

# WEEKLY WAVE



THE UNIVERSITY OF ARIZONA  
COOPERATIVE EXTENSION

## WATER RESOURCES RESEARCH CENTER



February 23, 2024 / Volume 12, Issue 8

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.  
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**IN THIS ISSUE:** Factsheet Release, Photo Contest Winners, PFAS, Colorado River Symposium Recap

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The image shows the cover of the 'Arizona Water Factsheet Santa Cruz County' factsheet. The cover features a map of Arizona with Santa Cruz County highlighted, a water drop icon, and the title 'ARIZONA WATER FACTSHEETS SANTA CRUZ COUNTY'. It also includes a pie chart titled 'Arizona Water Supply and Demand' and a map titled 'Statewide Context'.

Category	Volume (Million Gallons per Day)	Percentage
Surface Water	3,220	52%
Reclaimed Water	174	3%
Municipal	1,240	20%
Industrial	16	0.3%
Agriculture	2,740	45%

**Water in Santa Cruz County**  
Santa Cruz County is Arizona's smallest county at just 1,238 square miles and one of the most ecologically diverse. Located in the Sicu Island region of southern Arizona, this region harbors some of the last remaining riparian habitats in the state. The county's diverse geography, including the Santa Cruz River, provides a unique and valuable water resource.

## WRRC Releases Santa Cruz County Factsheet

The Santa Cruz County Water Factsheet is now available! As the 11<sup>th</sup> addition to the WRRC's Arizona Water Factsheet series, this resource highlights Santa Cruz County's geographical position along the Mexico border and binational efforts guiding water resources management within the Upper Santa Cruz River Basin. Additional topics include an overview of the county's water supply and demand, and examples of sustainable water management initiatives within this binational context that highlight the importance of engaged stakeholders and cross-border cooperation. This Factsheet underscores the significance of the Santa Cruz River, especially its perennial sections, emphasizing the

county's approach to balancing ecological preservation with economic and recreational activities like agriculture and ecotourism.

The Santa Cruz County Technical Advisory Committee (TAC) helped provide local insight to contextualize existing water-related data. For Santa Cruz County, the TAC included representation from the Sonoran Institute, the Arizona Department of Environmental Quality (ADEQ), and Friends of the Santa Cruz River. Additional stakeholders provided input reflective of their deep local knowledge about the county's water resources and management.

[Santa Cruz County Factsheet](#)  
[AZ Water Factsheets](#)

## CONFERENCE UPDATES



A detailed draft agenda for the WRRC 2024 Annual Conference, *Implementing Water Solutions Through Partnerships*, is now available on our [conference website](#), and Early Bird registration **ENDS TODAY**, Friday, February 23. Standard registration runs February 24 through March 3. The conference will be held in person on March 12–13 at the UArizona Student Union in Tucson. Our two-day program features over 40 speakers and poster presenters. Day 1 will start with remembrance and recognition of the legacy of Prof. Tom Meixner, followed by talks on a groundbreaking research program he initiated. The day will conclude with an evening reception and poster session, where attendees can network and check out the poster presentations while enjoying hors d'oeuvres and a cash bar. The Day 2 program is packed with speakers and panels covering a range of proposed and developing water solutions. We invite you to join us to engage in robust discussions focused on the partnerships and collaborations that help us achieve solutions to complex water challenges. If you are unable to make it to the in-person event, we are offering a free, noninteractive Zoom livestream, but we hope many of you will attend in person to join the conversation and network with colleagues and friends, old and new.

- [Early Bird Registration Ends Today!](#)
- [Detailed Agenda](#)
- [More Info](#)

## EVENTS

**WRRC Water Webinar: Water for All: Global Solutions for a Changing Climate**

**Date:** Tuesday, February 27, 2024  
**Time:** 3:00 pm – 4:00 pm Arizona Time (2–3 pm PT)  
**Location:** [Webinar Only](#)

**Speaker:** David Sedlak, *Plato Malozemoff Professor of Civil and Environmental Engineering, University of California, Berkeley, and Director, Berkeley Water Center*

The current approach to providing water is failing to meet the demands of the growing population and the challenges brought on by climate change. In *Water for All: Global Solutions for a Changing Climate* (Yale Univ Press: November 7, 2023), David Sedlak argues there are solutions to address global water shortages. He identifies the challenges, including ineffective policies and outdated infrastructure. The book also outlines the myriad of tools at our disposal to address the problem, from emerging technologies in desalination to innovations for recycling wastewater and capturing more of the water that falls on fields and cities. Join this WRRC Water Webinar featuring David Sedlak to hear more about his new book and learn about his research and proposed solutions to address global water challenges.



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

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## **NVIS Spring 2024 Seminar: Place Based Learning and Cultural Fire Practice in California – Co-sponsored by the WRRC**

**Date:** Tuesday, March 12, 2024  
**Time:** 12:00 pm – 1:00 pm Arizona Time  
**Location:** [Webinar Only](#)

**Speaker:** Deniss Martinez, *Research Affiliate, Native American Studies, University of California, Davis*



Deniss is a community-engaged environmental justice scholar. Her research focuses on finding natural resource management strategies that support Tribal self-determination and governance. Using qualitative methods and community-based research Deniss' current work centers on the stories and narratives of cultural fire practitioners in California. Her vision is to work on creating a future that centers the wisdom of Indigenous people, not just as marginally relevant but as central to environmental decision-making. She believes that just as people are an essential part of the environment; decolonization, reparations, and justice are essential to a just climate future. She aims to continue work that informs both settler governments and Tribal governments on the best strategies for solving the climate crisis in a way that uplifts Tribal sovereignty, ensures justice for communities of color, and builds governance, culture, and decision-making based on values of reciprocity, responsibility, and seven generation thinking.

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

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## **Upcoming WRRC Events**

- March 12–13: [WRRC 2024 Annual Conference: Implementing Water Solutions Through Partnerships](#)

### Upcoming WRRC Co-sponsored Events

- Apr 2: [NVIS Spring 2024 Seminar: Unraveling Ecosystem Challenges: Investigating Pinyon Decline and Big Sagebrush Resiliency; 12–1 pm MST](#)
- May 7: [NVIS Spring 2024 Seminar: ?Eiletek Waali? \(I'm Reading Country\); 12–1 pm MST](#)

### External Events

- Apr 11–12: [Law of the Rio Grande Annual Conference](#)
- May 6–7: [Law of the Colorado River Annual Conference](#)

## NEWS



### Photo Contest Winners Announced at WRRC Chocolate Fest

Winners of the 2023 photo competition, *Water Scarcity & Extreme Weather*, were announced on February 16 at the WRRC's annual Chocolate Fest. A winner, runner-up, and honorable mention were selected for photos that embodied the contest theme in three of the categories: Nature, The Built Environment, and Water Outside of Arizona. In the "Nature" category, Liz Kemp took first prize with her photo of a stunning microburst in the desert. The runner-up award went to Chad Kwiatkowski and the honorable mention went to a submission from Oatman Farms. Alex Nie's photo was selected as the winner in "The Built Environment" category with an image that featured monsoons and agricultural land in Chandler. Another Oatman Farms photo took the runner-up prize, and the honorable mention went to Brenda Sanchez. The judges agreed that Eric Weiss's image of an altered flood warning sign in New Mexico encapsulated the water scarcity theme "Outside of Arizona." Both runner-up Wendy Islas and honorable mention Celeste Boudreaux offered striking images of ancient erosion in their photo submissions. In the final category "Water in Arizona" – which did not have to tie into the theme – the winning image was an astonishing photo submitted by Jim Muntz that captured a perfectly timed lighting strike across a rainbow. Emma Harries' entry was the runner-up in that category, and two lovable photos of wet wildlife, submitted by Dawn Walker and Kim Holmes, received honorable mention. Several winners attended the event and were invited to share a few

words about their photos. Three former WRRC graduate students also spoke at the event, sharing memories of their time with the WRRC and providing updates on what they're doing now for Arizona water. The WRRC uses many photo contest submissions in its publications, such as the *Weekly Wave* e-newsletter and *Arroyo*, on its website, in conference materials, and much more. We are thankful to all who submitted photos and look forward to receiving more fantastic entries at our 2024 photo contest later this year.

## [Photo Contest Winners](#)

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### **New Article Takes One Health Approach to PFAS**

The WRRC has recently published an article in *The Water Report*, titled "Understanding the Impact of PFAS in Arizona Using the One Health Approach." This article was co-written by WRRC Graduate Outreach Assistant Taylor Simmons, WRRC Statewide Water Information Manager Amanda Trakas, and WRRC Research and Outreach Program Officer Susanna Eden. The article gives an overview of



perfluoroalkyl and polyfluoroalkyl substances (PFAS), a family of over 4,000 synthetic chemicals that have been widely produced and used since the 1940s. Constructed with one of the strongest bonds in chemistry, these "forever chemicals" do not easily degrade and are commonly found in domestic, industrial, and agricultural products to repel water, oil, and dirt and withstand high temperatures. Though there are no large PFAS manufacturing facilities in Arizona, studies indicate that Arizona's agricultural areas, airports, and military bases can contribute to PFAS environmental releases ([see map](#)). Water is the main environmental vehicle of PFAS, directly threatening humans and animals. Examining PFAS exposure from a One Health (animal, human, and environmental health) perspective takes in exposure routes and strategies for limiting PFAS exposure, including Arizona, federal, and state regulations.

*Image: Centers for Disease Control and Prevention*

## [Water Report Article](#)

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### **WRRC Co-hosts Colorado River Governance Symposium**

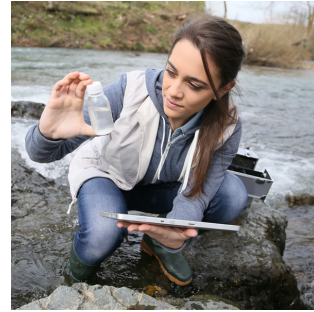
On Thursday, February 15, the WRRC, UArizona Udall Center for Studies in Public Policy, and the Arizona Institute for Resilience Center for Climate Adaptation Science & Solutions co-hosted *Navigating the Rapids: Colorado River Governance in the 21<sup>st</sup> Century*. More than 40 million people rely on the Colorado River, which serves as a critical water source for cities, agriculture, recreation, and the environment across seven US states and Mexico. However, the river is facing significant challenges due to over-allocation, prolonged drought, and the impacts of climate change. Eleven experts, including WRRC Director Sharon B. Megdal, discussed decision-making processes and the complex challenges the river faces. At this public symposium, stakeholders addressed questions about the future of the Colorado River, its potential impacts on Arizona, and what can be done at all levels of government. After a lengthy discussion, the panelists engaged with the audience at the reception that followed.



## WATER JOBS/OPPORTUNITIES

### WRRC Invites Research Proposals for 104(b) & 104(g) Programs

Faculty and research personnel at any of Arizona's three public universities are invited to submit research proposals to the WRRC for federal 104(b) grants of up to \$10,000 or competitive 104(g) grants of up to \$310,000. Grant funds are provided by the Water Resources Research Act through the US Geological Survey (USGS). For more information, visit the web pages below or email Jessie Hampton ([jessiehampton@arizona.edu](mailto:jessiehampton@arizona.edu)).



[104\(b\) Grant Info](#) Proposal Deadline: March 1, 2024  
[104\(g\) Grant Info](#) Proposal Deadline: March 27, 2024

- UW-Milwaukee Center for Water Policy [Water Policy Specialist](#)

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

## NOTICES, PUBLICATIONS & MEDIA

### From the WRRC

#### TAAP Article Published by Binational Team

“Crafting Binational Groundwater Agreements for Transboundary Aquifer Sharing”

[Read the Article](#)

### From Other Sources

#### Riparian Photopoint Program

The Friends of Tonto National Forest is seeking volunteers for the [Riparian Photopoint program](#). The program documents riparian areas by taking photographs of vegetation and streambanks at exact spots to show wildlife impacts, results of flooding, fire and drought, impacts by livestock, and improvement in conditions from management strategies.

Volunteers are needed throughout the Tonto National Forest, some easily accessible by car and some requiring hiking. Virtual training sessions will be held on March 7, 11, and 12. Register for training [HERE](#). If you would like to volunteer but cannot attend the training, please email [Helene@friendsofthetonto.org](mailto:Helene@friendsofthetonto.org).

#### Reclamation Publishes Overview of Colorado River Evaporation History

The Mainstream Evaporation and Riparian Evapotranspiration report looks at water surface evaporation, soil moisture evaporation, and plant transpiration. It will be used by Reclamation as a source of data as it manages regional water operations and to improve the agency's modeling efforts. [More Info](#)

# CALENDAR ANNOUNCEMENTS

- **Feb 23:** [WRRRC 2024 Annual Conference – Early Bird Ends Today!](#)
- **Feb 25:** [AWRA/UCOWR/NIWR 60<sup>th</sup> Anniversary Joint Water Resources Conference – Topical Session Deadline](#)
- **Feb 26–27:** [Environmental Professionals of Arizona \(EPAZ\) Conference](#)
- **Feb 26–28:** [Water Resources Management & Sustainability: Solutions for Arid Regions 2nd International Conference](#)
- **Feb 27:** [WRRRC Water Webinar: Water for All: Global Solutions for a Changing Climate; 3–4 pm MST – Co-sponsored by the WRRRC](#)
- **Feb 27–29:** [2024 Southwest Adaptation Forum](#)
- **Feb 28–Mar 1:** [10<sup>th</sup> Natural History of the Gila Symposium](#)
- **Feb 28–Mar 1:** [MSSC 2024 Annual Salinity Summit](#)
- **Mar 1:** [AHS 2024 Bouwer Intern Scholarship – Application Deadline Extended!](#)
- **Mar 1:** [Water Resources Research Institute Program 104\(b\) Student Grant – Proposal Deadline](#)
- **Mar 3:** [Regreening the Desert: Free Soil Health Film Screening](#)
- **Mar 4:** [WRRRC 2024 Annual Conference – Standard Registration Deadline!](#)
- **Mar 5–7:** [RiversEdge West 2024 Conference – Restoration for the Future: Promoting Resilience in Our Rivers and Communities](#)
- **Mar 6–8:** [Land & Water Summit](#)
- **Mar 7–8:** [Sustainable Water Investment Summit](#)
- **Mar 10–16:** [National Groundwater Awareness Week](#)
- **Mar 11:** [ENVS Colloquium — Dr. Thomas Lavanchy \(Oklahoma State University\)](#)
- **Mar 11–14:** [AWWA WaterReuse 2024 Symposium](#)
- **Mar 12:** [NVIS Spring 2024 Seminar: Place Based Learning and Cultural Fire Practice in California; 12–1 pm MST – Co-sponsored by the WRRRC](#)
- **March 12–13:** [WRRRC 2024 Annual Conference: Implementing Water Solutions Through Partnerships](#)
- **March 12–13:** [A Meeting of Sacred Waters: A Global Gathering of Indigenous Voices](#)
- **Mar 14:** [Spring 2024 Tumamoc Talk: The Influence of a Variable and Changing Climate on Upper Gila River Streamflow – Dr. Connie Woodhouse](#)
- **Mar 18:** [ENVS Colloquium — SEES Earthweek Keynote Speaker](#)
- **Mar 20:** [AWRA 2024 Webinar: What You Need to Know About Microplastics in Our Waters](#)
- **Mar 21:** [ENViSion Research Symposium](#)
- **Mar 25:** [ENVS Colloquium — Dr. Katerina Dontsova \(UArizona\)](#)
- **Mar 25–27:** [AWRA 2024 Geospatial Water Technology Conference: Data to Decisions: Managing & Modeling Water Challenges](#)
- **Mar 27:** [USGS 104\(g\) National Competitive Grant – Proposal Deadline](#)
- **Mar 31:** [AHS 2024 Halpenny Intern Scholarship – Application Deadline](#)
- **Mar 31:** [AHS 2024 Avery Intern Scholarship – Application Deadline](#)
- **Apr 1:** [ENVS Colloquium — TBD](#)
- **Apr 2:** [NVIS Spring 2024 Seminar: Unraveling Ecosystem Challenges: Investigating Pinyon Decline and Big Sagebrush Resiliency; 12–1 pm MST – Co-sponsored by the WRRRC](#)
- **Apr 3–6:** [BSMAR18](#)
- **Apr 6:** [2024 Water Awareness Month Festival](#)
- **Apr 8:** [ENVS Colloquium — Dr. Luisa Ikner \(UArizona\)](#)
- **Apr 8–10:** [AWRA 2024 Spring Conference: Water Risk & Resilience: Research and Sustainable Solutions](#)
- **Apr 11–12:** [Law of the Rio Grande Annual Conference](#)
- **Apr 15:** [AHS Annual Academic Scholarships – Application Deadline](#)
- **Apr 15:** [ENVS Colloquium — ENVS Undergraduate Presentations](#)
- **Apr 16–17:** [NGWA Conference: Groundwater in the PFAS Era: Stressors, Protection, & Compliance](#)
- **Apr 18:** [Spring 2024 Tumamoc Talk: The Science and Wonder of Arizona Lighting – Ron Holle](#)
- **Apr 22:** [ENVS Colloquium — Dr. Beth Marlowe \(Quest Diagnostic Labs\)](#)

- **Apr 23–25:** [97<sup>th</sup> Annual AZ Water Conference & Exhibition Annual AZ Water Conference & Exhibition](#)
- **Apr 24–26:** [Santa Cruz River Research Days](#)
- **Apr 29:** [ENVS Colloquium — Dr. Jen McIntosh \(UArizona\)](#)
- **May 6–7:** [Law of the Colorado River Annual Conference](#)
- **May 7:** [NVIS Spring 2024 Seminar: 'Eeltek Waali' \(I'm Reading Country\); 12–1 pm MST](#)  
– *Co-sponsored by the WRRC*
- **Jun 1:** [2024 Central Arizona Project Award for Water Research — Abstract Deadline](#)
- **Jun 10–13:** [AWWA 2024 Annual Conference & Expo \(ACE24\): Transforming Our Water Future](#)
- **Jun 17–20:** [3<sup>rd</sup> International Groundwater-Agriculture Conference: Toward Sustainable Groundwater in Agriculture - Linking Science and Policy](#)
- **Jul 28–30:** [2024 Arizona Water Reuse Symposium](#)
- **Sep 30–Oct 2:** [AWRA/UCOWR/NIWR 60<sup>th</sup> Anniversary Joint Water Resources Conference](#)

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

[Contact us here](#)