

WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**

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The [Water Resources Research Center](#) - a research and [Extension](#) unit of the [College of Agriculture and Life Sciences](#)



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1. Sharon Megdal, Commissioner Drusina, Jerusalem Consul General Donald Blume, and Commissioner Roberto Salmón. November 21, 2016.

2. November 19, 2016 stop at the southern tip of the Sea of Galilee.

3. Sorek Desalination Plant, November 20, 2016

4. November 22, 2016 high-level meeting in Amman, Jordan. From left to right, H.E. Minister of Water and Irrigation Dr. Hazim El-Nasser, His Royal Highness Prince El Hassan bin Talal, U.S. Ambassador to Jordan Alice Wells, Commissioner Edward Drusina and Commissioner Roberto Salmón.

WRRC Director Sharon B. Megdal Accompanies IBWC Commissioners to the Middle East

WRRC Director Sharon B. Megdal had the honor of joining International Boundary and Water

Commissioners Edward Drusina (U.S.) and Roberto Salmón (MX) for five intensive days in the Middle East. The visit and field trips focused on matters related to the Jordan River and began with a briefing and tour of the Lower Jordan River provided by Mira Edelstein of EcoPeace Middle East.

The trip included three full days of site visits and briefings in Israel, the West Bank, and Jordan. Stops included a transboundary wastewater treatment plant, the largest reverse osmosis desalination plant in the world, the largest wastewater treatment plant in Jordan, and a large fresh water reservoir that serves the southern part of the West Bank. Top-level water officials in Jordan, Israel, and the West Bank discussed water challenges and potential opportunities, including those associated with the Red-Dead desalination project and water exchange. This effort involves Israel, the Palestinian Authority, and Jordan. Throughout the visit, the Commissioners spoke of the successful International Boundary and Water Commission (IBWC) mechanisms for cooperation, demonstrating that, through regular communications and official processes, solutions to transboundary water challenges are possible.

The last official function was participation in the international conference, "Water Security and Sustainable Development for our Common Future," which was hosted by EcoPeace Middle East and held at the Dead Sea in Jordan. Approximately 300 people attended the high-level panel of five basin commissioners and representatives. The panel was moderated by Dr. Megdal and featured keynote remarks by Commissioners Salmón and Drusina. Following the panel, the audience divided into two groups for more in-depth discussions, and the Commissioners and Dr. Megdal were panelists for the group focused on transboundary Jordan River cooperation.



IRRIGATED AGRICULTURE IN ARIZONA: A FRESH PERSPECTIVE

WRCR CONFERENCE 2017

TUESDAY, MARCH 28
UNIVERSITY OF ARIZONA
STUDENT UNION
TUCSON, ARIZONA

WRCR EVENTS

WRCR Brown Bag Seminar - Scientific Thinking to Remedy "Black Swans," "Wicked Problems,"

December 5, 2016

Time/Location: 12:00 - 1:15 p.m. / WRCR Sol Resnick Conference Room (350 N. Campbell Ave.)

Speaker: Dr. Victor R. Baker, Professor, Department of Hydrology and Atmospheric Sciences, University of Arizona



Science can be thought of in two mutually incompatible ways: (1) science-as-knowledge, serving as an authoritative basis for action, and (2) science-as-process-of-inquiry, serving as a continually updated guide to action. There is mounting evidence that overemphasis of science-as-knowledge is increasingly contributing to failures for the betterment of humankind. Among the most pressing issues are "Black Swans" (surprising extreme-impact events that exceed expected possibilities),

"Wicked Problems" (unique, seemingly endless questions without true or false answers, that get viewed from conflicting perspectives, and whose "solutions" lead to yet more wicked problems), and failures at achieving wise policy outcomes when science is misconstrued as an authoritative method for fixing belief. The use of abductive inference in scientific thinking, as a complement to the current overemphasis on inductive/deductive inference, can provide the key element for achieving scientific thinking that will make progress on many issues of current societal concern, ultimately leading to improved public understanding and appropriate political action.



If you can't make it to the live seminar on Dec. 5, join us online [here](#)

OTHER EVENTS

Presentation and Webinar - Recent Changes to Reclamation's WaterSMART Program



December 5, 2016

Time: 1:30 p.m.-- 2:30 p.m.

Location: Lower Colorado Regional Training Center, 500 Date Street, Boulder City, NV, Rooms 126.

To attend via Webinar, click [here](#) (password jM4472BS)

Conference Call Line: 1-702-294-5506 (no code needed)

The following will be discussed:

- WaterSMART Grants - including the new Small-Scale Water Efficiency Projects and Water Marketing funding opportunities
- Water Conservation Field Services Program
- Drought Response Program
- Cooperative Watershed Management Program
- Tips on applying for a grant under the WaterSMART Program

If planning to attend in person, please RSVP by COB Friday, December 2nd to Tina Mullis at tmullis@usbr.gov

Online Symposium - Rethinking Rivers, the Water Cycle and the Human Connection: A Systems Thinking Case Study

December 6, 2016

Time: 8:00 a.m. - 2:30 p.m. MST (AZ), 10:00 a.m. - 4:30pm. EST



Presenter: Kerry Schwartz, Director of Arizona Project WET, University of Arizona



The 2016 Cornell Systems Thinking Symposium will focus on the application of the fourth wave of systems thinking to a diverse set of critical problems. Special attention will be devoted to complex problems in both public policy and water. Throughout the day, a variety of expert practitioners will present including Kerry Schwartz, who will speak during the plenary session at 11:20 a.m. MST. Representatives from the US Military Academy at West Point, the Department of State, and leaders in water research and policy at the state and national level will share their insights during the event.

To register for the online event, click [here](#).

Desert LCC Webinar- Groundwater, Climate, and Stakeholder Engagement

December 7, 2016

Time: 12:00 p.m. Pacific, 1:00 p.m. (AZ) Mountain,
2:00 p.m. Central (Mexico City), and 3:00 p.m.
Eastern

Presenter: Susanna Eden, Water Resources
Research Center, University of Arizona



Stakeholder participation is a foundation of good water governance. In the Upper Santa Cruz River basin in Arizona, the University of Arizona Water Resources Research Center (WRRC) convened a project aimed at providing scientific underpinnings for groundwater planning and management. This webinar will cover the results of this project, entitled Groundwater, Climate, and Stakeholder Engagement (GCASE), during which stakeholders provided critical input to hydrologic modeling analyses using an innovative modeling framework for the Upper Santa Cruz River basin near Nogales, AZ.

To join the webinar and learn about Groundwater, Climate, and Stakeholder Engagement, click [here](#)

NEWS

NWRI Announces 2016-2017 Graduate Fellowship Recipients

The National Water Research Institute has announced five new Graduate Fellows for 2016-2017. Each was awarded \$10,000 to support their research projects related to developing and enhancing water supplies. Among those receiving fellowships is University of Arizona doctoral student, Mojtaba Azadi Aghdam. Mojtaba is pursuing a degree in Environmental Engineering under the supervision of Dr. Shane Snyder. His research, "A Novel Brine Precipitation with the Aim of Higher Water Recovery," seeks to increase the clean water recovery rate from

membranes using brine precipitation.

To read about all recipients and their research projects, click [here](#).



Abstract Submission Open for AZ Water Research Workshop

A call to all students! Abstract submission is now open for student poster presentations at the "Building Our Sustainable Water Future" workshop to be held at the PERA Club in Tempe on January 10, 2017. Posters can address any subject relevant to the Arizona water industry. Students submitting abstracts before December 20 can receive a discount registration rate of \$15! This opportunity to interact with water professionals from throughout Arizona is not to be missed!



For poster submission form and other information, click [here](#).

Math That Makes a Difference



5th graders at Mesquite Elementary in Casa Grande Elementary School District are acting to audit water use at bathroom faucets. The students work together, like the team shown here, to



measure the rate at which water flows from bathroom sinks, in milliliters per 5 seconds. After measuring the flow, students remove the old aerator and replace it with a new, water efficient aerator. The 5th grade teams then measure the flow rate again and help perform the calculations to determine that over 20,000 gallons will be saved each year at Mesquite Elementary due to the new aerators. They're doing math that means something! Implementing Arizona Project WET's School Water Audit Program (SWAP) is only one of the ways that the Casa Grande Elementary School District is partnering with Pinal County Cooperative Extension's Arizona Project WET Program.

To learn more about the School Water Audit Program, click [here](#).

Addressing the Groundwater Governance Challenge



WRRC Director Sharon B. Megdal, with Udall Center Interim Director Robert Varady and others, recently published a chapter in the book, *Freshwater Governance for the 21st Century*. The chapter provides overview and a better understanding of groundwater resources around the world, defines what makes them distinct, and describes principal elements employed in groundwater governance. The authors address the issues of governance of transboundary groundwater resources as well as relevant international legal frameworks.



To read the chapter in its entirety, click [here](#).

Improved Access to Santa Cruz Active Management Area Water Resource Data

In October, the WRRC announced a new website to access datasets relevant to water resource management in the Santa Cruz Active Management Area (SCAMA). It is now easier to browse the site and share it with other interested people at <https://warcat.hrcwater.org/SCAMA>.



The website, Water Resources and Climate Assessment Tool (WARCAT), is a one-stop portal that ingests and harmonizes real-time pertinent observed hydro-meteorological datasets from various agencies to present the current hydrologic conditions in historical perspective. In addition, WARCAT provides continuously updated local seasonal climate forecasts in conjunction with a first order hydrologic seasonal forecast. Web page descriptions and links to the original data sources are provided, along with useful links to other relevant information. The website developer, the Hydrologic Research Center in San Diego, worked with the WRRC to bring this website to SCAMA stakeholders and others, using funds from ADWR through an SCAMA Augmentation and Conservation Assistance Fund grant.

The WARCAT website is best used with a CHROME browser. If you previously had an issue with site authentication, the problem is now solved.

Advisory Panel on Emerging Contaminants Releases Report

The ADEQ-sponsored Advisory Panel on Emerging Contaminants (APEC) compiled a report documenting the most recent information on emerging contaminants in Arizona's water supplies. These contaminants are found in everyday items such as pharmaceuticals, personal care products, and food additives. The report documents available information on contaminants in Arizona's surface water, groundwater, reclaimed water, and drinking water. It also provides recommendations to ADEQ to improve identification, management, and communication regarding contaminant occurrence.



To view the entire report, click [here](#).

ANNOUNCEMENTS

ADWR Public Meeting for Northwest Basins Planning Area

The Arizona Department of Water Resources will hold a public meeting to examine water resource demand and challenges for the Northwest Basins Planning Area. The meeting will take place from 4 p.m. to 6 p.m, Tuesday, December 6, 2016 in Kingman, AZ in Building 200, MPR (240) at the Mohave Community College-Neal Campus.



To download or view the meeting agenda, click [here](#)

"Agua Dulce"- Restoring Santa Cruz River Flows Through Downtown Tucson

WRRC Associate Director Jean McLain and Tucson Water Director Tim Thomure, will be presenting information about potential social and environmental impacts of this project on the air with Ray Alan of KVOI Radio (1030 AM) on December 15th at noon. The project, called "Agua Dulce", would restore river flow using treated reclaimed water.

To read the AZ Daily Star article about the Santa Cruz River Plan, click [here](#).

Patagonia's Watershed-What the Research Tells Us

Friends of Sonoita Creek will host Dr. Laura Norman, Research Physical Scientist with the U.S. Geological Survey, on Saturday, December 17, 2016, at 10:00 a.m. in Cady Hall, Patagonia Library. Dr. Norman has spent 18 years modeling watersheds in the U.S. Mexico border region. This is a free presentation, all are welcome.

For more information about this presentation, click [here](#).

Water Conservation Field Services Program Grant

Recently grants.gov posted the funding opportunity announcement for the Phoenix Area Office Water Conservation Field Services Program Grant BOR-LC-17-001. Closing date for applications is January 23, 2017

For more information about this grant, click [here](#).

Additional funding and job opportunities can be found on the UA Water Network, [here](#).

2017 Land and Water Summit

The Xeriscape Council of New Mexico and the Green Infrastructure, Low Impact Development in Arid Environments group will hold the 2017 Land and Water Summit titled, *Growing Community Relationships: Just Add Water* on February 22-24, 2017, at the Sheraton Airport Hotel in Albuquerque, NM. Kieran Sikdar, Water Resources Engineer with Tucson based Watershed Management Group, will present, "Green infrastructure analysis of flood mitigation and financial costs/benefits in the Southwest".

To register for the 2017 Land and Water Summit, click [here](#).

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