

WEEKLY WAVE



THE UNIVERSITY OF ARIZONA
COOPERATIVE EXTENSION

WATER RESOURCES RESEARCH CENTER



October 20, 2023 / Volume 11, Issue 29

The Water Resources Research Center - a research unit of the [College of Agriculture, Life and Environmental 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: Imagine a Day Without Water, Seminar Recap, CSA Policy Summit, Photo Contest, WINDS Model Study, New Accountant, USGS Tribal Open House

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Imagine a Day Without Water
October 19, 2023

Imagining a Day Without Water – Water Security in Arizona

On October 19, the US Water Alliance organized its 9th annual *Imagine a Day Without Water* campaign to raise awareness of issues of water security and to promote investment

in our water systems. In recognition of this national call to action, the WRRC dug into some of the available water security data in Arizona.

For many throughout Arizona, imagining a day without water is not an academic exercise or thought experiment, it is a reality. For example, on the Navajo Nation, residents are **67 times more likely** than other Americans to live without access to running water. This is the reality for many, not only on Tribal lands but also in rural and underserved communities throughout the state. These populations must haul water, sometimes from great distances (and at significant cost), for even basic needs such as drinking, cooking, and washing. Contemplating issues of water access and security, this analysis seeks to highlight the precarious characteristics of water access in many communities in Arizona that receive water delivered by public water systems.

[Read More](#)

EVENTS

WRRC 2024 ANNUAL CONFERENCE
Implementing Water Solutions Through Partnerships

SAVE MARCH
THE DATES **12-13**



CALL FOR ABSTRACTS

The University of Arizona Water Resources Research Center invites abstracts for conference presentations and posters describing projects that implement solutions to Arizona's water resources challenges.

- **Water and Nature**
- **Infrastructure and Augmentation**
- **Water, Energy, and Food**
- **Other Solutions**

Image: Clayton B. Lyon

WRRC Water Webinar: Empowering Arizona's Water Resource Management: Navigating Equity, Economic, and Ecological Challenges with Cutting-Edge Decision-Support Tools

Date: Monday, October 23, 2023
Time: 12:00 pm – 1:00 pm Arizona Time
Location: [Zoom](#)



Speaker:
Abu Mansaray, PhD, *Research Project Manager, Oklahoma Water Resources Center, Division of Agricultural Science and Natural Resources, Oklahoma State University*

Assuring sustainable supply of clean water is plagued by a complex web of challenges that collectively constitute a wicked water problem. Rapid population growth and diversification, coupled with the adverse impacts of climate change, strain already limited water resources. Technology continues to reveal emerging contaminants, raising new concerns about the safety of existing water supply sources, and further constraining the ability to provide safe water to meet growing demands. These challenges have far-reaching consequences, affecting not only vulnerable human populations and biodiversity, but also industries such as agriculture, manufacturing, and municipalities. Arid and semi-arid regions, at the frontline of these challenges, hold a unique opportunity to lead the world in tackling these complex water problems. This talk offers an opportunity to bolster the already ongoing leadership roles of the University of Arizona, through the Water Resources Research Center, in promoting actionable science to develop tools that help us navigate complex water resources challenges. This WRRRC webinar presentation highlights examples of utilizing geospatial and modeling approaches to leverage engagement with stakeholders in the pursuit of answering piquing questions about water resource problems.

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

Upcoming WRRRC Water Webinars

Oct 31: [Advancing Water Sustainability: A Vision for Research and Engagement at the University of Arizona Water Resources Research Center](#)

Speaker: Jamie McEvoy, PhD, *Associate Professor of Geography, Department of Earth Sciences, Montana State University*

Nov 2: [Capacity, Performance, and Collaborative Planning in Water Governance](#)

Speaker: Emily Bell, PhD, *Assistant Professor of Public Administration and Policy, School of Public and International Affairs, University of Georgia*

Nov 28: [WRRRC Water Webinar: 104\(b\) Student Research Presentations](#)

Nov 30: [WRRRC Water Webinar: 104\(b\) Student Research Presentations](#)



Upcoming WRRRC Co-Sponsored Events

Oct 30: [ENVS Colloquium Series: The Arizona Water Innovation Initiative: A Thriving Water Future for the Benefit of All of Arizona](#)

Nov 7: [NVIS Fall 2023 Seminar: From Metal Mining to Data Mining: How Indigenous Data Governance Supports Indigenous Sovereignty Within an Open Science Ecosystem](#)

Dec 5: [NVIS Fall 2023 Seminar: Culture, Education, and Water Sovereignty in Southern California Tribal Communities](#)

Other Events

Nov 6–7: [Tribal Water Law Conference](#)

Arizona's Potential for "Solar River"

Last Thursday's WRRRC Water Webinar provided an overview and discussion of predicted successes and challenges of covering Arizona's water canals with solar panels. Speakers Ben Lepley, architect and researcher at Tectonicus, and David DeJong, director of the Pima-Maricopa Irrigation Project, spoke about their ongoing research and projects. Under a grant funded by the Bureau of Reclamation, the Gila River Indian Community (GRIC) will soon begin construction on a solar-canal project near Chandler. DeJong has collaborated with Lepley as well as George Cairo Engineering on this project. Tectonicus' photovoltaics and canal research, which they call "Solar River," occurs in their laboratory in Bisbee, Arizona, in conjunction with GIS Modeling and analysis of the SRP service district. Their model includes a low-cost, high-output solar panel structure and construction sequence that should not impede canal flow nor canal maintenance, and even allows for easy removal if necessary. Data found that solar over canals in a climatic region like Arizona showed greater value and benefits than land-based solar. Lab analysis and modeling have predicted a 1.9% boost in solar panel power generation, equated to annual savings of \$2.3M, as a result of cooling effects from water. The analysis also estimated an annual water savings of 2,300AF (valued at \$9.2M) from reduced evaporation and \$47.3M in savings from reduced algae growth maintenance.



- [View the Recording](#)
- [GRIC Water Conservation Infrastructure](#)
- [Tectonicus Solar River Research](#)

WRRRC Participates in the 2023 CSA Legislative Policy Summit

Last week, Director Sharon B. Megdal and Graduate Assistant Taylor Simmons represented the WRRRC at the 2023 County Supervisors Association (CSA) Legislative Policy Summit in Flagstaff. The non-partisan forum is hosted annually by the CSA for elected county supervisors to discuss and devise plans for pressing county or statewide issues. Water management strategies, such as those of the Rural Groundwater Committee of the Governor's Water Policy Council, were on the forum agenda. Director Megdal, who serves as a member of the Council and is on the Rural Groundwater Committee, was recognized during this session. During the summit, the WRRRC set up a booth to help foster a greater understanding of the counties' water resources by sharing the [Arizona Water Factsheets](#) series with elected county supervisors and their staff.



[More Info](#)
[Governor's Water Policy Council](#)

2023 WRRRC Photo Contest: Extreme Weather and Water Scarcity

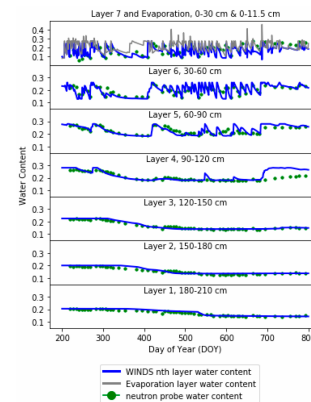
2023 has been a year of extremes in Arizona with heat, drought, fire, and even floods. Phoenix set a heat record of 54 days above 110°F, there was flooding in Black Canyon City and near the Grand Canyon, and across Arizona there have been 1,659 wildfires so far this year according to the [Department of Forestry and Fire Management](#). You've experienced it, now you can showcase Arizona's extremes. If you have snapped a picture of fierce weather or water scarcity, send in your photos for the 2023 WRRC Photo Contest. Submissions do not have to be of extreme weather events captured this year; you are welcome to pull from the archives for this year's contest. A winner, runner-up, and honorable mention will be selected and all applicable submissions will be displayed on the WRRC website. Join us in documenting Arizona's intense weather that knows no limit.



[More Info](#)
[Submit Photos](#)

WINDS Model Accurately Simulates Guayule Irrigation

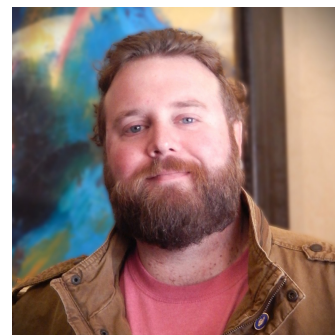
A recently published study in the journal *Water* calibrated the WINDS (Water-use, Irrigation, Nitrogen, Drainage, and Salinity) model for a simulation of the drought-tolerant crop guayule. The research focused on furrow (or flood) irrigation treatment of guayule, which is becoming a popular alternative crop in Arizona and produces natural rubber, over a two-year growth cycle. The WINDS model is a soil-water balance model that calculates crop evapotranspiration and uses root activity and root depth to estimate soil water depletion as a function of depth and growth. Once calibrated, WINDS developed growth curves and accurately simulated evapotranspiration and water content for guayule. The goal of WINDS is to provide decision-making support when it comes to irrigation-managed crops in the Southwest. There is an online WINDS app, designed for irrigation management of guayule and other crops in the arid southwestern United States.



[Access the Article](#)
[WINDS App](#)

WRRC Welcomes New Accountant

The WRRC is pleased to welcome Nicholas Propp to the team! He will serve in the role of Accountant II in the shared Environmental Sciences Business Office. He joins us from the UArizona College of Medicine's Pediatrics department. Nic was born and raised in Tucson and can't imagine living anywhere else, emphasizing that "it truly is my home." He has been with the University for over nine years and is fast approaching his ten-year anniversary in March 2024. Nic is working on finishing a degree in Anthropology and hopes to continue his education once it is complete. Welcome to the team, Nic!



WRRC Co-Hosts Tribal Engagement Open House

On Monday, October 15, the WRRC co-hosted a Tribal engagement open house with the United States Geological Survey (USGS). The open house served as a beacon of unity and cooperation, bringing together key stakeholders to discuss the role USGS serves in Tribal communities. The USGS brought its wealth of expertise to the table, making this collaboration a valuable networking and information-sharing opportunity for the WRRC. The event featured poster presentations, open discussions, and networking. Attendees had the chance to explore research on water resources, gain insight into Tribal perspectives, and engage in productive conversations about the future of our planet's most vital resource. By co-hosting this event, the WRRC and USGS demonstrated their commitment to cross-disciplinary cooperation, a crucial factor in addressing the world's most pressing water challenges. It was a powerful reminder of the importance of coming together, irrespective of our backgrounds and affiliations, to safeguard our shared water resources for generations to come.

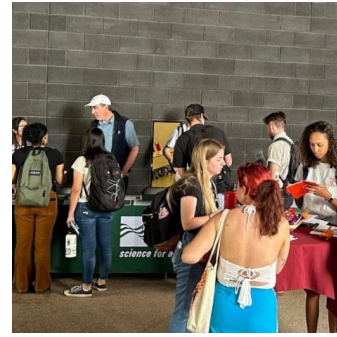


Image: Jessica Driscoll, USGS

WATER JOBS

- City of Mesa [Water Conservation Specialist](#)
- Oklahoma Water Resources Center [Senior Research Specialist](#)
- San Francisco Estuary Institute [Resilient Landscapes Program Director](#)
- UArizona (APW) [Community Outreach Professional II](#)
- UArizona (APW) [Community Outreach Professional III](#)
- USDA-NRCS [Civil Engineer \(Hydraulics/Hydrologic\)](#)
- Washington State Dept of Health [Senior Hydrogeologist](#)

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

ANNOUNCEMENTS

- **Oct 21:** [19th Annual Research Insights in Semiarid Ecosystems \(RISE\) Symposium](#)
- **Oct 23:** [WRRC Water Webinar – Empowering Arizona's Water Resource Management: Navigating Equity, Economic, and Ecological Challenges with Cutting-Edge Decision-Support Tools](#)
- **Oct 23:** [BSMAR18 — Abstract Submission Deadline](#)
- **Oct 24:** [Buckeye Water Festival](#)
- **Oct 25:** [Water Education Foundation's 39th Annual Water Summit: Taking on the Improbable in Western Water](#)
- **Oct 27:** [Arizona Water Protection Fund Fiscal Year 2024 Grant Applications – Deadline to Submit Public Comments](#)
- **Oct 30:** [UNMC Research Seminar: Drought and Public Health: A Roadmap for Advancing Engagement and Preparedness](#)
- **Oct 30:** [ENVS Colloquium Series: The Arizona Water Innovation Initiative: A Thriving Water Future for the Benefit of All of Arizona – Co-sponsored by the WRRC](#)
- **Oct 31:** [WRRC Water Webinar: Advancing Water Sustainability: A Vision for Research and Engagement at the University of Arizona Water Resources Research](#)

Center

- **Nov 1:** [Arizona Sustainability Alliance 2023 Sustainability Celebration: Tree Equity](#)
- **Nov 2:** [WRRRC Water Webinar: Capacity, Performance, and Collaborative Planning in Water Governance](#)
- **Nov 2:** [Driving Towards Sustainable Water Management: Challenges and Strategies for Water Utilities](#)
- **Nov 3:** [Estrella Mountain Regional Park Pollinator Garden Planting Event](#)
- **Nov 4:** [Tree Planting Event at City of Tempe Public Schools](#)
- **Nov 5–9:** [AWWA Water Quality Technology Conference](#)
- **Nov 6–7:** [Tribal Water Law Conference](#)
- **Nov 6–8:** [AWRA 2023 Annual Water Resources Conference](#)
- **Nov 6–9:** [Amsterdam International Water Week 2023](#)
- **Nov 7:** [NVIS Fall 2023 Seminar: From Metal Mining to Data Mining: How Indigenous Data Governance Supports Indigenous Sovereignty Within an Open Science Ecosystem – Co-sponsored by the WRRRC](#)
- **Nov 14–16:** [US Water Alliance One Water Summit 2023](#)
- **Nov 16:** [ASU Flow 2023: A Water Year Event for Researchers and Practitioners](#)
- **Nov 28:** [WRRRC Water Webinar: 104\(b\) Student Research Presentations](#)
- **Nov 30:** [WRRRC Water Webinar: 104\(b\) Student Research Presentations](#)
- **Dec 5:** [NVIS Fall 2023 Seminar: Culture, Education, and Water Sovereignty in Southern California Tribal Communities – Co-sponsored by the WRRRC](#)
- **Dec 5–7:** [AWWA North American Water Loss Conference & Exposition](#)
- **Dec 11–15:** [AGU23: Wide. Open. Science](#)
- **Dec 13–15:** [2023 Colorado River Water Users Association \(CRWUA\) Annual Conference](#)
- **Dec 15:** [WRRRC 2023 Photo Contest: Water Scarcity & Extreme Weather – Submission Deadline](#)
- **Dec 30:** [Water Quality Research Foundation – Poster Submission Deadline](#)
- **Jan 1, 2024:** [RiversEdge West 2024 Conference – Poster Presentation Abstract Deadline](#)
- **Jan 9, 2024:** [Desert Agriculture Research Symposium on Soil Health – Save the Date!](#)
- **Jan 22–24, 2024:** [Growing Water Smart: Integrated Water and Land Use Planning Workshop](#)
- **Feb 11–13, 2024:** [AWWA/WEF Young Professionals Summit](#)
- **Feb 26–28, 2024:** [Water Resources Management & Sustainability: Solutions for Arid Regions 2nd International Conference](#)
- **Feb 27–29, 2024:** [2024 Southwest Adaptation Forum – Save the Date](#)
- **Mar 5–7, 2024:** [RiversEdge West 2024 Conference – Restoration for the Future: Promoting Resilience in Our Rivers and Communities](#)
- **Mar 10–16, 2024:** [National Groundwater Awareness Week](#)
- **Mar 11–14, 2024:** [AWWA WateReuse 2024 Symposium](#)
- **March 12–13, 2024:** [WRRRC 2024 Annual Conference: Implementing Water Solutions Through Partnerships](#)
- **Mar 25–27, 2024:** [AWRA 2024 Geospatial Water Technology Conference](#)
- **Apr 3–6, 2024:** [BSMAR18](#)
- **Apr 8–10, 2024:** [AWRA 2024 Spring Conference](#)
- **Jun 10–13, 2024:** [AWWA 2024 Annual Conference & Expo \(ACE24\): Transforming Our Water Future](#)

PUBLICATIONS & MEDIA

Soil Health Needs Assessment Survey

The Soil Health Research and Extension (SHRE) team at the University of Arizona designed and conducted a statewide soil health needs assessment survey to document

stakeholder perceptions, interests, and expectations on soil health research and educational needs. The survey successfully documented essential information from a diverse group of producers, pest control advisors, and other industry members who represented the commercial agricultural industry in Arizona. The data confirmed stakeholder interest in soil health research and educational programs and provided the necessary information on their soil health needs to build an effective research-based soil health extension program. [More Info](#)

OTHER NOTICES

Underground Injection Control Program Primacy Application

ADEQ is applying for primary enforcement authority (“primacy”) over the Underground Injection Control (UIC) program, currently administered by the United States Environmental Protection Agency under the Safe Drinking Water Act. A successful application for primacy would allow ADEQ to administer a regulatory program for underground injection wells within the State of Arizona’s jurisdiction that is consistent with the Safe Drinking Water Act, tailored to the specific needs of Arizonans and the state’s unique environment, and designed to protect underground sources of drinking water from underground injection activities. ADEQ welcomes public review of the proposed [UIC Primacy Application elements](#). A [virtual public hearing](#) will be held on November 20, 2023. You may also submit comments or questions by email to uic@azdeq.gov before November 20. [More Info](#)

University of Arizona Field Day

You are invited to participate in the University of Arizona Field Day on October 19, 2023, from 7:30 am – 11:00 am at the Campus Ag Center in Tucson to rate plants in the UArizona Landscape Plant Irrigation Trial. This trial evaluates plant material to identify low water-use plants for Arizona landscapes. Space is limited. Please [RSVP here](#). A reminder along with a map to the site will be sent by email the week of the event.

Apply to Host the Southwest CASC!

Qualified organizations are invited to apply to host and, as applicable, serve as consortium partners for the North Central and Southwest Climate Adaptation Science Centers (CASCs). Proposals are due February 1, 2024, by 4 pm ET. [More Info](#)

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

[Contact us here](#)