

# WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

**WATER RESOURCES  
RESEARCH CENTER**



**January 13, 2023 / Volume 11, Issue 2**

The Water Resources Research Center - a research unit of the [College of Agriculture and Life Sciences](#) and an Extension unit in [UA Cooperative Extension](#) within the Division of Agriculture, Life & Veterinary Sciences & Cooperative Extension. [Land Acknowledgement](#).

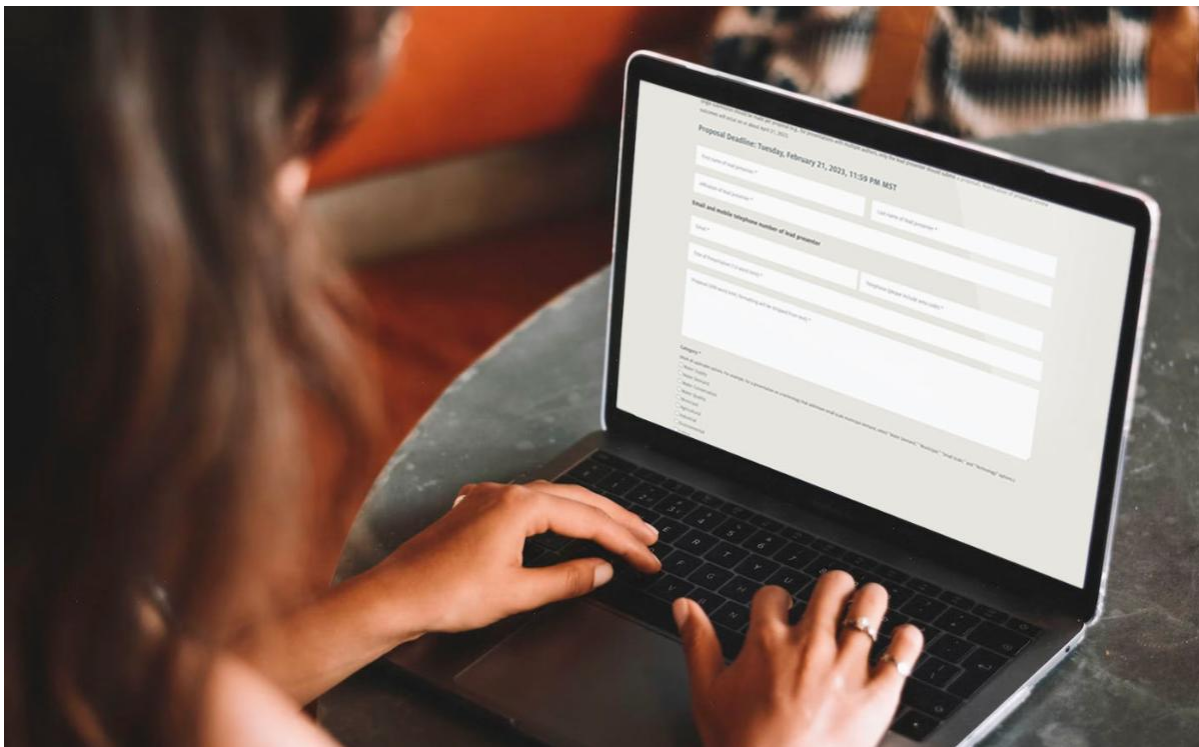
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## IN THIS ISSUE:

WRRC Call for Proposals, TAAP, USGS, APW, Family Farm Alliance, Tribal Water Rights



**WRRC Invites Proposals for  
2023 Annual Conference**

The University of Arizona Water Resources Research Center invites proposals for conference presentations and posters for its 2023 Annual Conference, *What Can We Do? Solutions to Arizona's Water Challenges*. Proposals should **offer solutions to the pressing water resource challenges** currently facing Arizona and the region. Drought in the Colorado River Basin may be foremost on many people's minds, but beyond this critical challenge, the pressures of growth and climate change continue to be troubling. For some, securing the next bucket of water is vital, while others focus on conservation. At the local scale, water contamination and groundwater overdraft are key issues, while some communities lack basic access to safe and adequate water service. The natural environment in many areas is threatened by drought and competing water uses, farmers are tasked with increasing water efficiency, and cities need effective strategies to ensure continued water security and reliability.

The WRRC 2023 Annual Conference will be held July 11 – 12, 2023, at the University of Arizona Student Union Grand Ballroom in Tucson, AZ. Proposals are invited for 10- to 15-minute Oral Presentations, 5- to 7-minute Highlight Talks, and Posters. Prizes will be awarded for the best student posters. Visit the WRRC website to view the [Call for Proposals](#).

[Read More](#)

## EVENTS

### WRRC Brown Bag Webinar: The 21<sup>st</sup> Century Water Quality Challenges for Managed Aquifer Recharge

**Date:** Jan 18, 2023

**Time:** 12:00 pm–1:15 pm Arizona Time

**Location:** [Webinar Only](#)



**Speaker:**

Yan Zheng, PhD, *Chair Professor, School of Environmental Science and Engineering, Southern University of Science and Technology, and Co-Chair for the International Association of Hydrogeologists' Managing Aquifer Recharge Commission*

The sustainability of groundwater is threatened by overexploitation and by pollution, exacerbated by perturbations of hydrological cycle stemming from climate change exerting poorly understood water quantity and quality risks with uncertain outcomes. A recent UNESCO publication on managed aquifer recharge (MAR) has provided unequivocal evidence that MAR is a sustainable nature-based engineering approach for enhancing climate resilience and other social, economic, and environmental benefits of groundwater. However, continued MAR implementation is challenged by over 80,000 synthetic chemicals in use by today's society, and emerging biohazards including viruses. This WRRC Brown Bag presentation discusses how MAR professionals may tackle the 21<sup>st</sup> century water quality challenges. New findings on incomplete biodegradation of antibiotics, a type of trace organic pollutants, will be described. Given the threat of a large number of novel chemical and biological entities, it is suggested that groundwater monitoring programs pay more attention to them when justified, especially when MAR is used to bank large quantities of groundwater. Policy recommendations will be presented.

[More Info](#)

[Register Here](#)

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## Upcoming Events

Jan 24 at 10:00 am: [Arizona Stakeholders' Meeting USDA - NIFA Project: Sustaining Groundwater and Irrigated Agriculture in the Southwestern United States Under a Changing Climate](#)

Jan 26 at 12:00 pm: [WRRC Brown Bag Webinar: Silent River Film Screening and Panel Featuring Mathew Moseley and Matt Rice of the Colorado River Basin Council for American Rivers](#)

Feb 1 at 3:00 pm AZ time (Feb 2 at 9:00 am Canberra, Australia time): [WRRC and Indigenous Resilience Center Co-Sponsored Special Event Featuring Australian Water Expert Bradley Moggridge](#)

Feb 15 at 12:00 pm: [WRRC Brown Bag Webinar: Sonoran Institute's Santa Cruz River Team Presentation on the Findings of the Latest Living River Reports](#)

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A graphic for the WRRC Chocolate Fest. On the left is a brown cylindrical container with the text "WRRC CHOCOLATE FEST" and "SAVE THE DATE". Below the container are icons for "PER 1 TROOP SERVING" and "NET WT 2.12 (1.87 OZ) 85g". The background is a red banner with white text on the right that reads "FEB 10 AT 3:30 PM WRRC CHOCOLATE FEST AND PHOTO CONTEST WINNER ANNOUNCEMENTS".

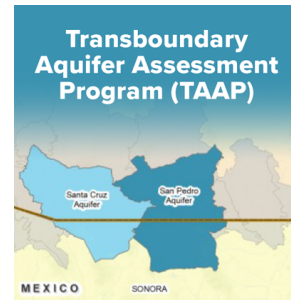


A graphic with a dark blue background. At the top, it says "MARK YOUR CALENDARS!". Below this, on the left, is a calendar icon with a green checkmark, showing "WRRC 2023 ANNUAL CONFERENCE". To its right is a green square with "JULY 11-12". On the far right is a photograph of a lake reflecting mountains under a cloudy sky. A small caption at the bottom right of the photo reads "Photo: Kim Holmas - Reflective Morning 2021 Green Valley - WRRC Photo Contest".

## NEWS

**WRRC Receives New 5-Year TAAP Grant and Reports on Past Accomplishments**

In 2017, the WRRRC started working on a five-year Transboundary Aquifer Assessment Program (TAAP) effort funded by the federal government (Award No. G17AC00439). A report of this five-year effort, which details extensive project accomplishments, was submitted to the US Geological Survey in December 2022 and is now posted on the [WRRRC TAAP website](#). On December 8, 2022, a new grant was issued for the upcoming five years, with funding committed for the first project year. Work envisioned through the initial grant period includes completion of the Binational Study of the Transboundary Santa Cruz Aquifer, continued collaboration via binational and regional meetings, monitoring efforts in the Arizona-Sonora aquifers of focus and assessment of the impact of climate variability and water management decisions on groundwater availability, work on an inventory and gap analysis of available transboundary water data, characterization of the socioeconomic context of selected border communities, and stakeholder engagement efforts to improve the knowledge base about the Arizona-Sonora transboundary aquifers.

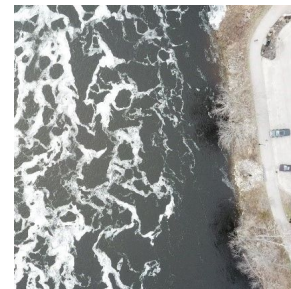


[WRRRC TAAP Website](#)  
[TAAP Report](#)

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## USGS Coordination Grant Awarded for Measuring River Flooding Events

As Arizona's federally authorized Water Resources Research Institute, the WRRRC helps administer USGS-funded Coordination Grants under the Water Resources Research Act. Dr. Jennifer Duan, professor of Hydraulics and Water Resource Engineering at the University of Arizona, has received a USGS Coordination Grant for her project titled "Standardizing Software and Processes for Image Velocimetry Gauging Methods." Duan's abstract states "Obtaining river discharge measurements during flooding events has long been a challenging and dangerous task in the Southwestern United States where flashy flow has high velocity and high sediment concentration." Image velocimetry methods offer the ability to estimate flow discharge through images captured remotely from cameras on the ground or mounted on unoccupied aircraft systems or satellites. Using remotely collected images enables researchers to estimate river flow discharge using imaging analytical methods, including PIV, PTV, and STIV. The project aims to evaluate and validate the applicability and accuracy of these approaches. A series of video images from reliable sources will be examined using different approaches. The result is a standardized procedure for processing remotely collected images for flow discharge estimates. Dr. Duan is joined by PhD student Kun Qi and a visiting scholar from Iraq, Khalid Asadi, who is also a former student of Dr. Duan. The researchers will collaborate with USGS Scientist Frank Engel on this two-year project.



[Read the Full Project Abstract Summary](#)



## Calling All APW Water Festival Volunteers!

APW is so excited to be getting back into the field, with many of its 2023 Water Festivals taking place in February and March. This means there are many opportunities for the

public to get involved and contribute to their communities at these fun-filled educational field days. Arizona Water Festivals help 4<sup>th</sup> graders across the state gain a deeper understanding of water in the Earth System and Arizona's water resources. Volunteers will be trained in how the Water Festival works so they can feel confident in guiding hands-on learning activities and teaching the students all about water. Then, at each Water Festival, volunteers will teach (or assist with) the lesson for which they were trained. APW will provide lunch and snacks throughout the day. This is a great opportunity to gain teaching experience, learn more about water, and serve your community. Community volunteers play a vital role in making the Water Festival Program a success and the APW team truly appreciates your commitment, which drives positive impacts for water conservation in Arizona.



[Read More](#)

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## Upcoming Family Farm Alliance Annual Conference

On February 23 and 24, Family Farm Alliance will hold its 2023 annual meeting and conference, *A Wake-Up Call for America: Why Farms, Water and Food Matter*, in Reno, NV. The conference will be “an opportunity for producers, policymakers, and water professionals from throughout the West to focus on topics of critical concern.” This conference echoes themes from the WRRRC 2022 Annual Conference, *Arizona’s Agricultural Outlook: Water, Climate, and Sustainability*. You can view recordings and other conference materials from the 2022 WRRRC conference [here](#). A draft agenda for the 2023 Family Farm Alliance conference has been posted—though it is still subject to change—including keynote talks from Interior Department Assistant Secretary for Water and Science, Tanya Trujillo; Chairman of the House Committee on Natural Resources’ Subcommittee on Water, Oceans, and Wildlife, Oregon Rep. Cliff Bentz; and retired General Manager of the Westlands Water District in Fresno, CA, Tom Birmingham. Panels will include a Reclamation roundtable, discussion of forestry and agriculture solutions, perspectives from Congressional staffers, discussion of Colorado River agricultural water management and policy challenges, and more. The deadline for early registration is January 27.

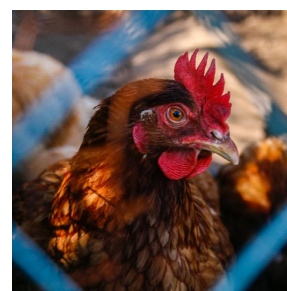


Image: Daisy, Pexels.com

[More Info](#)  
[WRRRC 2022 Conference](#)

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## Legislation Signed Affecting Tribes’ Water Rights

The new year brought federal action on pending water rights issues for three of Arizona’s Native Tribes. This month, President Biden signed legislation sought by the Colorado River Indian Tribes (CRIT), Hualapai Tribe, and White Mountain Apache Tribe. The CRIT now has the right to lease its Arizona water rights, enabling the Tribe to make full use of the 719,000 acre-feet of Colorado River water to which it is entitled. This change benefits not only CRIT and potential lessees, but also will reinforce the commitment of CRIT to protect Lake Mead



from falling to dangerously low levels. For the Hualapai Tribe, years of negotiations have culminated in legislation that affirms their rights to up to 3,414 acre-feet of water per year of leasable Colorado River water and authorizes more than \$310 million for their water delivery system. Funds and time were also added to the White Mountain Apache Tribe's 2010 water rights settlement for the completion of their rural water system and dam.

## [News Article](#)

# WATER JOBS

- University of Nevada, Las Vegas [Assistant Professor in Sustainability of Arid Lands \(Multiple Positions\)](#)
- US Department of the Interior [Multiple Positions](#)
- US Water Alliance [Multiple Positions](#)

Please visit [WRRC's website](#) for a complete listing of water jobs & opportunities.

# ANNOUNCEMENTS

- **Jan 15:** [Campus Sustainability Fund Annual Grants – Preliminary Application Deadline](#)
- **Jan 16:** [NGWA Conference: Managed Aquifer Recharge: Unleashing Resiliency, Protecting Groundwater Quality – Abstract Submission Deadline](#)
- **Jan 18:** [US EPA Office of Water, Water Reuse Program Webinar – Water Recycling in Israel: US lessons from Israel's Water Reuse Approach](#)
- **Jan 18:** [WRRC Brown Bag Webinar: The 21<sup>st</sup> Century Water Quality Challenges for Managed Aquifer Recharge](#)
- **Jan 23:** [Drinking Water Regulations – Prohibition on Lead Use Rulemaking – Deadline for Public Comment](#)
- **Jan 24:** [Arizona Stakeholders' Meeting USDA - NIFA Project: Sustaining Groundwater and Irrigated Agriculture in the Southwestern United States Under a Changing Climate](#)
- **Jan 26:** [WRRC Brown Bag Webinar: Silent River Film Screening and Panel Featuring Mathew Moseley and Matt Rice of the Colorado River Basin Council for American Rivers](#)
- **Jan 27:** [2023 Family Farm Alliance Annual Conference: “A Wake-Up Call for America: Why Farms, Water and Food Matter” – Early Registration Deadline](#)
- **Jan 27:** [Fifth National Climate Assessment Call for Public Comment – Submission Deadline](#)
- **Jan 30:** [2023 UCOWR/NIWR Annual Water Resources Conference – Abstract Deadline](#)
- **Jan 30:** [Arizona Association of Women in Water & Agriculture: Wine, Women & Water](#)
- **Jan 31:** [Arizona Association of Women in Water & Agriculture: Annual Meeting & Networking Conference](#)
- **Feb 1 at 3:00 pm AZ time (Feb 2 at 9:00 am Canberra, Australia time):** [WRRC and Indigenous Resilience Center Co-Sponsored Special Event Featuring Australian Water Expert Bradley Moggridge](#)
- **Feb 1:** [90<sup>th</sup> Annual Western Snow Conference – Call for Papers Submission Deadline](#)
- **Feb 6-7:** [Groundwater Resources Association of California Conference: Climate Resilient & Sustainable Remediation](#)

- **Feb 10:** [WRRC Chocolate Fest/Photo Contest Winner Announcements – Save the Date!](#)
- **Feb 15:** [Arizona Water Protection Fund Commission Public Hearing](#)
- **Feb 15:** [WRRC Brown Bag Webinar: Sonoran Institute’s Santa Cruz River Team Presentation on the Findings of the Latest Living River Reports](#)
- **Feb 15:** [Call for Papers: JCWRE Special Issue on Undergraduate Research and Education – Submission Deadline](#)
- **Feb 16:** [A Meeting of Sacred Waters 2023](#)
- **Feb 16:** [Santa Cruz River Research Days – Call for Abstracts Deadline](#)
- **Feb 23:** [AZ Conservation Professional Training: Residential Water Use and Field Training](#)
- **Feb 23-24:** [2023 Family Farm Alliance Annual Conference: “A Wake Up Call for America: Why Farms, Water and Food Matter”](#)
- **Feb 24:** [2023 Land and Water Summit – Registration Deadline](#)
- **Feb 26:** [2023 WaterReuse Symposium – Advance Registration Deadline](#)
- **Mar 1:** [Babbitt Center Dissertation Fellowship Program – Application Deadline](#)
- **Mar 1-3:** [2023 Land and Water Summit](#)
- **Mar 5-8:** [2023 WaterReuse Symposium](#)
- **Mar 6-8:** [Growing Water Smart: Integrated Water and Land Use Planning Workshop](#)
- **Mar 9-10:** [Sustainable Water Investment Summit](#)
- **Mar 13-17:** [UC Davis Soil & Water Assessment Tool \(SWAT\) Model Training Course](#)
- **Apr 3:** [Rodney Blaine Lewis Scholars Award – Application Deadline](#)
- **Apr 17-20:** [90<sup>th</sup> Annual Western Snow Conference](#)
- **Apr 24-25:** [NGWA Conference: Managed Aquifer Recharge: Unleashing Resiliency, Protecting Groundwater Quality Conference](#)
- **May 7-10:** [National Association of Environmental Professionals \(NAEP\) 2023 Conference](#)
- **May 8-9:** [Water for Food Global Conference: Cultivating Innovation: Solutions for a Changing World](#)
- **May 19:** [NAMWUA Water Utility Leadership Forum](#)
- **Jun 13-15:** [UCOWR/NIWR 2023 Annual Water Resources Conference](#)
- **Jul 11-12:** [WRRC 2023 Annual Conference – Save the Date!](#)
- **Jul 17-19:** [AWRA 2023 Summer Conference: Connecting Land & Water for Healthy Communities](#)

## PUBLICATIONS & MEDIA

### Jan 5, 2023, CAWCD Board Meeting Recap

Five Maricopa County Board Members take office and Board celebrates General Manager Ted Cooke’s last Board meeting before retirement. [More Info](#)

### Paper on Upper Colorado River Basin Water Availability Assessments

Tillman, Fred D, Natalie K. Day, Matthew P. Miller, Olivia L. Miller, Christine A. Rumsey, Daniel R. Wise, Patrick C. Longley, and Morgan C. McDonnell. 2022. "A Review of Current Capabilities and Science Gaps in Water Supply Data, Modeling, and Trends for Water Availability Assessments in the Upper Colorado River Basin" *Water* 14, no. 23: 3813.

<https://doi.org/10.3390/w14233813>

### Security and Sustainability Forum Webinar Archive

The Security and Sustainability Forum archive of past webinars is organized into Webinar Tracks, sorted by topics such as Going Green, Resilience, Resource Management, and Policy & Equity. The webinars are free to view. [Watch Here](#)

### ADWR Assured and Adequate Water Supply Map

This interactive map provides a wealth of information about recharge facilities, registered wells, water providers, and more. [View Map](#)

## OTHER NOTICES

### **WRRC 104b Grant Request for Proposals Coming in January**

The WRRC's FY 2023 call for 104(b) research grant proposals has been delayed by national-level changes to the 104(b) program schedule. Interested researchers at any of Arizona's three universities should look for the Request for Proposals (RFP) in January 2023. As usual, the RFP will invite proposals with strong student involvement for research on regionally relevant water issues. The WRRC evaluates proposals and selects the individual projects to include in the full proposal it submits to the US Geological Survey (USGS) as part of the Water Resources Research Act program. In this cycle, the selection is likely to occur in March 2023. No important changes in requirements or selection criteria are expected. According to the new schedule, the project year has shifted by six months. The USGS will issue the official RFP in March 2023, and award recipients will be notified around September 1. During this transition period, the WRRC, like other national water institutes generally, is not waiting for the official RFP to solicit research proposals. [More Info](#)

### **UA Arizona Campus Sustainability Fund: Call for Mini Grant Proposals**

The Campus Sustainability Fund invites all students, faculty, and staff members to submit proposals for the spring 2023 Mini Grant application cycle. Funding requests can range from \$250 - \$5,000. For the best chance at being funded, apply early. Each Mini Grant requires a Preliminary Application and a Final Application. Preliminary applications are due no later than February 19. Approved projects will be notified on a rolling basis. [More Info](#)

### **Feasibility Assessment Draft: Establishing New Instream Flow and Water Level Conservation Center**

After two years of hard work, the Instream Flow Council and American Fisheries Society draft feasibility assessment to establish a national instream flow and water level conservation training and research center is now available for download and review. The Steering Committee is currently seeking public review and online feedback on this document from all interested stakeholders for accuracy, relevance, and need for this Center. The deadline for responses is February 6, 2023. [More Info](#)

### **Spring 2023 Maricopa County Smartscape Course**

Registration is open! Smartscape is a comprehensive, research-based professional training program specifically designed to educate landscape professionals on the fundamentals of designing, installing, irrigating, and maintaining attractive water-efficient landscapes. This Smartscape course delivers 20 hours of high-quality education on the best irrigation and horticultural practices for the desert southwest. The Spring 2023 Smartscape course will be held Tuesdays and Thursdays, February 7 – March 9, 3:00 pm – 6:00 pm at the Maricopa County Cooperative Extension in Phoenix. [More Info](#)

### **WaterSMART Environmental Water Resources Projects Funding Opportunity**

The Bureau of Reclamation will provide Federal financial assistance for Environmental Water Resources Projects. These include water conservation and efficiency projects that meet specific criteria. The fiscal year 2023 Environmental Water Resources Project funding opportunity is expected to be posted to grants.gov in early to mid-January. Information about program requirements and project eligibility is available on the Reclamation website. [More Info](#)

Do you have a story idea, water job announcement, or event to share?



[Contact us here](#)