MAY 2010 NEWSLETTER

CONTENTS

VIEWPOINT: SURVIVORS

Walking around the Arizona Department of Water Resources these days gives one an eerie feeling. So many empty cubicles lend the air of a mortuary to the place, and only occasionally does someone emerge from the gloom, ghost-like, to inquire what you might

be about.

Most everyone has now heard that ADWR suffered a massive Reduction in Force in early April, losing 60 people. It shows. This doesn't mean that ADWR is dead, as the work continues on regulatory programs and several initiatives. But the agency has been reorganized to reflect the new reality of reduced resources. Hydrologists have been added to the staff for several regulatory programs, such as recharge and assured/adequate water supply, where their more direct input may influence programs to move in a more technical direction. The Active Management Area offices have disappeared, with their functions spread over other groups. Hydrology now has three sub-groups: Field Services, Groundwater Modeling, and Regional Planning. New guidelines for hydrologic reports have been written. It's a brave new world for ADWR, and we shall see how well they meet the challenge.

With all the brouhaha over other legislation and state actions, what has happened at ADWR has gone on very much below the radar of most people. To so quietly cripple an agency concerned with water resources in a semi-arid state worries me. There have no articles in the newspapers, no tirades on talk radio, no breathless analytical pieces on television. Yet we all know that appropriate regulation of water resources is critical to the future of any desert state. The Groundwater Management Act and the Environmental Quality Act exist to secure our collective water future. As hydrologists and water resources professionals, we need to keep watch to insure that these tools don't disappear, that the public does not lose sight of the importance of water in the semi-arid Southwest.

I sympathize with the many people who got laid off at ADWR, but I think that agency has a chance to re-engineer itself to do a more efficient job with the staff at hand. I regret that the RIF was done without significant attention being paid to the implications. We need to bring to the light of day what is happening to the agencies charged with regulating water, in order to better protect it.

Alan Dulaney,

AHS Corporate Board President, 2010

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GOVERNMENT GOINGS-ON

The Arizona Legislature is finally wrapping up the current session, and we can all breathe a sigh of relief. In terms of water-related legislation, no serious damage was done. Despite several attempts to manufacture some fairly stinky sausage, most of the bills that emerged were relatively good. The compromise deal on the Big Chino that was agreed upon by Salt River Project and various Prescott interests was signed, which is probably a good thing given that a recent court decision appeared to seriously weaken the sub-flow argument that was one of the major looming threats. The bills authorizing ADWR and ADEQ to set fees to help those agencies become self-funding appear to be headed for the governor's desk. ADEQ will not receive continuing authority to set fees, and will have to return to the Legislature to seek any further increases, but a one-time shot at increasing fees was granted; expect a big jump in fees. As noted earlier, ADWR was slashed down to $7 million from the General Fund, but ADEQ got no monies, zero, from the General Fund. Both agencies will need increased fees to continue operations, although ADEQ has various pots of Federal funding that will carry many programs.

House Bill 2661 creates a Statewide Water Augmentation Commission to look into water needs in each county for the next 50 and 100 years, plus storage and delivery obligations for SRP, CAP, CAGRD, and the Arizona Water Bank. The Commission is to develop recommendations for legislation on future water acquisitions, infrastructure, and financing, and could recommend changes in agency authorities to accomplish the goals of any new augmentation authority that might be created. ADWR will provide technical support, although I don't know who will be left to do it. This bill is headed for signature.

One of the most controversial water-related bills was House Bill 2617, which originally would have given the mining industry major powers over how Aquifer Protection Permits would be issued. The bill creates a Mining Advisory Council dominated by mining interests to look at regulatory issues that make opening new mines very difficult. Some of the worst features of the bill were watered down over the course of the session. Environmental groups and the tribes remain opposed to the overall direction of weakened regulation, predicting increased pollution of surface waters and hence groundwater. But this bill is also headed for passage, as Arizona needs the mines.

Once thought dead, a resolution from the Senate (SCR 1046) resurfaced that would declare that regulatory jurisdiction over intrastate waters belongs solely to Arizona. ADEQ Director Benjamin Grumbles has noted that this threatens ADEQ primacy in some fairly important regulatory programs. Hopefully this will once again be buried, but in the Arizona Legislature, you just can't keep a good vampire down.

Alan Dulaney,

AHS Corporate Board President, 2010

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2010 AHS-IAH ANNUAL HYDRO SYMPOSIUM UPDATE

The AHS Symposium Planning Committee met on April 21, 2010 at the Tucson offices of Clear Creek Associates. Items discussed included:

- **Abstract due date extended to May 23, 2010**
- Sponsorship or exhibitors materials available on web page
- Approximately 20 Technical session abstract presentations and two posters have been submitted to the committee.
- Other potential tech sessions include
    - Water for People
    - Regional Water Planning
    - Engineers without Borders
- Charles Hutchinson has been booked as a plenary speaker
- Workshop ideas
    - HEC-RAS surface flow modeling workshop
    - AQTESOLV for advanced users
    - WDC-OSHA refresher workshop on drilling fluids – MUD school
- Potential Field trips
    - Water related climate studies being done at the Biosphere II.

    - Cienega Creek field trip that will offer biology tilt as well as hydrology.
- Still need additional volunteers – can **YOU** help?

The next AHS Symposium Planning Committee meeting will be held on Wednesday May 26th, 2010 at 6:00 pm at the offices of SAHRA located on campus, 845 North Park Avenue Tucson, AZ 85719-4871. Please contact Shane Clark or Al Wynant for additional details.

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AHS ANNUAL SCHOLARSHIP APPLICATION DEADLINE EXTENDED!

The Arizona Hydrological Society (AHS) and the AHS Foundation will award three $2,000.00 student Scholarships in 2010. The purpose of this award is to encourage full-time students of hydrology, hydrogeology, or any other water-resource-related fields at any Arizona university or college to excel in their area of study. Any junior, senior or graduate student who fits this description can apply.

The application deadline has been extended to Friday, May 28, 2010. Complete applications must be received by 5 pm in order to be considered!

The scholarship will be awarded during the 2010 Annual AHS Symposium. It will be based on several criteria:

- Grade point average (based on at least two full-year courses)
- Strength of recommendation letters (at least one)
- Application letter describing the applicant's interests and career goals in hydrology and water resources
- Background in hydrology and water resources related activities (provided in the applicant's resume)*
- Degree of need (explaining the need and how the scholarship would help meet the need)

The application must include the following documents:

- An application letter
- Official transcripts (undergraduate and graduate if applicable)
- Confidential recommendation letters (at least one)

Click here to download a PDF of this announcement

Mail applications and direct all questions to:

Erin Young
Fluid Solutions
1055 Hano Trail
Flagstaff, AZ 86001
928-606-8422
mailto:eyoung@flusol.com

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ARIZONA HYDROLOGICAL SOCIETY FOUNDATION

The Arizona Hydrological Society Foundation (AHSF) was formed in 2008 to invest, safeguard, increase, and distribute funds that promote hydrology-related education. With funding from AHS and CAP, AHSF has already provided financial support for the AHS scholarships and internships, science fair prizes, and a teachers' workshop.

AHSF is a 501(c)(3) charitable nonprofit corporation under the Internal Revenue Code, and all donations to the Foundation are tax deductible as charitable contributions. Please support the AHSF in its important mission. Donations may be made to the general account, or to support the Flagstaff Chapter, Halpenny, and Bouwer internships, AHS scholarships, or the AHSF endowment. AHSF will be establishing a link from the AHS webpage for online donations. In the meantime, donations can be sent to:

AHSF
P.O. Box 65690
Tucson, AZ 85728

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CAP AWARD FOR WATER RESEARCH CALL FOR PAPERS

CAP Award for Water Research

First Place: $1,000
Second Place: $500
Deadline: June 1

Papers are accepted all year for the CAP Award for Water Research and are judged in June. Papers submitted for this award should focus specifically on water issues that affect Central and Southern Arizona and the Colorado River. Papers can focus on legal, economic, political, environmental, or water management issues, as well as any other issue that might be of interest to CAP or Arizona water users.

To apply, submit our online entry form.

For more information visit http://www.cap-az.com/public-information/water-research/ or contact:
Vicky Campo
Internal Communications Representative
Central Arizona Project
623-869-2176

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PHOENIX CHAPTER NEWS

April Dinner Meeting

Please join us Tuesday, May 11th at the El Penasco Mexican Kitchen in Tempe at Mill and Broadway to have a beverage, share business cards, and talk water.

Location:	El Penasco Mexican Kitchen 19 East Broadway Road Tempe, AZ 85282
Event:	Salt River Project (SRP) Reservoirs Update presented by Tim Skarupa, SRP
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!

April Dinner Meeting Summary

The Phoenix Chapter thanks Marvin Glotfelty for his great presentation, "Evaluation and Rehabilitation of Water Wells."

Well Rehabilitation and Evaluation:
Cost-Effective Methods and Considerations for Water Purveyors

In these economically challenging times, many municipalities and private water companies wrestle with the issue of whether or not it would be more cost-effective to mitigate water quality problems through the evaluation and modification of the water supply well, versus taking a more conventional approach such as wellhead treatment, blending, or drilling a new well. Rehabilitation (structural modification) of a water supply well is significantly less expensive than the alternatives, but for the well rehabilitation to be successful, the goal of the project (water quality improvement) must be accomplished in a technically sound and efficient manner. This presentation included discussions of several available techniques for conducting site-specific well evaluations, and also methodologies and pitfalls related to the structural modifications of water wells. A brief discussion of aquifer hydraulics was presented to set the stage for the items being addressed during the well evaluation process. Basic well evaluation techniques, such as video surveys and flow profiling analyses (both spinner log and dye tracer methods) were described. These analytical techniques generally enable the hydrogeologist to determine the groundwater production and water quality from discrete intervals of the well, under both pumping and non-pumping conditions. Once the site-specific well evaluation has characterized the water production and water quality problems, those problems can typically be addressed by structurally modifying the well. Several approaches to well rehabilitation were described, and case studies were presented from both Arizona and California. The track record of water quality improvement via well rehabilitation projects was also outlined, along with a discussion of the need for post-rehabilitation testing to define the new “baseline” conditions after the structural modification of the well has altered its unique

hydraulic characteristics.

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 made soon. 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.

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

- June 8th – June Dinner meeting - Maybe you? Contact Keith Ross if you're interested in speaking!
- July 13th – Monthly Dinner Meeting, Mike Fulton with an update on ADEQ outlook and programs.
- August and September – No regular dinner meetings. Please join us at the annual symposium in Tucson!
- September 1-4 – AHS Annual Hydro-Symposium with support from IAH at the Tucson Westin La Paloma.
- Oct-Dec Dinner meetings – How 'bout you? Contact Keith Ross if you're interested in speaking!

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ARIZONA SCIENCE AND ENGINEERING FAIR WATER PROJECT AWARDS

2010 Arizona Science and Engineering Fair

By Paul Plato

On March 24, 2010, the Arizona Hydrological Society, in cooperation with the Central Arizona Project, reviewed and presented awards to deserving hydrologic and water projects at the annual Arizona Science and Engineering Fair (http://azsef.asu.edu/). This marks the seventh straight year that AHS and CAP have teamed up to award prizes at the AzSEF fair, and AHS would like to thank Deanne Rietz of SWCA, Inc. and Matt Frailey of Clear Creek Associates who helped me judge projects at this years' event. Awards were made to the following projects, based upon merit:

Senior Division:

$200 1st Place to Kelsey Waite, for her project: *Determining the Location and Spreading of the Salt Water-Fresh water Interface in Wells Using Simple Resistance Measurements* Ms. Waite's project involved a network of inexpensive resistivity sensors which could be placed in a well to evaluate the salt-water/freshwater interface through analysis of the differences in resistance between sensors.

$50 for 2nd Place to Jenna Wild, for her project: *Ampicillin Resistant Bacteria in*

Wastewater Effluent
Ms. Wild's project involved an evaluation of wastewater for bacteria which have become resistant to ampicillin, a commonly prescribed antibiotic.

$50 for 2nd Place to Jonah Rucker, for his project: *Is It Possible to Predict Catastrophic Earthquakes by Using Short-Term Observation and Fractal Mathematics?*
Mr. Rucker's project involved a mathematical/statistical analysis of displacement of earthquakes and whether patterns were evident which could be used for predictive purposes.

Junior High Division:

$50 1st Place to Catrina Letterman, for her project: *The Earth's Miracle Water – The Water Cycle*
Ms. Letterman's project involved the removal of dissolved salts using distillation, and a comparison with the hydrologic cycle.

Honorable mention to Alexis O'Neil, for her project: *Rocky Secrets*
Ms. O'Neil's project evaluated the absorption and movement of oils into and through different types of rocks.

Honorable mention to Adrianna Nicolay, for her project: *Diatreme or Volcanic Plug?*
Ms. Nicolay's project involved an evaluation of the nature of Shiprock, a mountain of volcanic origin in the northwest corner of New Mexico.

Elementary Division:

$50 for 1st Place to Dylan Shamy, for his project: *Pumping Power – "Oil Cleanup"*
Mr. Shamy's project included an innovative use of a spray bottle pump to evaluate methods of cleaning up oils.

$50 for 1st Place to Logan Oliver, for his project: *Geothermal Heating and Cooling – Does it Work?*
Mr. Oliver's project involved an evaluation of changes in temperature with depth below ground, in relation to air temperatures.

Honorable Mention to Cooper Payne, for his project: *Oceans Conveyor Belt*
Mr. Payne's project included an evaluation of the major ocean currents.

Honorable Mention to Christie Shepard and Angelica Moreno, for their project: *Lead Alert*
Ms. Shepard and Ms. Moreno evaluated lead content of soils at their school to determine if high levels were present.

Honorable Mention to Mariel Letterman, for her project: *The Earth's Miracle Water – The Water Cycle*
Ms. Letterman's project involved the removal of dissolved salts using distillation. This project was also separately presented by her sister in the Junior High Division.

Congratulations to all the winners this year, the projects were very inspiring. And

congratulations to all the aspiring future scientists who I talked with this year, it was, as always, a rewarding and fun experience.

HERMAN BOUWER INTERN SCHOLARSHIP

Matthew Monte has been selected for the 2010 Herman Bouwer Intern Scholarship. This year marks the 11th year for the Herman Bouwer Internship Program, which gives students enrolled in a hydrology-related discipline at any Arizona college or university the opportunity to gain practical experience in the multidisciplinary field of hydrology and water resources. This scholarship acknowledges the extensive contributions of Dr. Bouwer to the science of hydrology and to the AHS.

Check out the AHS website if you would like more information about the Herman Bouwer Intern Scholarship Program and to download forms or contact Steve Acquafredda at acqua@dswa.net.

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TUCSON CHAPTER NEWS

April Meeting Announcement

The next Tucson chapter meeting will be held on Tuesday, May 11th.

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

Event: **DESALINATION OF BRACKISH GROUNDWATER IN ARIZONA** by Edwin McGavock, Hydrologist, Montgomery & Associates

Date: Tuesday, May 11, 2010

Time: Social half-hour begins at 6:00 pm;
Talk begins at 6:30
Food and beverages provided

DESALINATION OF BRACKISH GROUNDWATER IN ARIZONA

Edwin H. McGavock and Chuck C. Cullom

Recognizing that desalination of brackish groundwater will be an integral part of Arizona's future water supply, the Central Arizona Water Conservation District has embarked on a program to identify and prioritize Arizona basins where desalination is most feasible. Brackish groundwater is defined for this study as containing 1,000 to 10,000 milligrams per liter (mg/l) total dissolved solids (TDS). Based on this definition, more than 600,000,000 acre-feet of brackish groundwater is estimated to be stored in Arizona aquifers, generally at depths of less than 1,200 feet. While this volume seems large, it is

still modest in comparison to the 1 billion acre-feet of brackish groundwater estimated to be stored in New Mexico's aquifers (New Mexico State Engineer Report, 2004).

Brackish groundwater is found throughout Arizona in a variety of hydrogeologic environments (Daniel 1981). Evaporite deposits are responsible for most salinity in northern Arizona aquifers, and agricultural irrigation is primarily responsible for brackish groundwater in southern Arizona. Evaporites are also a factor in southern Arizona basins, such as Safford, Picacho, and the West Salt River. Although dozens of brackish groundwater areas exist in Arizona, results of Phase I investigations indicate that only five or six have sufficient volume in storage to be of near-term interest for development of desalination projects.

To view the complete extended abstract click here.

April 2010 Meeting Summary

- Write up provided by Shane T Clark, Tucson Chapter Secretary (2010): U.A Watershed Hydrology

Building a Global Data Network in the Geosciences

On April 14th at 6:20 pm, the Tucson Chapter hosted a special guest lecture by Lee Allison, State Geologist and Director of the Arizona Geological Survey. This talk was attended by 9 people (4 students, 5 working professionals) and was held at the Office of Montgomery & Associates 1550 E Prince Rd. Tucson, AZ 85719

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

As the information age moves into Web 2.0 and 3.0 technologies, the demands for access to digital data that can be easily integrated from heterogeneous sources is becoming more and more vital. Websites often define the organization and provide its users with selectively accessible information. The Arizona Geological Survey has spearheaded a national data network project to foster collaborative data sharing. The Geoscience Information Network's (GIN) main goal is to provide access to data from multitudes of distributed computer sources and therefore provide its users with seamless access in an integrated format. The GIN network operates by four main fundamentals: Distributed, Web-based, Interoperable, and Open Source.

Distributed: instead of a central data base, data will be housed and accessed through the data owner's server. Each contributing data source will have control over what they share.

Web-based: the interactive network occurs via web base operations

Interoperable: ability of diverse systems to exchange information seamlessly, in real time

Open source: software and systems operations will be free, open-source, and not proprietary.

Data integration is a value added service that the GIN will provide giving open access to all kinds of services. Examples include MS SCISCOPE, a free web portal that brings heterogeneous spatial data to the user's desktop for easy use by any software, and National Geothermal Data System (NGDS). NGDS is powered by GIN to deploy and populate the national data system with state-specific data for exploration and development of geothermal energy. NGDS provides its users with: distributed data

sources, network communication and controls, ontology and vocabulary references, data access and exchange portals.

The GIN-powered NGDS provides easy access of digital data and is setting up a network of regional server hubs nationally. These hubs are responsible for helping to maintain the data availability with the Arizona Geological Survey carrying the main responsibility for managerial, technical/IT, science, and holds financial responsibility for deploying nodes in every state to create the network. Additionally GIN is collaborating with OneGeology-Europe, a comparable network of 21 nations in Europe, to establish a cooperative trade of practices and protocols, and managerial competencies.

The partner ESRI has provided the free integrative ArcGIS Explorer software where chosen maps, data, and global aerial photographic images can be viewed. Lee provided an Arizona virtual flyover where he demonstrated the GIN capabilities. The virtual tour allowed us views of multiple localities in Arizona: Geothermal hotspots/ wells, Desert Sweet Shrimp aquaculture location in Gila Bend, Wilcox Greenhouses, Alpine deep drilling locale, Picacho basin ground water salinities and salt caverns, Pinal County and Chandler Earth fissure sites, the Santa Rita proposed Rosemont mine layout, the abandoned mine network of roughly 10,000 old mines, Potential Potash locations, and a detailed (vegetation, water availability, and slope) corridor of the San Pedro River. The elaborate virtual tour included crisp, high-quality 3D maps with detailed vegetation, topographic, land ownership and geological maps. The software allowed for independent viewing of selected maps or an integrated overview including any selected layers mentioned above. The software possesses the ability to provide users with overlay transparent maps to visualize where managerial and ownership boundaries occur.

The AHS Tucson Chapter extends a very warm thanks to Lee Allison for his informative presentation!

Additionally The Tucson Chapter would like to thank Montgomery & Associates for providing the space so that these monthly talks can be held.

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LEONARD HALPENNY INTERN SCHOLARSHIP

Application interviews are in the works – Please look for an announcement of winner in the coming weeks**!**

Leonard Halpenny Intern Scholarship Committee
Marla Odom (modom@elmontgomery.com)
Montgomery & Associates
1550 E. Prince Road
Tucson, AZ 85711
Telephone: (520) 881-4912
Fax: (520) 881-1609

WRRC BROWN BAG SEMINARS: APRIL 2010

WRRC Event: Water Crisis in Mediterranean Spain: Water Policy as a Gospel of Redemption

Speaker: Gaspar Mairal, Associate Professor, Social Anthropology, University of Zaragoza, Spain, Visiting Scholar, UA Bureau of Applied Research in Anthropology (BARA)

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

Date: May 11, 2010

Time: 12:00 to 2:30 PM

Professor Mairal will discuss how Spanish water policy developed in the 20th century following a model known as "Política Hidráulica," promoted in Spain at the end of 19th Century by Joaquín Costa, a jurist and politician. He will link the current water debates in Spain with the historical record, and compare Spanish policy with the water policy of the American West as influenced by John Wesley Powell.

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

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FLAGSTAFF CHAPTER NEWS

May Chapter Meeting Announcement:

Location: Casa Bonita
1551 South Milton Road
Flagstaff, AZ 86001

Date: Wednesday, May 19, 2010

Time: 6:00 PM
Food and beverages provided

May 2010 Meeting Summary- Flagstaff

The Flagstaff Chapter is continuing to focus on summer field trip planning and the 2011 symposium.

Save the Date! Flagstaff Summer Field Trip – Saturday July 10, 2010

- Tentative title "**Hops, Stops, Lakes and a Dam BBQ, 2010: Hydrology, Geology, Forest and Watershed Health of Mormon Lake and Lake Mary Area"**
- Open for members and non-members, and there will be a two-tier fee.
- We will be offering a dinner option after the field trip, and there will be free camping available.
- Please send tentative RSVP of interest so we can get an idea of numbers.
- Cost TBA. Field Trip cost will be all inclusive, including lunch, beverages, and transportation.
- Option to stay for an all inclusive dinner as well.

- We will offer options for free camping, there are campgrounds in the area with facilities, or you can rent a cabin at Mormon Lake. Make reservations for a Mormon Lake Lodge cabin NOW. 928-354-2227. Cabins run $50 to $185 per night.
- Option to attend the AHS July Corporate Board Meeting!

We will get the details finalized ASAP. This is going to be a GREAT field trip and a GREAT time! Enjoy a really interesting field trip with your hydrology buddies, drink refreshing beverages, arm wave with the best of them, and relax under a big sky. Horseshoe teams?

Bring your family and make a weekend of it! Family members are encouraged to attend the field trip and dinner. However, if they don't quite appreciate a good ol' field trip, Mormon Lake Lodge offers a bunch of activities such as horseback riding, ATV and canoe rentals, and a sand volleyball court. There are endless forest service roads and trails for off road vehicles, horses, and hiking from the Lodge or from the camping options. We really hope all can join us!

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FLAGSTAFF CHAPTER 2010 INTERN SCHOLARSHIP

We are happy to report that we had five impressive applicants for the Intern Scholarship, and Mary Carson, NAU Geology, has enthusiastically accepted the award. Please direct any questions regarding the Flagstaff Intern Scholarship to Erin Young at eyoung@flusol.com.

AHS Flagstaff Intern Scholarship Program
Erin Young
Phone: (928) 606-8422
E-mail: eyoung@flusol.com

HYDRO-NEWS

CONTRASTING VIEWS ON WHAT TO DO ABOUT DWINDLING WATER

Tony Davis Arizona Daily Star | Posted: Tuesday, March 23, 2010 12:00 am

Philip Fradkin, now 75, has written 11 books, shared in a Pulitzer Prize for coverage of Los Angeles' Watts riots, spent six months covering the Vietnam War and was a pioneering environmental reporter.

But he's best known for "A River No More," a 1981 book about the Colorado River. It was a history and a warning about the source of Tucson's drinking water and the West's lifeblood.

He predicted that the river could run out of water by 2000. That didn't happen, but he was on target in his concern that the river's supplies were stretched too far among too many people.

Today, there is a possibility of near-term shortages for the Central Arizona Project - which top state water officials said in the 1980s wouldn't happen for at least another 20 years - shortages that could be worsened by climate change.

Fradkin was interviewed while in Tucson recently at the Tucson Festival of Books.

http://azstarnet.com/news/science/environment/article_584c200b-2ae9-5006-ac5e-b6790ce930f2.html

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MELTING SNOW FROM ARIZONA'S WINTER GETS RIVERS ROLLING AGAIN

by **Shaun McKinnon** - Apr. 17, 2010 12:00 AM
The Arizona Republic

The snow that buried Arizona's high country this winter is melting in the warm weather, sending streams and rivers gushing to levels that haven't been seen in years.

The runoff has eased dry conditions in the state's wild lands, but it has also created acres upon acres of mud.

Many of the state's forest roads remain closed because they're too muddy to drive on. Forest managers don't want people getting stuck or tearing up roads, leaving behind a trail of damage at a time when maintenance funds are low.

The water will mean more to wildlife and vegetation because most of the reservoirs that store drinking water filled up weeks ago. One exception is San Carlos Lake, which has ample room to store runoff, but most of its contents are used by farmers to grow crops.

http://www.azcentral.com/arizonarepublic/news/articles/2010/04/17/20100417arizona-winter-snowmelt-fills-rivers-streams.html

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AS EARTH DAY TURNS 40, ENVIRONMENTAL MOVEMENT FOCUSES ON PRACTICAL SOLUTIONS

by **Shaun McKinnon** - Apr. 18, 2010 12:00 AM
The Arizona Republic

Earth Day turns 40 this year, which makes it old enough to be uncool on the college campuses where it was born.

Yet if anyone is stoking the green fires right now, it's the under-40 crowd, young people, including many high-school and college students, for whom Earth Day has become as much a fixture as Memorial Day. Earth Day is Thursday.

As the economy overshadows environmental issues and climate-change skeptics score points from scientific scandals, many 20- and 30-something voters seem as committed to the cause of saving the planet as the first protesters of the 1970s were.

What's changing are the expectations. For many of these young Americans, the question about whether to protect the environment has been answered. They see it as their obligation to the future, starting with their own. Many don't consider themselves activists. They want real-world ideas, practical solutions that produce results. And growing numbers are choosing career paths based on their beliefs.

http://www.azcentral.com/arizonarepublic/news/articles/2010/04/18/20100418earth-day-environment-movement.html

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ARE ROSEMONT MINING CLAIMS VALID?

Tony Davis Arizona Daily Star | Posted: Monday, April 19, 2010 12:00 am

Dig, baby, dig?

Or wait, baby, wait?

Those questions loom large for the proposed Rosemont Mine in the Santa Ritas as officials debate whether the federal government must check out the validity of claims before deciding on a mining application - and if so, whether that means, contrary to more than a century of tradition, that the feds can say "no" to a mine.

A January 2010 letter from U.S. Agriculture Secretary Tom Vilsack promised Pima County officials that the feds wouldn't decide on Rosemont until they did a "thorough review" of whether its nearly 900 mining claims are valid.

That process, rarely done, can cost tens of thousands of dollars and take up to five years, the U.S. Bureau of Land Management said. And it could significantly delay the Rosemont project at a time when it hopes to win federal approval and start construction by the end of this year and begin mining by 2012.

http://azstarnet.com/news/science/environment/article_ee063c05-a745-597b-a230-3dc8a543b11f.html

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WARMING COULD SPUR WATER CRISIS:

COLORADO RIVER USERS MAY FACE FREQUENT SHORTAGES BY 2050

by **Shaun McKinnon** - Apr. 21, 2009 12:00 AM
The Arizona Republic

Colorado River water users will experience frequent shortages in the coming years as warmer, drier conditions squeeze an already overburdened resource, scientists said Monday.

Even without the effects of climate change, the scientists warned that the river may not produce as much water from mountain snowmelt as it did when the flow was divided among seven states in the early 1900s, some of the wettest years in centuries.

The result in either case would be tough choices among water agencies about who gets water and who gives it up.

The new findings, published in the online journal *Proceedings of the National Academy of Sciences*, are the work of the same researchers who last year computed 50-50 odds that Lake Mead, the largest reservoir on the Colorado, would dry up by 2021.

http://www.azcentral.com/arizonarepublic/news/articles/2009/04/21/20090421climate-river0421.html

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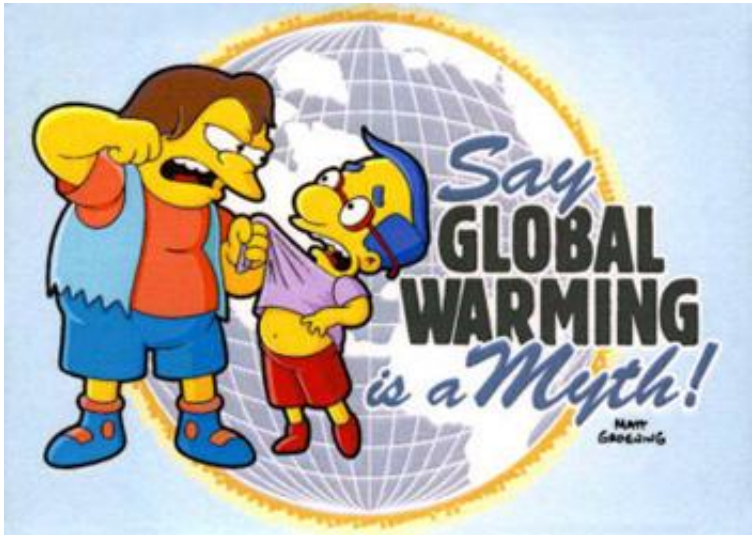
WATERBLOGGED

by **Shaun McKinnon** – April , 2010
The Arizona Republic

AZ lawmakers to WCI: '...and stay out!'

In February, **Arizona** Gov. **Jan Brewer** issued **an executive order** withdrawing Arizona from a regional cap-and-trade program proposed by the **Western Climate Initiative**.

This week, lawmakers added suspenders to Brewer's belt.



The **Legislature** passed and sent to the governor a bill (**House Bill 2442**) that prohibits Arizona from joining a regional cap-and-trade alliance without the express authorization of, yes, the Legislature.

Although aimed at the WCI cap-and-trade, the bill's language is broader, barring any state or regional program designed to "regulate the emission of greenhouse gas for the purposes of addressing changes in atmospheric temperature."

The bill was just another bad day in WCI bad week. **Earlier**, **Utah** Gov. **Gary Herbert** confirmed that the Beehive State **would join Arizona** on the greenhouse-gas-fighting sidelines. So far, only **California** is prepared to start the program, which tries to reduce greenhouse gas emissions by allowing polluters to trade pollution credits within a regional limit.

HB2442 now awaits a decision by Brewer. Former Gov. **Janet Napolitano**, a founding member of the climate initiative, vetoed a similar bill in 2008.

Find the rest of the story, associated links, and other timely water blogs on Shaun McKinnon's Arizona Republic site – **Waterblogged** – http://www.azcentral.com/members/Blog/ShaunMcKinnon

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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.