



## APRIL 2012 NEWSLETTER

### CONTENTS

---

[Viewpoint: Hunting Water Buffalo...](#)

[Government Goings-On](#)

[AHS Scholarship announcement](#)

[Phoenix chapter news](#)

[2012 AHS Symposium: Confluences 25 years bringing water, people, and ideas together](#)

[Arizona Science and Engineering Fair](#)

[ASU GeoClub Professional/Student Meet and Greet](#)

[Tucson chapter news](#)

[2012 Leonard Halpenny Intern Scholarship](#)

[WRRC Brown Bags for April 2012](#)

[Flagstaff chapter news](#)

[Birdsall-Dreiss Distinguished Lecturer for 2012](#)

[Introducing the Charles C. Avery Chapter Intern Scholarship, 2012](#)

[Hydro-news](#)

[Water Awareness Month \(WAM\)](#)

[Arizona Geological Society Meeting](#)

[Special Student Poster Presentation Night](#)

[ADWR Draft – Statewide Hydrologic Monitoring Report Now Available for Public Comment](#)

[2012 Southwest Wildfire Hydrology and Hazards Workshop](#)

[48th Forum on the Geology of Industrial Minerals – Call for Abstracts deadline March 23<sup>rd</sup>](#)

[Walmart chairman, wife donate \\$27.5 million to ASU](#)

[Arizona lawmakers push to take over federal land](#)

[For brothers, playing in a stream became lifelong work](#)

[Waterblogged by Shaun McKinnon, Arizona Republic](#)

[Members Corner](#)

[Job Board](#)

[Additional Information](#)

### VIEWPOINT: HUNTING WATER BUFFALO...

---

As I settle into the role of the AHS Corporate President I have started to think about all the important activities and events AHS has been involved with over the years. I also began to think about the professionals that have and continue to attend our Symposia, short courses and monthly dinner meetings and I am amazed. As an organization, we have such a great collection of water thinkers that I felt AHS should embark on a project to gather up our “water buffaloes” and collect the stories and history from them not only for posterity but to preserve those lessons learned and possibly not learned over our 100 year history. As I bounced this idea off of several colleagues I wondered if it was possible for AHS to take on a task such as this with so few volunteers. As I continued to mull this idea over and surf the web, I discovered that greater minds than mine have been thinking about this and not only have then been thinking they have been collecting and preserving our rich past when it comes to water issues. The Central Arizona Project has embarked on a project to collect “oral histories” with many of Arizona’s legendary “water buffalo”. The write ups are word-for-word and can be found on CAPs website at [www.cap-az.com/AboutUs/OralHistories](http://www.cap-az.com/AboutUs/OralHistories).

Now some of you may be saying well I knew all about this... and if you did good for you but now I ask the question what about all the new “water buffalo” out there? Who is doing work and making a mark on the Arizona water landscape? Or better yet are there some water buffalo whose work has impact our community but that haven’t been identified yet to be interviewed. The collection is already over 33 interviews? I can think of a few members I would like to see on that list.

And while we are out looking for “water buffalo”, perhaps we take this “economic slowdown” and reflect on our history and use this time as an opportunity to examine our current situation and our water community. I am amazed at some of the candid reports and it makes me think about our past and how to take these lessons to make a better future. We know what a great place Arizona is to live and raise a family and sooner or later our economy will be moving again and maybe just maybe if we take this breather to think about our water and appreciate the thinkers of our past we can design a brighter water future.

I am open to suggestions on how AHS could be a part of this movement. Well maybe it’s not a movement but it is a good idea. So in closing I think we should learn and appreciate our past, watch the present, and work to create a bright Arizona water future....

Mike Hulst

AHS Corporate Board President

[Top of the Document](#)

## GOVERNMENT GOINGS-ON

---

The Arizona Legislature is currently re-thinking how the Arizona Department of Water Resources is funded. In a rather cynical ploy a couple of years ago, the Legislature imposed a population-based fee on municipalities to fund ADWR, thereby shifting the fiscal burden from the state to the local level. Yet ADWR serves the entire state, not just the largest municipalities. Protecting water resources is a vital function of state government. The clarity of this concept has finally dawned on the Legislature, and a bill to dispose of the municipal fee and to study new funding mechanisms for ADWR is now working its way through committee. Passage looks likely.

So how has ADWR coped with their ever-shifting fiscal fortunes? Amazingly, despite the cuts to staffing—so severe that some programs were obliterated—the folks at ADWR have kept on going. People are spread thin, and the whole apparatus seems held together with duct tape, but good work still gets produced. The Fourth Management Plan is being drafted and may be adopted in 2013, a little late but a good effort in view of the lack of staff. Not much change from the Third Management Plan is envisioned, but loose ends will be tied down and the overall concepts of the 1980 Groundwater Management Act preserved. InSAR data continues to be collected to monitor land subsidence. ADWR continues to support the waning days of the Water Resources Development Commission. And most recently ADWR has issued a draft Statewide Hydrologic Monitoring Report,

which looks a lot like work that was done in support of the WRDC, but expands on it. This report is now out for public comment, and is worth taking a look at. Frank Corkhill, Chief Hydrologist, presented an overview of this report recently at a meeting of the Phoenix Chapter. The draft report evaluates data collected over the last 20 or more years, and offers insights into trends in the various groundwater basins of the state. And in the rural areas of Arizona, it's not looking good. Water levels are dropping, and demand is often increasing. Comments on this report are due by April 20, and I recommend that you take a look at it. Go to the ADWR Website at <http://www.azwater.gov/azdwr/Hydrology/WaterResources/StatewideHydrologicMonitoringReport.htm> to download the pdf.

Alan Dulaney  
City of Peoria

[Top of the Document](#)

## AHS SCHOLARSHIP ANNOUNCEMENT

---

The Arizona Hydrological Society will award **three \$2,000 student scholarships** in 2012!

The purpose of the award is to encourage full time students in hydrology, hydrogeology, or any other water resources related fields at any Arizona university, or college to excel in their area of study. Any junior, senior or graduate student who fits into this category is qualified to apply for the Scholarship. Applications for the Scholarship must be submitted to Dr. Aregai Tecele of the School of Forestry, Northern Arizona University, by May 31, 2012. The Scholarship will be awarded during the Annual Symposium of the Society on Sept. 18-21, 2012 at the Desert Willow Conference Center (DWCC) located near 48th Street and Broadway Road in Phoenix.

Please [click here](#) for more information!

[Top of the Document](#)

## PHOENIX CHAPTER NEWS

---

### Phoenix Chapter's April Dinner Meeting

The next Phoenix chapter dinner meeting will be held **on Tuesday, April 10, 2012**, at **Nello's in Tempe** (northeast corner of McClintock & Southern, just north of U.S. Highway 60 (the Superstition Freeway). **Jim Holway** of the **Sonoran Institute**, also a Member of the Board of directors of the Central Arizona Project, will give a presentation at the April Phoenix Chapter meeting on some aspects of the outlook for sustainability in water resources in Central Arizona going forward. Jim will also present his perspective on related water resources and CAP issues.

Please join us for a beverage, to share business cards, and talk water!

**Location:** Nello's  
1860 E. Southern Avenue  
Tempe, AZ 85282

### **Water Sustainability, Governance & Policy Choices for Central Arizona**

**Event:** **Jim Holway, Director, Western Lands and  
Communities, A Lincoln Institute of Land Policy -**

## Sonoran Institute Joint Venture

<b>Chapter Board Meeting:</b>	4:30 PM – 5:30 PM
<b>Happy Hour &amp; Dinner:</b>	5:30 PM – 7:00 PM
<b>Program:</b>	7:00 PM – 8:00 PM
<b>Cost:</b>	\$15 member, \$20 non-member, \$5 student

RSVP with Kirk Creswick at [kcreswick@eecphx.com](mailto:kcreswick@eecphx.com) or 602-248-7702.

Hope to see you there!

**WE ANTICIPATE A BIG TURNOUT FOR THIS PRESENTATION, & THE FACILITIES AT THE RESTAURANT ARE LIMITED. PLEASE RSVP TO KIRK CRESWICK (SEE DIRECTLY ABOVE) IN A TIMELY FASHION – IF YOU DON'T, YOU MAY NOT GET A MEAL. WE ADVISE ARRIVING EARLY – IF YOU DON'T, THERE MAY NOT BE A PLACE FOR YOU TO SIT.**

*Jim Holway directs Western Lands and Communities, the Sonoran Institute's Joint Venture with the Lincoln Institute for Land Policy. This program focuses on managing growth, sustaining regions, protecting resources and empowering communities throughout the intermountain west. He was also elected to the Board of the Central Arizona Water Conservation District in November 2010.*

*Prior to joining the Sonoran Institute in 2009, Jim was a Professor of Practice at Arizona State University and served as the ASU Coordinator for the Arizona Water Institute.*

*He previously served as Assistant Director of the Arizona Department of Water Resources. His responsibilities included overseeing the state's Active Management Area, conservation, assured water supply, recharge, well permitting, and groundwater and surface water rights programs. Jim earned his bachelors degree in Political Science from Cornell University and both a Ph.D. and Masters in Regional Planning from the University of North Carolina.*

### Abstract

Jim will share his perspective on questions about water sustainability in Central Arizona and the key policy choices we face. He will also discuss a few issues currently before the Central Arizona Project, in particular concerning the Central Arizona Groundwater Replenishment District. Finally he will discuss the Sonoran Institute's interest in broadening engagement on water issues and the January workshop held to consider the value and policy choices that underlie our water management decisions. He is hoping we'll be able to have a spirited discussion on those issues of greatest interest to the dinner group.

---

### Future Event Calendar (see also calendar on [www.azhydrosoc.org](http://www.azhydrosoc.org))

- Ø May 8, 2012: SunUp Brewery, 321 E. Camelback Rd., Phoenix, topic to be announced.
- Ø June and beyond – maybe you or a colleague? Please contact [Tom Walker](#), Phoenix Chapter Vice President, if you would like to give us a presentation or if you know anyone else who could use an audience.
- Ø July 2012: Wine tasting fundraiser at Terrior Wine Pub for the Herman Bower Intern Scholarship.

## **2012 AHS SYMPOSIUM: CONFLUENCES – 25 YEARS BRINGING WATER, PEOPLE, AND IDEAS TOGETHER**

---

The Symposium Planning committee is in full swing! We held our last planning meeting at Boulder's on Broadway in Tempe on March 22. Where were you?

Symposium Chair, Ted Lehman, has a goal to get every AHS member involved in this years' symposium in some capacity – organize a field trip, teach a workshop, moderate a session, give a talk, exhibit your firm, sponsor a student or teacher, or just show up and see what your colleagues have been up to recently!

Specifically, we are currently looking for a Workshop Program Coordinator. The Workshop Coordinator will help coordinate the overall workshop experience for both the workshop instructors and the participants. We have four half-day workshops set up – two with surface water themes and two with a groundwater slant. We plan to have the workshop descriptions and instructors info up on the website shortly. We need someone to help track registrants and check in with instructors between now and September to make sure all goes according to plan. If you are interested helping coordinate workshop activities, please call or email Ted.

In another arena, Summer Waters has stepped forward to act as our Program Committee Chairperson. She needs some folks to help her with abstracts once they start trickling in. The Program Committee will review abstracts and help organize the technical agenda. If you are interested in helping with the abstract review and technical program organization, please contact Summer at [SWaters@cals.arizona.edu](mailto:SWaters@cals.arizona.edu) or 602-827-8200 ext. 349. If you are interested in giving a talk, the Call for Abstracts is out! Check it out on the website.

Sponsorship fundraising is getting in gear too. We've already received a few early commitments! Thanks so far to Platinum Level Sponsor, [Freeport McMoRan Copper & Gold](#), and Premium Exhibitor, [US Bureau of Reclamation](#)! Please join Freeport and USBR, and give generously when our Society President, Mike Hulst, or one of his subcommittee assistants calls you looking for your support of this year's event. Thank you!

The next planning meeting will again be at Boulder's on Broadway, April 22 at 5 pm. Email or call Mr. Lehman if you'd like to participate. Ted can be reached at [ted@jefuller.com](mailto:ted@jefuller.com) or 480-222-5709.

We're looking forward to your participation.

## **ARIZONA SCIENCE AND ENGINEERING FAIR**

---

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.

I would like to put out a request for AHS volunteers to help with judging at AzSEF. The date for judging is Tuesday April 3, 2011. I request that interested parties contact me by email [pplato@clearcreekassociates.com](mailto:pplato@clearcreekassociates.com) or by phone 480-659-7131 (office) or 602-750-4237 (cell). Judging will involve several hours of time on the afternoon of April 3, 2011. As a group we will review the hydrologic projects and interview students (if available). Generally, I have met with the volunteers at 3PM and completed judging by 6PM.

This judging is separate from the AzSEF fair itself, and I encourage AHS members to also consider volunteering for judging at AzSEF. I have volunteered since 2004 and found it to be a fun and rewarding experience.

If you are interested, please contact me by phone or email. Thanks

**Paul R. Plato, R.G.**  
Senior Hydrogeologist  
Clear Creek Associates  
(480) 659-7131  
(602) 750-4237 (cell)

[Top of the Document](#)

## **ASU GEOCLUB PROFESSIONAL/STUDENT MEET AND GREET**

---

Arizona State University's GeoClub cordially invites you to attend their annual Meet and Greet on Tuesday, **April 10th from 5-9pm**.

This event is put on each year for students to meet and ask questions of professionals in the work field. Our hope is for interactions and discussions at this meeting to help students determine their career choice and provide as a door into a future career.

The schedule for the event is as follows:

- 5-6pm: Reception- food and beverages will be provided.
- 6pm: Introductions from visiting professionals.
- 8pm-9pm: Mingling between professionals and students.

Parking for this event will be validated by the GeoClub.

Please Register at <https://orgsync.com/12504/forms/show/27215>.

[Top of the Document](#)

## **TUCSON CHAPTER NEWS**

---

Please join us for the next Tucson Chapter meeting, **Monday, April 30, 2012**, for a special jointly held presentation with the Pima Association of Governments Watershed Planning Subcommittee. The meeting is tentatively scheduled for April 30 at 1:30PM, in the TransAmerica Building at 177 North Church.

### **2012 Distinguished McElhiney Lecturer**

**Marvin Glotfelty, R.G.** is a co-founder and Principal Hydrogeologist with Clear Creek Associates, a groundwater consulting firm with offices in Arizona, California and Virginia. He received BS and MS degrees in geology from Northern Arizona University, and he is a Registered Professional Geologist in Arizona and California, and also a Licensed Water Well Driller in Arizona. During his professional career spanning about three decades, Mr. Glotfelty has participated in almost every aspect of the hydrogeologic sciences, including recharge projects, water supply studies, water rights issues, groundwater quality, well installation programs, and well rehabilitation projects. He has been involved with the design, installation, rehabilitation, or abandonment of over 700 water wells in the southwestern United States, and has served as Technical Director of the Arizona Water Well Association for over 20 years (since 1990). Mr. Glotfelty has given over 100 presentations on hydrogeologic and water well topics, and he has authored over 20 publications, including a Glossary of Driller's Terms published by the National Ground Water Association (2004), and editorial review of a chapter of the 3rd edition of Groundwater & Wells published by Johnson Screens Co. (2007). In 1995, he received the City of Phoenix Mayor's Environmental Award for his work with rehabilitation of municipal wells to improve their water quality.

#### **"Life-Cycle Economic Analysis of Water Wells - Considerations for Design and Construction"**

This presentation includes discussions of several key elements of well design/construction that impact the total

(life cycle) cost of water wells, such as well screen type, construction material, well development method, and frequency of well cleaning. An example life-cycle economic analysis will be presented, comparing low-carbon steel vs. stainless steel well screen. The economic analysis will include consideration of the actual construction cost of 70 municipal wells that were installed between 1993 and 2011. The economic elements to be considered will include initial capital cost; energy requirements for water pumping; operations & maintenance costs; probable well longevity and replacement schedules; etc. The operations & maintenance costs are actual values from a large water purveyor in Arizona. Previously, this economic analysis was performed independently in 2003 and 2008, with essentially identical results to those of this 2011 economic analysis. The life-cycle economic analysis results provide the lesson that in some cases, more expensive well installation costs pay for themselves in the early life of the well, with dividends in value and economics for many subsequent years.

[Top of the Document](#)

## **2012 LEONARD HALPENNY INTERN SCHOLARSHIP**

---

Deadline for Application (Students): 5:00 PM, **April 6, 2012**

### **Information for Students**

The Leonard Halpenny Intern Scholarship is open to graduate and undergraduate students in the fields of hydrology, geology, civil, environmental and geologic engineering, renewable natural resources, wastewater management, soil and water science, and other hydrology-related studies. Students from the U of A, ASU, NAU, Pima College, and other Arizona colleges can apply to participate in the program. The scholarship provides an opportunity to gain practical experience at multiple hydrological work environments in Tucson. The scholar will be required to complete 200 hours of work in 2012. The scholarship carries a stipend in the amount of \$3,000. The student will be required to keep and submit a record of hours worked. Upon completion of the intern scholarship, the candidate will be required to submit an article summarizing his or her own experience that will be published in the AHS newsletter.

Those who wish to apply should obtain an application form from the AHS web site:

[http://www.azhydrosoc.org/internship\\_Halpenny.html](http://www.azhydrosoc.org/internship_Halpenny.html).

E-mail [modom@elmontgomery.com](mailto:modom@elmontgomery.com) for more information about the Leonard Halpenny Intern Scholarship Program.

### **Information for Interested Employers**

The Tucson Chapter is seeking employers from government, private industry, non-profit agencies and environmental consulting firms to host the Leonard Halpenny Intern Scholar and provide practical hydrological experience to a student pursuing a degree in hydrology, geology, environmental science, civil and environmental engineering, or other hydrology related fields. The Halpenny selection committee will interview qualified candidates the week of **April 16<sup>th</sup>, 2012**, and will announce the selection of the Intern Scholar by **April 30, 2012**. The Intern must complete 200 hours of service by December 31, 2012 with at least 40 hours service at each participating organization.

Candidates must be willing to sign liability and confidentiality waivers for participating organizations prior to commencing their intern scholarship

Interested organizations who wish to apply should obtain an application form from our web site:

[http://www.azhydrosoc.org/internship\\_Halpenny.html](http://www.azhydrosoc.org/internship_Halpenny.html) and send it to the committee by **March 23rd, 2012**.

### **Leonard Halpenny Intern Scholarship Committee**

[Marla Odom \(modom@elmontgomery.com\)](mailto:modom@elmontgomery.com)

Montgomery & Associates  
1550 E. Prince Road

Tucson, AZ 85711  
Telephone: (520) 881-4912  
Fax: (520) 881-1609

[Top of the Document](#)

## **WRRC BROWN BAGS FOR APRIL 2012**

---

*Unless otherwise noted, all seminars are held at the Sol Resnick Conference Room,  
Water Resources Research Center, 350 N. Campbell Ave., Tucson.*

*If you have any questions, contact Jane Cripps at [jcripps@cals.arizona.edu](mailto:jcripps@cals.arizona.edu) or 520-621-2526*

### **Tuesday, April 10**

**Time:** 12:00 – 1:30 pm

**Speaker:** Dr. Kim Ogden, Professor, University of Arizona Department of Chemical Environmental Engineering

**Title:** Biofuel Production and Water in the Southwest

The Southwest is under consideration for production of fuel from plants and algae due to the long days and ample sunlight. However, water is an issue for sustainable production. This presentation will focus on the potential for using algae and sweet sorghum as feedstocks for biofuels in the Southwest. Strategies for reducing water usage, recycling water and using wastewater for cultivation will be highlighted.

### **Thursday, April 19**

**Time:** 8:00 to 9:00 AM

**Speaker:** Rosalind Bark, Ph.D., CSIRO Ecosystem Sciences, Australia

**Title:** Valuing the multi-benefits of the Murray-Darling Basin Plan using an ecosystem service framework

The Murray-Darling Basin Plan aims to maximize the benefits of river reform to the Australian public. Valuing the benefits from changed flow and inundation regimes under the Basin Plan requires linking ecological outcomes and economic valuation. An ecosystem service framework is used as the bridge between ecological sciences and economic valuation.

[Top of the Document](#)

## **FLAGSTAFF CHAPTER NEWS**

---

The next Flagstaff Chapter meeting will be on Wednesday April 18, 6PM, location TBD. For additional information please contact [Dana Downs-Heimes](#) or [Erin Young](#). We are also soliciting hosting organization applications for the Flagstaff Chapter Intern Scholarship through mid-April.

## **BIRDSALL-DREISS DISTINGUISHED LECTURER FOR 2012**

---

**March presentation recap:**

**Birdsall-Dreiss Lecturer, Dr. James Famiglietti**  
**Department of Earth System Science, University of California, Irvine**

What a fantastic presentation from the 2012 GSA Birdsall-Dreiss Lecturer, James S. (Jay) Famiglietti, on March 7, 2012. His message of a changing climate is a powerful one, from which he stresses the need as water scientists to educate children, the public, and politicians. Jay praised the AHS and our





focus to support hydrology education, research and outreach. Check out the movie "[Last Call at the Oasis](#)" in which Dr. Famiglietti has a role!

The talk was held in the Geology building on the campus of Northern Arizona University and was very well attended by AHS members and NAU students and faculty. Dr. Famiglietti presented his talk titled "Water cycle change and the human fingerprint on the water landscape of the 21st Century: Observations from a decade of GRACE." Following the talk, about 15 AHS Members filled several tables at the Lumberyard for casual discussion with Jay over dinner and drinks. We thank Jay for

adding Flagstaff to his busy lectureship schedule! Visit the Flagstaff Chapter website for a link to his abstract and other information.

[Top of the Document](#)

## **INTRODUCING THE CHARLES C. AVERY CHAPTER INTERN SCHOLARSHIP, 2012**

---

- ▶ Deadline for Application (Students): March 30, 2012 (closed)
- Deadline for Application (Employers): April 20, 2012

The Flagstaff Chapter of the Arizona Hydrological Society is proud and honored to be able to rename the Flagstaff Intern Scholarship to the Charles C. Avery Intern Scholarship in recognition of a lifetime of contribution to the science of hydrology and forestry and for mentoring and teaching several generations of budding hydrologists and foresters. Dr. Charles C. Avery is a retired Professor and Professor Emeritus of Forestry and Watershed Hydrology at Northern Arizona University. For years Dr. Avery has promoted an understanding of the link between undisturbed forest lands and the water they supply for much of the Western United States. As a strong proponent of the combined study of forestry and watershed hydrology, Dr. Avery has graduated several generations of a new brand of forestry students that recognize the interrelated and complex nature of the Nation's forests and waterscape. Dr. Avery helped establish the Beaver Creek Experimental Forest as a teaching tool to demonstrate the effects of different forest management practices on watershed conditions. He is also recognized for his work on snowpack sublimation as a significant process in depletion of snowpack moisture. Dr. Avery received his B.S. from Utah State University, M.S. from Duke University, and his Ph.D. from University of Washington. He is also certified by the French School of Forests and Waters. Dr. Avery has also conducted research and lectured abroad, primarily in France. His career as a professor at NAU spans 26 years from 1974 to 2001. Throughout that time he was an excellent role model and mentor to students and many hydrology and forestry professionals.

In 1984, Dr. Avery, along with a group of 6 or so others, became founding members of the Flagstaff Chapter of the Arizona Hydrological Society. In those early years Dr. Avery was an active proponent of AHS providing meeting space, speakers, and field trips to local areas of research and interest in Northern Arizona. Many of us can still remember picnic lunches in the former Beaver Creek Experimental Watersheds while discussing the reasons that led to the initiation to the Beaver Creek Watersheds' study and its vast contribution to understanding of forest treatment impacts on water yield and other forest resources conditions. Dr. Avery also recognized the potential that the Flagstaff Chapter of AHS represented for his students. He encouraged their participation as a means of exposing them to a broader perspective on the different fields of hydrology and water resources and

a means to allow them to network with professionals in the water sciences. A number of Dr. Avery's past students have been winners of AHS scholarships and are now recognized members of the hydrologic and forestry professions in their own right.

Please join me in thanking Dr. Avery for lending his name to the Flagstaff Chapter Intern Scholarship Program and for his years of research and service to the hydrologic and forestry communities. "Félicitations Chuck sur vos cotisations à l'eau et poussent la science!"

## Information for Interested Employers

The Flagstaff Chapter of the Arizona Hydrological Society is seeking interested employers from government, private industry, and environmental consulting firms in northern Arizona to participate as a host to the Intern Scholarship. The selected student recipient of this award will be in pursuit of a college degree in hydrology, geology, environmental science, civil engineering, environmental engineering, or a related field of study. The awarded student will have the opportunity to complete 200 hours of service between the dates May 1 and August 31 with at least three government or private industry organizations in the environmental, geological, or water resources field of study. The selected student will be required to complete a minimum of 40 hours of service at each organization. Part of the 200 hours of service will include the opportunity for the student to obtain their HAZWOPER training for entrance on hazardous waste sites. The scholarship program also provides a monetary award to the student FULLY funded by the Arizona Hydrological Society.

This is an excellent opportunity for government or private industry organizations to try out a potential employee. Participating host organizations reserve the right to have the scholarship recipient sign a liability and confidentiality waiver. The Intern Scholarship Recipient will have the opportunity to choose from a list of interested government or private industry organizations that are in line with the student's career goals. For this reason, the Intern Scholarship Committee wants any interested organization to respond by completing the [Employer Interest Survey Form](#) and e-mail it to [Erin Young](#).

[Top of the Document](#)

## HYDRO-NEWS

---

### WATER AWARENESS MONTH (WAM)

---

Join with cities, towns, water providers and conservation experts throughout Arizona to engage their communities in learning about water and water conservation during Water Awareness Month (WAM).

Celebrate Water Awareness Month with an interactive, web-based calendar of activities, events, tips, and resources that relate to the water topic of the day. The site overflows with ideas and activities to help educate Arizonans about water conservation and make them more aware of our state's most precious resource, water.

Here are a few examples:

- April 4th "DIY Landscape" Day features tips on selecting plants, resources for landscape design and a list of free classes to learn how to become the DIY Diva of your yard.
- April 10th "Rule the Yard Auto-magically" Day takes the mystery out of programming watering timers.
- April 13th "From Snowflake to Tap" Day describes the varied sources of Arizona's water.
- April 26th "Grow Green Kids" Day has interactive games, puzzles and activities for kids of all ages.

For more information on Water Awareness Month, visit [www.waterawarenessmonth.com](http://www.waterawarenessmonth.com).

*Executive Order 2008-19 designates April as Water Awareness Month. It encourages citizens, businesses, local and state governments to create a greater awareness of water issues through community education, action and celebration.*

### ARIZONA GEOLOGICAL SOCIETY MEETING

---

## Special Student Poster Presentation Night

**Featuring posters by students from the University of Arizona and Arizona State University: Topics will range from Cu-Co deposits in Central Africa to Tectonics in Southern Tibet**

**Sheraton Tucson Hotel & Suites** (Please note change in venue from the Sheraton Four Points Hotel.)

Catalina Ballroom

5151 East Grant Road, Tucson

(The hotel is on Rosemont north of Grant, just north of the International House of Pancakes. Park in the lot west of the hotel and come into the west entrance.)

**Tuesday, April 3, 2011**

**6-7 PM:** Social hour and informal perusal of the posters and discussion with the presenters

**7-8 PM:** Dinner

**8-9 PM:** Short oral presentations on each poster while a digital version of the poster is projected on a screen.

**9-9:20 PM:** Presentation of prizes for the first, second and third best posters (\$500, \$250, and \$100, respectively). The three judges will be a panel of distinguished AGS members, who have much experience in this sort of thing. Judging of the posters will be based on scientific content and presentation, and the quality and conciseness of the oral presentation.

[Reservations are required for the dinner.](#) Admission to the talk only is free. Please also note that although there is limited surface parking around the hotel, there is ample parking in the garage beneath the hotel.

**Special Meal Deal for Students! Dinner is *FREE* for students who make a reservation online at the website below. Please bring a student ID with you.**

**SCHEDULE: CASH BAR @ 6:00 PM, DINNER @ 7.00 PM, TALK @ 8:00 PM. WITH RESERVATION: MEMBER = \$24.00, GUEST = \$27.00.** If you do not have a reservation, an extra \$3.00 will be charged. Also, without reservations you may not get dinner. To make dinner reservations please call the AGS answering machine at (520) 663-5295 or reserve online at <http://www.arizonageologicalsoc.org/meeting-information/dinner-reservations> by 5:00 P.M. on the Friday before the meeting. Leave name, number of attendees, and whether a vegetarian or low-salt meal is required. This number can also be used for field-trip reservations and leaving messages for Society officers. Please cancel your reservation via the answering machine if you find that you will be unable to attend.

**Please note: There is still lots of space and time for additional posters**

**Please contact Bob Kamilli if you have any questions. Office: 520-670-5576; Cell: 520-349-9336; Email: [bkamilli@usgs.gov](mailto:bkamilli@usgs.gov)**

[Top of the Document](#)

## **ADWR DRAFT – STATEWIDE HYDROLOGIC MONITORING REPORT NOW AVAILABLE FOR PUBLIC COMMENT**

---

The new ADWR - Statewide Hydrologic Monitoring Report – Public Comment Draft is now available to download. The report provides data and analysis of Arizona's groundwater conditions over the last two decades. The period analyzed includes a time of significant variability in groundwater use trends, both inside and outside Arizona's Active Management Areas (AMAs), and covers the first 20 years of Central Arizona Project (CAP) water deliveries for direct use and recharge in central Arizona. The last 20 years also includes an extended drought period that has affected groundwater and surface water resources throughout the state.

The report provides insight into the effectiveness of major water management strategies and programs, and also into the impacts of extended groundwater overdraft. The analysis presented also attempts, where possible, to identify the effects of drought on local groundwater conditions. The report appendix contains information on ADWR's hydrologic data collection program and a discussion of current and future directions in ADWR's data collection activities.

The report is being released as an external agency and public comment draft. Comments about any aspect of the report may be submitted through April 20, 2012. The report will be finalized shortly thereafter. Please note that the report has undergone significant internal vetting. We are not seeking detailed edits of the report, but

rather comments that could assist public readability and comprehension, and local input on our data interpretation and analysis.

All comments should be sent to Frank Corkhill, Chief Hydrologist, at: [efcorkhill@azwater.gov](mailto:efcorkhill@azwater.gov)

<http://www.azwater.gov/azdwr/Hydrology/WaterResources/StatewideHydrologicMonitoringReport.htm>

[Top of the Document](#)

## **2012 SOUTHWEST WILDFIRE HYDROLOGY AND HAZARDS WORKSHOP**

---

The University of Arizona is hosting the 2012 Southwest Wildfire Hydrology and Hazards Workshop this coming **April 2 – 5, 2012**. There is a strong contingent of land management and other government agencies involved in the planning for this conference, so it is a good opportunity for agencies and academics to share results and prepare for research and early-warning response to the upcoming fire season in the Southwestern U.S. We are particularly interested in increasing the dialogue among academic researchers (including students!) and the various government agencies that are tasked with responding to wildfires. As many post-fire researchers are aware, this coordination is often difficult in the short time available after landscape-altering fires, and as such we hope to use this workshop to make new connections among the various research entities.

Please consider joining us at the University of Arizona's Biosphere 2 for this workshop, you can find more information here: <http://register.b2science.org>

Feel free to contact me with any questions. The workshop is limited to about 80 participants, so please register soon.

**Steve DeLong**

**Assistant Research Professor**

**Biosphere 2**

**University of Arizona**

**520-838-6148**

[sdelong@email.arizona.edu](mailto:sdelong@email.arizona.edu)

[leo.b2science.org](http://leo.b2science.org)

[Top of the Document](#)

## **48TH FORUM ON THE GEOLOGY OF INDUSTRIAL MINERALS – CALL FOR ABSTRACTS DEADLINE MARCH 23<sup>RD</sup>**

---

**You are invited to the 48th Forum on the Geology of Industrial Minerals 2012**

Hosted by: Arizona Geological Survey

Event Date: **Tuesday, May 1, 2012 – Saturday, May 5, 2012**

[geologyofindustrialminerals.org](http://geologyofindustrialminerals.org)

Location: The Scottsdale Cottonwoods Resort & Suites

6160 North Scottsdale Road Scottsdale, AZ 85253

[scottsdalecottonwoods.com](http://scottsdalecottonwoods.com)

### **EVENT DETAILS**

#### **Registration Information:**

Full registration for three days: \$250.00

One-day registration: \$100.00 (does not include banquet)

On-site registration at the Scottsdale Cottonwoods conference center:

Tuesday, May 1, 2012, 5:30pm – 9:00pm

Wednesday, May 2, 2012, 7:30am – 7:00pm

### **Hotel Information, Ground Transportation, and Parking:**

Scottsdale Cottonwoods Resort & Suites

Phone: 480-991-1414

Registrants must contact the conference hotel for their reservations. The conference hotel rate is \$84.00 for single/double occupancy for the Tucson Suites and \$94.00 for single/double occupancy for the Phoenix Suites. Ask for the 48<sup>th</sup> *Forum on the Geology of Industrial Minerals* rate.

[Top of the Document](#)

## **WALMART CHAIRMAN, WIFE DONATE \$27.5 MILLION TO ASU**

---

by **Ken Alltucker** - Mar. 29, 2012 06:31 PM

*The Republic* | [azcentral.com](#)

Arizona State University's Global Institute of Sustainability has received a \$27.5 million gift from the Rob and Melani Walton Fund of the Walton Family Foundation.

ASU said it will use the money to address problems and create solutions in such areas as energy, water, climate, urbanization, social transformation and decision-making.

The gift will help fund four sustainability-related initiatives: train practitioners and educate youth; create a seed fund for sustainability research; build an international sustainability network; and launch a fellowship program that trains scholars, government and non-government individuals.

Rob Walton, who is chairman of the board of Walmart, said he wants the investment to help create programs that continuously evolve and have long-term economic viability.

"We want to educate future leaders and empower current scholars so they will effectively apply knowledge to action, creating a better world for all of us," Walton said in a prepared statement.

Read more: <http://www.azcentral.com/arizonarepublic/business/articles/2012/03/29/20120329walmart-chairman-wife-donate-million-asu.html#ixzz1qZmOuDxS>

[Top of the Document](#)

## **ARIZONA LAWMAKERS PUSH TO TAKE OVER FEDERAL LAND**

---

by **Shaun McKinnon and, Yvonne Wingett Sanchez** - Mar. 25, 2012 11:23 PM

*The Republic* | [azcentral.com](#)

Another "sagebrush rebellion" is spreading through legislatures in Arizona and other Western states with a series of formal demands that the federal government hand over title to tens of millions of acres of forests, ranges and other public lands.

Arizona could claim as much as 25 million acres -- all federal land in the state except military bases, Indian reservations, national parks and some wilderness areas. If the federal government fails to comply by the end of 2014, the states say they will begin sending property-tax bills to Washington, D.C.

While the original sagebrush rebellion grew out of conflicts over management of federal lands, often as specific as keeping a forest road open, the new takeover movement owes more to "tea party" politics, with a strong focus on reducing the scope of federal influence and opening land to more users.

Supporters say federal agencies have mismanaged the land and blocked access to natural resources, depriving the states of jobs and revenue from businesses ready to develop those resources. With the state in control, the backers say, loggers could return to forests where endangered species halted work decades ago

and miners could regain access to ore outside the Grand Canyon.

Read more: <http://www.azcentral.com/arizonarepublic/news/articles/2012/03/23/20120323arizona-federal-land-takeover.html#ixzz1qZnw2l2P>

[Top of the Document](#)

## FOR BROTHERS, PLAYING IN A STREAM BECAME LIFELONG WORK

---

by *Shaun McKinnon* - Mar. 18, 2012 11:41 PM  
*The Republic* | [azcentral.com](http://azcentral.com)



Mark Henle/The Arizona Republic

Lee Ester (right) and Charlie Ester head groups at Salt River Project.

A little more than a mile from the cabin where Lee and Charlie Ester spent summers with their family, Hoxworth Springs bubbles up from the ground, gathering into a small stream that meanders down the gentle slopes toward Elk Park Meadows outside Flagstaff.

The water fascinated the Ester brothers, even when they were lugging bucketfuls down to the horse corral. One summer, after some thought and a bit of planning, Lee built a small gate below the springs that allowed Charlie to control the flow of the water, backing it up into a pond, releasing it downstream.

Almost 40 years later, water still fascinates the Ester brothers, who still stop it, store it and let it go again. Only the scale has changed.

Lee Ester, 55, is now manager of the water-measurement group for Salt River Project, the Valley's largest water provider. He monitors the mountain snowpack and measures the flow of streams that carry the melted snow and the levels of reservoirs that store it.

Brother Charlie Ester, 50, oversees SRP's water-resource operations. He uses Lee's measurements to manage SRP's overall water supply, always trying to stay ahead of an impending drought or a reservoir-filling runoff season.

Together, they help maintain a water supply of more than 1 million acre-feet -- nearly 326 billion gallons -- annually.

Read more: <http://www.azcentral.com/12news/news/articles/2012/03/04/20120304brothers-water-lifelong-work.html#ixzz1qZp3fJpf>

[Top of the Document](#)

## WATERBLOGGED BY SHAUN MCKINNON, ARIZONA REPUBLIC

---

### [GreenZone: Fenced in; banned bottles](#)

Wednesday, March 28, 2012 at 12:14 PM

---

### [Watching the snow melt](#)

Tuesday, March 27, 2012 at 11:41 AM

The thing about late-winter storms is that the snow typically melts fairly soon after it falls, which means the streams and creeks downstream from the higher elevations swell for a few days with new runoff.

That sudden rush of melting snow from the storm that blew through **Arizona** March 18-19 has been especially evident in some areas because runoff from winter snowfall had all but ended. Flow in many creeks and rivers had already ebbed to levels more often seen later in the spring.

As temperatures rose after the storm, the snow began to melt quickly. Here's some good visual evidence from three stream gauges monitored by the **U.S. Geological Survey** as part of a [statewide network](#). The gauges are all on the **Verde River** watershed, where storm snow totals were among the highest and where winter runoff had about ended. The charts start March 18, the day of the storm, and extend through March 27. It's like watching snow melt.

Read more: <http://www.azcentral.com/members/Blog/ShawnMcKinnon/158295>

---

### [\*\*\*Public lands takeover bill hits wall\*\*\*](#)

Monday, March 26, 2012 at 03:12 PM

An attempt to take over millions of acres of public lands across Arizona and fuel a new "**sagebrush rebellion**" hit a rut in the back roads Monday when the **House Rules Committee** failed to clear the legislation for a final floor vote.

Three Republicans joined the committee's three Democrats on a [3-6 vote](#) that would have advanced [Senate Bill 1332](#). For now, that means the measure is dead, although the rule of thumb at the Legislature is that a bill never truly dies until sine die, the session's end.

SB1332 was almost identical to a bill passed by the [Utah Legislature](#) and [signed last Friday](#) by Utah Gov. **Gary Herbert**. The measure demands that the federal government turn over title to most federal lands in the state, as much as 25 million acres in Arizona.

Legal experts said the bill would not pass constitutional review and could ensnare Arizona in another costly court battle. Utah's legislative lawyers also said as much in [a note attached](#) to that state's bills, but lawmakers there ignored the advice and moved ahead.

Read more: <http://www.azcentral.com/members/Blog/ShawnMcKinnon/158241>

---

### [\*\*\*Chiricahua leopard frog gets critical habitat\*\*\*](#)

Tuesday, March 20, 2012 at 04:18 PM

---

### [\*\*\*Is your toilet running? Fix it.\*\*\*](#)

Thursday, March 8, 2012 at 04:24 PM

---

### [\*\*\*Forest thinning project will create jobs\*\*\*](#)

Wednesday, March 7, 2012 at 12:17 PM

---

### [\*\*\*Arizona just gets drier this year\*\*\*](#)

The last time measurable rain fell in the official **Phoenix** gauge was Dec. 18 and that was just over a tenth of an inch, so yes, it's dry here, which is why wind of any real strength builds walls of dust and why a controlled burn on the Valley's western edge exploded into a brush fire Tuesday.

But rain in Phoenix contributes little to the water supply or to rivers, which don't flow much through the urban areas anyway. Snow is what we look at for all that, or it's what we would look at if there were much still there.

The **Natural Resources Conservation Service** released its March 1 [snowpack report](#) and runoff forecast and the news isn't good:

Snowpack as of March 1 ranged from 47 percent of average on the **Verde River** to 75 percent of average on

the **San Francisco** and **Upper Gila** rivers. In between: **Mogollon Rim** 48 percent; **Little Colorado River** headwaters 60 percent; upper **Salt River** 63 percent; **San Francisco Peaks** 66 percent; and the **Chuska Mountains** 71 percent.

The statewide snowpack is 54 percent of average.

Read more: <http://www.azcentral.com/members/Blog/ShawnMcKinnon/156791>

---

### [Asian pollution may trigger violations in U.S.](#)

Friday, March 2, 2012 at 12:12 PM

---

### [National parks bring AZ money, jobs](#)

Friday, March 2, 2012 at 11:39 AM



---

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>.

[Top of the Document](#)

---

## MEMBERS CORNER

---

### WEST's Wahlin Elected to USCID Board of Directors

**March 23, Tempe** – Brian Wahlin, Ph.D., P.E., D.WRE of WEST Consultants, Inc. has been elected to a three-year term on the Board of Directors for the U.S. Committee on Irrigation and Drainage (USCID) in Denver, Colorado.



Dr. Wahlin is a Senior Hydraulic Engineer with WEST and manages the firm's Tempe, Arizona office. He has more than 18 years of experience and is an expert in irrigation, hydrology, hydraulics, sedimentation, geomorphology, flow measurement techniques, and hydraulic laboratory studies. Dr. Wahlin is dedicated to improving operations and management of irrigation districts and is known for his unique solutions to complex problems. For example, he developed a training tool for canal operators, which allows them to operate a canal system via a hydraulic model in a manner similar to a flight simulator for training pilots.

Dr. Wahlin's duties on the USCID Board will include helping to educate member irrigation districts in the latest technological advances for irrigation and drainage projects. Dr. Wahlin is a Diplomate, Water Resources Engineer through the American Academy of Water Resources; Chair of the American Society of Civil Engineers/Environmental Water Resources Institute (ASCE/EWRI) Task Committee on Recent Advances in Canal Automation; and a member of USCID and ASCE/EWRI.

USCID is a nonprofit, professional society, whose multi-disciplinary membership shares an interest in the planning, design, construction, operation and maintenance of irrigation, drainage and flood control works; agricultural economics; water law; and environmental and social issues affecting irrigated agriculture.

WEST Consultants is a hydrologic and hydraulic engineering firm headquartered in Salem, Oregon with offices in Arizona, California, Oregon, and Washington.

[Top of the Document](#)

---

## JOB BOARD



---

This just in!!

The Water Resources Program at the Maricopa County Cooperative Extension office will be hiring one full-time undergraduate U of A student extern to work this summer. This is part of the 2012 University of Arizona Cooperative Extension Sustainability Externship Program. Students must be in the Phoenix area for 10 weeks during May-Aug 2012 and have an interest in water conservation, hydrology, sustainable landscapes, low impact development, and/or riparian areas. The student will have a variety of responsibilities including coordinating educational workshops, conducting tours, and developing partnerships. Interested students should contact Summer Waters at [swaters@cals.arizona.edu](mailto:swaters@cals.arizona.edu). More information about the Water Resources Program at the University of Arizona Cooperative Extension in Maricopa County can be found at <http://extension.arizona.edu/maricopa/water>.

---

Check these jobs out on the [AHS Jobs web page](#):

- [Summer Internships - City of Phoenix](#)
- [ENVIRONMENTAL SCIENTIST - City of Tucson](#)
- [Geotechnician - Schletter](#)
- [Water Services Project Coordinator - City of Phoenix](#)

[Top of the Document](#)

## 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 2012 membership was included in the 2011 Symposium registration fee!*

*The AHS Newsletter is edited by Christie O'Day, AHS Executive Director.*