

# WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

**WATER RESOURCES  
RESEARCH CENTER**



**April 28, 2023 / Volume 11, Issue 17**

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:** Mohave County Factsheet, Seminar Recap, New Extension Director, Babbitt Dissertation Fellowship, New Student Assistant

The image shows the cover of the 'Arizona Water Factsheet Mohave County' report. The cover features a map of Arizona with Mohave County highlighted, a 'Historic Route 66' shield, and the title 'MOHAVE COUNTY' in large white letters. The report includes sections on 'Water in Arizona', 'Arizona Water Supply and Demand', and 'Water in Mohave County'. A pie chart titled 'Arizona Water Supply and Demand' shows the following data:

Category	Value	Percentage
Surface Water	3,238 MGD/Day	12%
Groundwater	2,760 MGD/Day	88%
Reclaimed Water	154 MGD/Day	5%
Municipal	1,240 MGD/Day	39%
Industrial	76 MGD/Day	2%
Residential	476 MGD/Day	16%

The report also includes a 'Statewide Context' map and a 'Water in Mohave County' section. The background of the cover features a green and blue color scheme with a water tower and a 'Welcome to Mohave County' sign.

## Mohave County Factsheet Release

The fourth installment in the WRRC's Arizona Water Factsheet initiative is now available! The Mohave County Water Factsheet provides a general overview of local water resources, as well as insights about how communities adjacent to the Colorado River work to improve their water supply resilience in the face of drought and a rigid regulatory context. While long-term drought and water shortages directly impact the county, water-related recreation in Mohave County is an important related part of the conversation. The county provides public access to three major reservoirs of the lower Colorado River: Lakes Mohave, Havasu, and Mead. Acknowledging the unique characteristics, priorities, and values of Mohave County, the WRRC collaborated with local experts to guide the content and showcase existing water-related data. The Mohave County Factsheet

Technical Advisory Committee included Mohave County Cooperative Extension Director Andrew Brischke, Mohave County Water Authority, the City of Kingman, Lake Havasu City, Bullhead City, and several other county representatives. Additional stakeholders provided input reflective of the deep local knowledge about the county's water resources and management. Factsheets are available for Maricopa, Pima, Cochise, and Mohave Counties, and work is well underway for Graham, Greenlee, and Yavapai Counties! Follow the series and read about water in each county on our dedicated Arizona Water Factsheet website.

[Mohave County Factsheet](#)  
[AZ Water Factsheets](#)

## EVENTS

### WRRC Seminar Series: Preparing for Shortages on the Colorado River: The Activities of the Arizona Water Banking Authority

**Date:** Tuesday, May 2, 2023

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

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



**Speaker:** Rebecca Bernat, *Water Resources Specialist Associate & Technical Administrator, AWBA*

Established in 1996 to store an unused portion of Arizona's Colorado River entitlement, the Arizona Water Banking Authority (AWBA) provides backup supplies in times of shortages for certain fourth-priority Colorado River users (through a process called firming) and Nevada. With the first-ever Colorado River shortage declaration by the Secretary of the Interior in 2022, the AWBA transitioned to its next phase, making its stored water supplies available to meet its responsibilities. In this WRRC webinar, Dr. Bernat will talk about the ways in which the Water Banking Authority is preparing for shortages, from firming the Gila River Indian Community to recovery planning with partners in the Phoenix, Pinal, and Tucson active management areas.

[Register Here](#)  
[More Info](#)



**WRRC 2023**  
Annual Conference

**WHAT CAN WE DO?**  
SOLUTIONS TO ARIZONA'S WATER CHALLENGES

**JULY 11 – 12, 2023**  
University of Arizona Student Union  
Grand Ballroom, Tucson, AZ

**REGISTRATION NOW OPEN!**

Photo: Stephen Cumberworth - "Rainfall", Tucson, AZ  
WRRC 2022 Photo Contest

# WRRC 2023 Annual Conference: What Can We Do? Solutions to Arizona's Water Challenges

**Date:** July 11–12, 2023

**Times:** 9:30 am – 5:00 pm (Jul 11), 8:00 am – 5:00 pm (Jul 12) Arizona Time

**Location:** [UArizona Student Union Grand Ballroom](#)

Registration is now open for the University of Arizona Water Resources Research Center's 2023 Annual Conference, *What Can We Do? Solutions to Arizona's Water Challenges*. The [conference program](#) aims to address the pressing water resource challenges currently facing Arizona and the region by bringing forward ideas that offer pathways to water security for all. The two-day program will feature sessions on working with nature, improving farming practices, adapting policy, utilizing technology, and more! There will also be ample opportunity for networking to continue the solution-focused discussions of the conference. Thanks to the generosity of our sponsors, early bird registration will be \$110 (\$65 for a single day), until June 14. We are also pleased to offer student registration for only \$30. For those who cannot make it to Tucson, we are offering non-interactive livestreaming at no charge (registration coming soon!). We hope to see many of you in Tucson this July!

[Register Here](#)  
[More Info](#)

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## Upcoming WRRC Events

May 3 at 12:00 pm: [NVIS Seminar Series: Indigeponics: Indigenizing Controlled Environment Agriculture and Off-Grid CEA Greenhouse for Food Production: A Collaborative Pilot Project between Diné College and the University of Arizona](#)

May 17 at 12:00 pm: [WRRC Seminar Series: Green Infrastructure in Tucson, AZ](#)

Jun 1 at 12:00 pm: [WRRC Seminar Series: Homeowners Associations – An Overlooked Water Sustainability Opportunity in the Desert: 2023 Update](#)

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## External Events

May 18-19: [CLE International's Law of the Colorado River 23<sup>rd</sup> Annual Conference: The Next Century of River Policy](#)

Aug 3-4: [31<sup>st</sup> Annual Arizona Water Law Conference](#)

## NEWS

### WRRC Seminar Compares Arizona and Nevada Golf Course Water Management

On April 19, the WRRC hosted a webinar presentation from golf course agronomist Tim Cloninger, titled "Golf Course Water Usage: Effective Policy and Effective Water Efficiency Strategies." Cloninger provided an overview of water management strategies and

regulation for golf courses, drawing on 20 years of turfgrass management experience and work in both Arizona and Nevada. Focusing on golf courses within the Phoenix Active Management Area, Cloninger described the history of Arizona golf course water policy. In 1985, the Arizona Department of Water Resources (ADWR) began regulating golf course water allotments. Currently 54% of AZ golf courses use at least some groundwater, and are regulated by Annual Conservation Allotments. According to ADWR's 5<sup>th</sup> Management Plan, "The allotment formula is intended to encourage efficient design, construction, water application, and to acknowledge limited overseeding practices." As a comparison to Arizona's approach, Cloninger described the policies implemented by the Southern Nevada Water Authority (SNWA) to regulate use of potable water. Adopted in in 2003, SNWA limited new golf courses to five acres per hole, and established a water budget of 6.3 acre-feet per irrigated acre. They have also invested in heavily in converting turf to low water use landscaping. Speaking to the future, Cloninger suggested that golf courses should utilize Tif-Tuf Bermuda grass, a warm season turf, to conserve water in the hot and dry climate of the southwest. He also discussed strategies for improved efficiency in irrigation, including tools that monitor soil moisture. The recording of the webinar is available on the WRRRC website.



- [View the Recording](#)
- [More Info](#)
- [ADWR 5<sup>th</sup> Management Plan](#)

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## Ed Martin Named Director of AZ Cooperative Extension

Effective April 17, 2023, Dr. Edward C. Martin has accepted the position of Associate Vice President and Director of the Arizona Cooperative Extension System. Since 2021, Dr. Martin has served as Interim Director of Cooperative Extension. Shane Burgess, Vice President for Agriculture, Life & Veterinary Sciences, and Cooperative Extension, wrote in a welcome letter that "Ed's expertise and existing statewide trust in water is consistent with what our existing stakeholders, and other sources of information, tell us is the most important issue in Arizona today and its most likely future." Burgess also noted that in his two years as Interim Director, Dr. Martin "has led through many pandemic-related and other major challenges; managed business and finance flawlessly, led economic and functional impact analyses of all CES programs; worked with UA Government and Community Relations to successfully secure \$22.05M in additional state support; supervised the TEconomy CES Economic Impact report showing that Arizona CES has one of the largest returns on state investment of any state measured; initiated, led and managed a statewide needs assessment that will inform a new strategic action plan; and began 30 ongoing CES faculty searches." As a unit within Cooperative Extension, the WRRRC would like to congratulate Dr. Martin on his new role!



[More Info](#)

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## Simone A. Williams Wins Prestigious Babbitt Dissertation Fellowship



We congratulate Simone A. Williams, Graduate Research Associate at the WRRC and a PhD Candidate in the Arid Lands Resource Sciences GIDP, who has been awarded a Babbitt Dissertation Fellowship to support her dissertation research! This competitive and prestigious fellowship is granted by The Lincoln Institute of Land Policy, to support US university students whose dissertation research shows strong potential to support the integration of land and water policies, contributes to advancing water sustainability and resilience, and has significant public impact, especially in western states. The fellowship is administered through the Babbitt Center for Land and Water Policy. Simone's dissertation research focuses on enhancing groundwater vulnerability and contamination risks in Arizona using interdisciplinary methods and models to understand differential impact and outcomes of groundwater and land use policies.



[Read More](#)

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## WRRC Welcomes New Student Communications Assistant

The WRRC is pleased to welcome Catherine Hill to its team as the new Student Communications Assistant. She has been a journalist at UArizona, working for KAMP News, since February 2022, where her primary focus is to produce music-related news. She also interned at iSaw International through the Honors College and at Pride Alliance through the LGBT+ Center as part of the marketing and outreach team. Prior to these two internships, Hill graduated from Coconino Community College with an associate's degree in General Studies. While there, she worked as a tutor in the TRIO department coaching students individually, directing open study hours, and creating supplemental video content and also designed and published two magazines: OnCourse and Curios. Most recently, she served as a juror for the 2023 Tucson Festival of Books and is working on her bachelor's degree in Journalism at UArizona. Welcome, Catherine!



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**CORRECTION:** Simone A. Williams, mentioned in last week's edition, is a current WRRC Graduate Research Associate.

## WATER JOBS

- ADWR [Water Resources Specialist 3 \(Council Coordinator\)](#)
- Friends of the San Pedro River [Retail Specialist](#)
- SRP [Water Conservation Coordinator](#)
- UArizona [Assistant/Associate Agent, Agriculture and Natural Resources](#)
- WateReuse [Technical and Regulatory Program Manager](#)

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

# ANNOUNCEMENTS

- **Apr 30:** [AHS Academic Scholarships – Application Deadline](#)
- **Apr 30:** [AHS 2023 Avery Intern Scholarship – Application Deadline](#) **EXTENDED!**
- **May 1:** [AWRA Richard A. Herbert Scholarship – Application Deadline](#)
- **May 1:** [AWRA 2023 Diversity, Equity, & Inclusion Professional Development Scholarship – Application Deadline](#)
- **May 1:** [AWRA Awards Program – Nomination Deadline](#)
- **May 2:** [WRRC Seminar Series: Preparing for Shortages on the Colorado River: The Activities of the Arizona Water Banking Authority](#)
- **May 3:** [NVIS Seminar Series: Indigeponics: Indigenizing Controlled Environment Agriculture and Off-Grid CEA Greenhouse for Food Production: A Collaborative Pilot Project between Diné College and the University of Arizona](#)
- **May 4:** [CAP Board Meeting](#)
- **May 5:** [ADWR & CAP Joint Colorado River Shortage Briefing](#)
- **May 5:** [One Health 2023 Spring Symposium: Water is Life](#)
- **May 5:** [32<sup>nd</sup> Desert Horticulture Conference](#)
- **May 7-10:** [National Association of Environmental Professionals \(NAEP\) 2023 Conference](#)
- **May 8-11:** [Water for Food Global Conference: Cultivating Innovation: Solutions for a Changing World](#)
- **May 8-12:** [Arizona Water Professionals Appreciation Week](#)
- **May 9:** [2023 Western Drought Webinar](#)
- **May 9-10:** [2023 Corridors, Connectivity, and Crossings Conference](#)
- **May 9-11:** [96<sup>th</sup> Annual AZ Water Conference & Exhibition](#)
- **May 12:** [AWRA 2023 Annual Water Resources Conference – Abstract Deadline](#)
- **May 17:** [WRRC Seminar Series: Green Infrastructure in Tucson, AZ](#)
- **May 18-19:** [CLE International's Law of the Colorado River 23<sup>rd</sup> Annual Conference: The Next Century of River Policy](#)
- **May 18-20:** [Climate Change Preparedness Conference](#)
- **May 19:** [NAMWUA Water Utility Leadership Forum \(WULF\)](#)
- **May 19:** [WIFA Water Conservation Grant Fund – Application Deadline](#)
- **May 23-25:** [Rural Water Association of Arizona 2023 Annual Spring Conference](#)
- **May 24:** [AWRA 2023 Webinars: Is the Maternal Wall Causing a Critical Leak in the STEMM Pipeline?](#)
- **May 30:** [AAWWA Wine, Women & Golf](#)
- **May 31:** [AAWWA Colorado River Update](#)
- **May 31:** [US Water Prize 2023 – Application Deadline](#)
- **May 31:** [NWRI Fellowship Program 2023-24 – Application Deadline](#)
- **Jun 1:** [WRRC Seminar Series: Homeowners Associations – An Overlooked Water Sustainability Opportunity in the Desert: 2023 Update](#)
- **Jun 13-15:** [UCOWR/NIWR 2023 Annual Water Resources Conference](#)
- **Jun 15:** [WaterReuse Arizona 2023 Scholarship – Application Deadline](#)
- **Jun 15-16:** [2023 Next Generation Water Summit](#)
- **Jul 11-12:** [WRRC 2023 Annual Conference: What Can We Do? Solutions to Arizona's Water Challenges](#)
- **Jul 17-19:** [AWRA 2023 Summer Conference: Connecting Land & Water for Healthy Communities](#)
- **Jul 23-25:** [Arizona Water Reuse 2023 Symposium](#)
- **Aug 3-4:** [31<sup>st</sup> Annual Arizona Water Law Conference](#)
- **Sep 12:** [AWRA 2023 Annual Water Resources Conference – Student Poster Deadline](#)
- **Sep 13-16:** [Arizona Hydrological Society 35<sup>th</sup> Annual Symposium](#)

## PUBLICATIONS & MEDIA

### **JAWRA Early View Article on Riverine Flooding**

Cockburn, Charlotte, Jonathan M. Winter, Erich C. Osterberg, and Francis J. Magilligan. "Drivers of future streamflow changes in watersheds across the Northeastern United States." *Journal of the American Water Resources Association* 00 (2023): 1–19. <https://doi.org/10.1111/1752-1688.13120>.

### **Western Water Article: Upper Basin States Seek Added Leverage to Protect Their River Shares**

The states of the Lower Colorado River Basin have traditionally played an oversized role in tapping the lifeline that supplies 40 million people in the West. California, Nevada, and Arizona were quicker to build major canals and dams and negotiated a landmark deal that requires the Upper Basin to send predictable flows through the Grand Canyon, even during dry years. But with the federal government threatening unprecedented water cuts amid decades of drought and declining reservoirs, the Upper Basin states of Wyoming, Utah, Colorado, and New Mexico are muscling up to protect their shares of an overallocated river whose average flows have already dropped 20% over the last century.

[More Info](#)

### **Drought-Stressed Plants Emit Sound**

Khait, Itzhak, et al. "Sounds emitted by plants under stress are airborne and informative." *Cell* Volume no. 186, Issue 7 (2023): 1328-1336.

<https://doi.org/10.1016/j.cell.2023.03.009>.

## OTHER NOTICES

### **ADEQ Invites Comments**

On April 21, 2023, the comment period begins for the Groundwater Rule Clarification and Citation Cleanup rulemaking. The comment period ends on May 22, 2023. [More Info](#)

### **WIFA Water Conservation Grant Program Now Open**

The Water Conservation Grant Fund (WCGF) exists to provide financial resources to eligible entities for the purpose of conserving Arizona's water supply. A wide range of projects and programs may be eligible for WCGF funding. Eligible entities may apply for up to \$250,000 per project or \$3,000,000 per program. A 25% match is required. Cities, towns, counties, districts, commissions, authorities, or other public entities that are organized and exist under the statutory law of Arizona or a voter-approved charter or initiative of Arizona are eligible to apply. Additionally, non-governmental organizations (NGOs) may apply in partnership with one of the entities described above. This first round of applications will be open for four weeks and closes on May 18 at 5:00 pm. [More Info](#)

### **Registration Open for One Health Spring 2023 Symposium: "Water is life"**

Faculty from across the University of Arizona will share their research and insights into water under the One Health umbrella. WRRRC Director Sharon B. Megdal will give an opening address, "One Water, OneHealth, One Earth," which highlights the OneHealth idea of using and reusing water to meet human and environmental needs. Keynote speaker John H. Postlethwait, professor of biology at the University of Oregon's Institute of Neuroscience, will discuss integrating human, animal, and environmental health using fish as models. One Health is an approach that recognizes the interconnections in health

and wellness among people, animals, plants, and our shared environment. It integrates expertise in human, animal, and environmental health to improve health outcomes, better respond to public health challenges, assure safe and healthy food and water, and protect global health security. [More Info](#)

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

[Contact us here](#)