

# WEEKLY WAVE



THE UNIVERSITY OF ARIZONA  
COOPERATIVE EXTENSION

## WATER RESOURCES RESEARCH CENTER



October 7, 2023 / Volume 11, Issue 27

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:** Thomas Meixner, NVIS Recap, ENVIS Recap, Factsheet, AmeriCorps, AZ Irrigation Leader

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## Remembering Dr. Thomas Meixner

On Thursday, October 5, we paused to recognize, remember, and reflect on the loss of one of our own. This week we mourn Dr. Thomas Meixner, beloved professor and head of the University of Arizona Department of Hydrology and Atmospheric Sciences, whom we lost one year ago. He was admired and respected in the water community and by those for whom he was a colleague, professor, mentor, and friend. An endowed University memorial fund has been established to honor his legacy and support graduate students in the Department of Hydrology and Atmospheric Sciences. In a letter sent this week to students, faculty, and staff, UArizona President Robert C. Robbins stated that “Dr. Meixner was an incredible person, and his death has left an indelible mark on our community.” The University held a day of remembrance on Thursday, during which services were offered at St. Thomas More Catholic Newman Center. The church Meixner attended each week with his wife and children, St. Cyril Roman Catholic Parish in midtown Tucson, plans to dedicate two areas of their property in his honor: a native plant garden and a stone walkway that Meixner and his son helped build. Our heartfelt sympathies go out to Meixner’s family as we observe the first anniversary of this tragic loss. He is truly missed.

[Dr. Thomas Meixner Memorial Fund](#)  
[KGUN9 News Story and St. Cyril Dedication Info](#)

## EVENTS



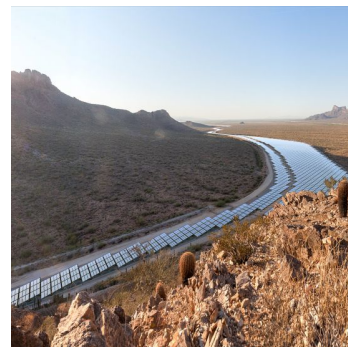
The graphic features a blue background with white and light blue text. On the left, a blue vertical bar contains the text "WRRC 2024 ANNUAL CONFERENCE" in white. To the right is a photograph of a large conference room with many people seated at round tables. Below the photo, the text "SAVE THE DATE" is written in large white letters, with "THE" inside a white circle. Underneath, "MARCH 12-13" is written in light blue, flanked by white arrows pointing outwards.

### WRRC Water Webinar: Solar River, Covering and Powering Canals with Photovoltaic Energy

**Date:** Thursday, October 12, 2023  
**Time:** 12:00 pm – 1:15 pm Arizona Time  
**Location:** [Webinar Only](#)

**Speakers:**

Ben Lepley, Architect and Researcher, Tectonicus  
David H. DeJong, PhD, Director, Pima-Maricopa Irrigation Project



Moving water is the largest energy user in Arizona and thermo-electric power is the largest user of water in the US, according to the USGS. Arizona's energy is still dominated by thermo-electric power at 83%, with renewables at 17%, thus Arizona energy's consumptive water footprint is massive. In 2015, Tectonicus started researching the feasibility of deploying canal-solar systems in the US. Reports published in 2014 and 2016 by the US Bureau of Reclamation cited the challenges to this idea, such as canal access, security, structure cost, constructability, and operations and maintenance. Taking these hurdles as design challenges in 2015, Tectonicus started researching ways to solve these issues. This WRRC Water Webinar will provide information about how Tectonicus has built a controlled environment for testing evaporation, algae growth, and photovoltaic performance to measure the micro-climate effects to the water and air, as well as the implications of the research. The tested effects, measured through instrumentation, are then mathematically modeled and applied to a larger system-scaled analysis of central Arizona canals for techno-economic impact analysis. The analysis compares the economics of existing utility-scale solar systems with canal-solar projects of the same size. The lab analysis will continue through 2024; however, the preliminary results show canal-solar has a greater net present value than utility scale solar, with water quality being the biggest benefit. Tectonicus is working with George Cairo Engineers on several full-scale projects throughout the state including on Gila River Indian Community canals.

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

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## **USGS Drought Science Tribal Engagement Event Series: Open House at UArizona – Co-sponsored by the WRRC**

**Date:** Monday, October 16, 2023

**Time:** 2:00 to 5:00 pm MST

**Location:** UArizona ENR2 Courtyard (The Canyon), 1064 E Lowell St, Tucson, AZ 85719



Come meet and talk with USGS scientists about drought science and explore career paths! Scientists, handouts, and other resources will be available for you to learn more about drought science research at the US Geological Survey. Learn more about different perspectives and career paths at the USGS including the Office of Tribal Relations, Ecology, Hydrology, GIS, Natural Resource Management, Wildlife, and more! Learn more about USGS partners at UArizona and their work with Tribal Nations.

[More Info](#)

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## **Building Benson Water Resilience – Co- sponsored by the WRRC**

**Date:** Thursday, October 19, 2023

**Time:** 5:00 to 7:30 pm MST

**Location:** Cochise College Benson Center, 1025 Arizona 90 Benson, AZ 85602



Interested in learning more about how communities are adapting to water challenges? Join the upcoming water conversation in Benson, Arizona! Hosted by the WRRC and Cochise County Cooperative

Extension's Water Wise program, the event will cover how water availability in an arid climate has shaped agriculture, land and water management, as well as conservation strategies being applied locally. Featured speakers include local residents presenting on regenerative agriculture and groundwater use myths and best practices with additional representation from local organizations like The Nature Conservancy and Kartchner Caverns State Park. Come join us for dinner and an evening highlighting local water!

[Register Here](#)

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## Upcoming WRRC Events

Oct 30: [ENVS Colloquium Series Featuring Dave White, Director, Global Institute of Sustainability and Innovation, Arizona State University – Co-sponsored by the WRRC](#)

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 WRRC](#)

Nov 28: [WRRC Water Webinar: 104\(b\) Student Research Presentations – Save the Date!](#)

Nov 30: [WRRC Water Webinar: 104\(b\) Student Research Presentations – Save the Date!](#)

Dec 5: [NVIS Fall 2023 Seminar: Culture, Education, and Water Sovereignty in Southern California Tribal Communities – Co-sponsored by the WRRC](#)

## Other Events

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

# NEWS

## Seminar Calls for Inclusive Decision-Making in Food Safety Regulation

In the second seminar of the Fall 2023 Indige-FEWSS Native Voices in STEM (NVIS) series, co-sponsored by the WRRC, Dr. Valerisa Gaddy highlighted the need for culturally sensitive and inclusive decision-making practices for food safety and agricultural regulations. Gaddy, a WRRC post-doctoral researcher, discussed the 2011 Food Safety Modernization Act (FSMA), which shifted the focus from responding to foodborne illnesses to preventing them before they happen. While making changes to the country's food security framework, FSMA made no reference to Tribal Nations despite their impact on the agriculture industry. Gaddy noted that in Arizona, Tribal growers and ranchers represent almost half of the state's farmers and ranchers. Without Tribal considerations in the regulations, Tribal farmers and ranchers were left in the dark about these regulations, which could lead to their exclusion from the produce market. In response to this issue, Gaddy has helped develop a food safety curriculum that incorporates traditional stories, cultural practices, and current practices. She highlighted the success in translating often dense jargon into workable and understandable materials that were also culturally sensitive. Gaddy asserted that going



forward successful food safety programs would ideally understand the needs of Tribes, develop culturally sensitive training, and provide that training on Tribal lands.

- [View the Recording](#)
- [NVIS Fall 2023 Lineup](#)
- [NVIS Series](#)

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## Monitoring Forest Management Effects on Groundwater

Dr. Abe Springer's presentation at Monday's ENVS Colloquium Series event, co-sponsored by the WRRRC, gave insight into ecohydrogeology, the interdisciplinary study of ecosystems, springs, and aquifers, in northern Arizona. For the past 10 years, Springer and his team have been monitoring groundwater in Coconino National Forest and Grand Canyon National Park to study the impact of forest management and climate change on aquifers. Alongside Springer's monitoring, the US Forest Service, through the Four Forest Restoration Initiative (4FRI) in northern Arizona, has been implementing new forest management techniques that aim to rebalance these ponderosa pine ecosystems. Restoration projects include mechanical tree thinning and prescribed burning. Springer and his team are studying these 4FRI regions before and after forest thinning treatments occur to better understand their impact on groundwater and springs. Another component of this research includes a public perceptions study about spring management in the Southwest, where stakeholders were questioned about spring water in relation to ranching, recreation, and cultural significance to Indigenous Nations in the region. Monitoring by Springer's team proceeds with the goal of informing better forest management practices to improve aquifer recharge, forest ecosystem health, and water management in the face of climate change.



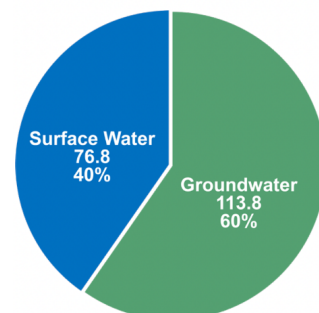
*Image: 4FRI project mechanical thinning of trees in Coconino National Forest 2012*

### [4FRI](#) [Public Perceptions Study](#)



## Did You Know?

Reclaimed water, also known as recycled water, is an increasingly valuable source of water in Arizona. In Graham County, the main sources of water include surface water (40%) and groundwater (60%), though reclaimed water use has expanded in the City of Safford. Safford uses their reclaimed water for irrigation, discharging surplus treated effluent into the Gila River, which benefits the plants and animals along the river and can recharge groundwater aquifers. Efforts are in place to expand the use of reclaimed water through the construction of pipelines for irrigation in additional parks, school



landscapes, and the county fairgrounds. Using reclaimed water can help reduce the county's reliance on potable water supplies and conserve critical water resources. Want to learn more about water in Graham County? Check out the factsheets at the links below.

*Image: Sources (Million Gallons/Day) for Graham County's water (USGS 2015)*

## [Graham County Water Factsheet](#) [Arizona Water Factsheets](#)

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### WRRC Welcomes New AmeriCorps Members

This week the WRRC welcomed two new AmeriCorps members! We are excited to partner with AmeriCorps, which is a national service program with more than 270,000 individuals in service roles making a difference in communities across America each year. Austin Bauer and Courtney Lee will assist the WRRC with outreach and communications efforts, including writing for the *Weekly Wave*, developing our next *Arroyo*, hosting WRRC Water Webinars, and putting on our annual conference. Austin Bauer is a writer and communications professional. A graduate of Missouri Western State University with degrees in convergent journalism and political science, he worked as a nonpartisan public information specialist in the Missouri State Senate for nearly five years. He currently resides in Tucson with his wife and three cats. In his free time, he enjoys writing, reading, and watching movies. Courtney Lee graduated from the University of Arizona in May 2023 with a bachelor's degree in environmental science. She previously was engaged in environmental research through her position with the Blankinship Soil Laboratory at UArizona. Leaving the Chicagoland area for Tucson to further her education has been one of her favorite life decisions, upon falling in love with the desert. Outside of science, her latest passion of advocating for women's equity in sports coincides with being a huge Arizona Women's Basketball fan. Welcome to the WRRC team, Austin and Courtney!



### [What is AmeriCorps?](#)

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### WRRC Director Interviewed in Arizona Irrigation Leader Magazine

WRRC Director Sharon B. Megdal's interview was featured on the cover of the October 2023 Arizona edition of *Irrigation Leader*. The magazine publishes stories and interviews about "the ingenuity and hard work of those in the irrigation field." Megdal was interviewed to share her insights on the recent UArizona Presidential Advisory Commission report, "The Future of Agriculture and Food Production in a Drying Climate." The report covers multiple topics including irrigation methods, soil health, cropping patterns, and competition over water supplies. In the interview, Megdal noted that the WRRC's 2023 *Arroyo* covered similar topics. She shared the recommendations for further action given in the report and observed that the future of Arizona agriculture "might look a little different," pointing out, "The implications of a diminished Colorado River and overdrafted groundwater can't be fixed with a single approach." Megdal also noted, "The



report highlights the need to recognize and connect better with our Tribal communities. We have a lot of Tribal production agriculture going on in Arizona, yet Tribal and non-Tribal discussions about water and agriculture usually take place separately. I personally would like to see more communication and interaction between those two broad groups.” The *Irrigation Leader* magazine is available to read online. Megdal’s interview begins on page 8 of the October issue linked below.

- [Arizona Irrigation Leader October Issue](#)
- [Presidential Advisory Commission Report](#)
- [2023 Arroyo](#)



## WATER JOBS

- City of Chandler [Water Conservation Program Manager](#)
- Grand Canyon Trust [Water Advocacy Manager](#)

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

## ANNOUNCEMENTS

- **Oct 9:** [New Regional Leader for Rio Reimagined – Proposal Submission Deadline](#)
- **Oct 10:** [AHS Tucson Chapter Meeting: Evaluating Recharge in the Santa Cruz River Heritage Project](#)
- **Oct 12:** [American Society of Civil Engineers \(ASCE\) Arizona Branch's Sustainability & Resilience 2023 Symposium](#)
- **Oct 12:** [CAP Briefing & Updates on 2024-2025 Budget](#)
- **Oct 12:** [WRRC Water Webinar: Solar River, Covering and Powering Canals with Photovoltaic Energy](#)
- **Oct 13:** [NGWA Presents: Develop Your Professional Skills: Young Professionals and Students Virtual Conference](#)
- **Oct 14:** [Avondale Tres Rios Cleanup](#)
- **Oct 16:** [USGS Drought Science Tribal Engagement Event Series: Open House at ament Event Series: Open House at UArizona – Co-sponsored by the WRRC – Co-sponsored by the WRRC](#)
- **Oct 17:** [Governor's Water Policy Council Assured Water Supply Committee Meeting](#)

- **Oct 18–19:** [Southwest Vegetation Management Association Fall 2023 Conference: Habitat Enhancement Along Arizona's River Corridors](#)
- **Oct 19:** [Building Benson Water Resilience – Co-sponsored by the WRRC](#)
- **Oct 19:** [Imagine a Day Without Water](#)
- **Oct 20:** [Arizona Game and Fish Department Community Planting Event](#)
- **Oct 21:** [19<sup>th</sup> Annual Research Insights in Semiarid Ecosystems \(RISE\) Symposium](#)
- **Oct 23:** [BSMAR18 — Abstract Submission Deadline](#)
- **Oct 25:** [Water Education Foundation's 39<sup>th</sup> 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:** [ENVS Colloquium Series Featuring Dave White, Director, Global Institute of Sustainability and Innovation, Arizona State University – Co-sponsored by the WRRC](#)
- **Nov 1:** [Arizona Sustainability Alliance 2023 Sustainability Celebration: Tree Equity](#)
- **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 WRRC](#)
- **Nov 14–16:** [US Water Alliance One Water Summit 2023](#)
- **Nov 28:** [WRRC Water Webinar: 104\(b\) Student Research Presentations – Save the Date!](#)
- **Nov 30:** [WRRC Water Webinar: 104\(b\) Student Research Presentations – Save the Date!](#)
- **Dec 5:** [NVIS Fall 2023 Seminar: Culture, Education, and Water Sovereignty in Southern California Tribal Communities – Co-sponsored by the WRRC](#)
- **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:** [WRRC 2023 Photo Contest: Water Scarcity & Extreme Weather – Submission Deadline](#)
- **Dec 31:** [Water Quality Research Foundation – Poster Submission Deadline](#)
- **Jan 1, 2024:** [RiversEdge West 2024 Conference – Poster Presentation Abstract Deadline](#)
- **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:** [WRRC 2024 Annual Conference – Save the Date!](#)
- **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

### **Arizona Irrigation Leader Magazine Releases October 2023 Issue**

In this month's cover interview, Sharon Megdal, the director of the University of Arizona's Water Resources Research Center, shares some interesting insights from the university's new report, *The Future of Agriculture and Food Production in a Drying Climate*. [Read the Full Issue](#)

### **New Online Tool: Water Adaptation Techniques Atlas**

The Water Adaptation Techniques Atlas (WATA) compiles information about responses to water scarcity in the southwestern US, presented in the form of case studies. Each case is pinned to a geographic location where the action takes place. [More Info](#)

### **Now Available: A Living River Report for the Santa Cruz River - Downtown Tucson to Marana**

This report includes Santa Cruz River conditions in the flowing reaches of the Heritage Project and northwest Tucson to Marana during the 2022 water year (October 1, 2021, to September 30, 2022). To explore more data, download the [supplementary report](#). Living River reports were launched in 2008 when Sonoran Institute began tracking conditions of the stretch of Santa Cruz River in Santa Cruz County that flows year-round. The effort expanded in partnership with Pima County and the Regional Flood Control District in 2012, and the City of Tucson in 2020, to report on conditions in the flowing reaches of Pima County. [Read the Report](#)

## OTHER NOTICES

### **Coalition Update: Water Utility Service Area Boundaries**

Last year, the [Environmental Policy Innovation Center](#) (EPIC), SimpleLab, and the [Internet of Water Coalition](#) released a provisional national map of drinking water service area boundaries to support the design and implementation of water and climate programs at the federal, state, and community levels. In eight months, they built a high-quality understanding of where 173 million people — i.e. more than half of the US population — get their water. Since that launch, they have been encouraged by the level of interest in this data — and the commitment from partners across academia, technology providers, and the public sector to improve the data. [Learn About the Project](#) or [Read the Update](#).

### **Water Quality Research Foundation: Call for Poster Submissions**

Interested in drinking water quality? Undergraduates through postgraduates can submit to the first-ever Water Quality Research Foundation Poster Competition, intended to stimulate research concepts for students of environmental, engineering, education, or other science-related fields. The featured categories are research and community projects/education. The Top 2 finalists will earn travel reimbursement and hotel accommodations and present their findings at the annual Water Quality Association's Convention in Orlando, Florida on March 5, 2024. Questions and completed submissions should be sent to [Foundation@wqrf.org](mailto:Foundation@wqrf.org). The submission deadline is December 31, 2023. [More Info](#)

### **Water Quality Standards Triennial Review and State Rulemaking: Draft Preamble for Public Comment**

The federal Clean Water Act requires that at least every three years each state must review and update its water quality standards for surface waters. This process helps ensure water quality standards are up-to-date and protective of Arizona's surface waters.

It also provides opportunities for public input and involvement in the water quality management process. The review combines the Clean Water Act requirements of the Triennial Review with a state rulemaking to adopt revisions for criteria applied to health-related standards and make technical corrections to waterbody descriptions. A draft preamble to a Notice of Public Rulemaking (NPRM) is available online. Please carefully review the draft preamble and [provide input](#) by October 13, 2023.

[View the Draft Preamble](#)

### **Drylab 30-Day Challenge to Live Water Wise**

This challenge calls together all of us concerned about the present and future of our water! Despite recent wet weather patterns, multi-year droughts throughout the Southwest US and the extreme depletion of the reservoirs connected to the Colorado River have made it clear that fresh, clean water is a limited (not endless) natural resource. What can we do?! It turns out that, especially if we come together, there are a lot of actions we can take. [More Info](#)

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

[Contact us here](#)