introduced a bill last week with nearly two dozen co-sponsors that would remove existing protections from millions of acres of wilderness study areas and roadless national forest lands. It would also prohibit future administrations from protecting some new wilderness areas.

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[UPDATED: Runoff season short, not so sweet](#)

If you're waiting for the state's rivers and streams to gush with spring snowmelt as temperatures rise, you're a little late. Sorry.

The runoff season is pretty much done on the **Salt** and **Verde** watersheds, according to **Charlie Ester**, water resources manager for **Salt River Project**, and it wasn't pretty. When the final numbers are added up in early June, the totals will likely fall in the range of 33 to 35 percent of the long-term median.

Ester said he expects the season will end as the 12th- or 13th-driest in more than a century of record-keeping (assuming Arizona isn't hit by a series of spring storms wet enough to move the needle).

The [Natural Resources Conservation Service](#) confirmed Ester's assessment in its latest snow survey, released Tuesday.



“Our April 1 survey shows that most snow measurement sites have already melted out, which is about a month earlier than normal,” said Dino DeSimone, state water supply specialist for NRCS. “What snow remains is limited to the uppermost reaches of the basins.”



NRCS monitors snowpack and water at 44 sites across the state. Snowpack on April 1 ranged from 5 percent of the 30-year average on the Salt River and 6 percent on the Gila to 16 percent on the Little Colorado and 47 percent on the Verde.

A strong **La Niña** steered storms away from Arizona for much of the winter. Although December sloshed off to a deceptively wet start, conditions turned dry in January and recovered only slightly in February. March precip was spotty at best, ranging

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[Desalter test ends; what's next?](#)

The [Yuma desalter](#) has gone quiet again after a year-long test of its abilities to squeeze more water from the over-worked **Colorado River**.

The **Bureau of Reclamation** and other water agencies will review the test, but it's unlikely that the plant will operate on a regular schedule any time soon. The costs are still high and questions remain about the effects on a fragile marsh 90 miles south.

But for now, the bureau and the three water providers that helped pay for the test say they are satisfied with the results and believe the plant could play a role in securing future water supplies.



"Water recycling and conservation are important tools to stretch our precious Colorado River water supplies," said **David Modeer**, general manager of the **Central Arizona Project**. He said CAP is hopeful the bureau can use the information collected during the test to operate the plant again in the future.

For the test, the bureau [ran the plant](#) at about one-third capacity, treating salt- and mineral-laden runoff from nearby farm fields. About 30,000 acre-feet of the water was recycled and delivered to Mexico as part of that country's annual Colorado River allocation. That allowed the bureau to keep the same amount of water in **Lake Mead**, whose water levels are used to determine drought restrictions.

For associated links and other timely water and environmental blogs on Shaun McKinnon's Arizona Republic site – **Waterblogged** visit

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

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JOB NOTICES

EXECUTIVE DIRECTOR

Western States Project (WSP) has an exciting opportunity for someone to join our team in carrying out our ambitious agenda aimed at increasing the effectiveness of environmental enforcement efforts across the Western US and Canada. This is a rare opportunity to join an action-oriented group of individuals who are firmly committed to environmental protection. If you have experience providing training courses and conferences, securing grants, managing projects, and overseeing a budget - this may be just the job for you! For more information on this opportunity and to apply, please visit azstatejobs.gov.

The Arizona Geological Survey is seeking student interns for 5 positions:

Tucson based:

- Web Designer/Graphic Artist
- GIS Analyst
- Hydrologic Informatics

Phoenix based:

- Mineral Resources Data Curator/Metadata Librarian
- Mineral Resource Data Digitizer

The positions are posted on the AZGS web site - <http://www.azgs.az.gov/employment.shtml>, as well as the state jobs site.

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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/>

Membership may be renewed by credit card through the AHS website or by mailing a check to the Arizona Hydrological Society, P.O. Box 1882, Higley, AZ 85236. Dues remain at \$45.00 year for regular membership and \$15.00 for students. Please remember that your 2011 membership was included in the 2010 Symposium registration fee!
