

WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**



January 27, 2023 / Volume 11, Issue 4

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](#).

[WRRC Office Update](#)

[Subscribe to the Weekly Wave](#)

[View as Webpage](#)

IN THIS ISSUE: Chocolate Fest, Brown Bag Recap, WOTUS, APW, Mary-Belle Cruz Ayala, Women in Science



FEB 10 AT 3:30 PM

WRRC CHOCOLATE FEST
AND PHOTO CONTEST
WINNER ANNOUNCEMENTS

**Registration Now Open
for WRRC Chocolate Fest!**

Please join us on Friday, February 10 from 3:30 to 5:00 PM for the WRRC's annual Chocolate Fest. This year, we are thrilled to be hosting this fun event in person at the WRRC's offices! There will be real chocolate for all those who can attend in person. Weather permitting, it will be an indoor-outdoor event. The agenda this year is simple: gather with friends and colleagues, enjoy chocolaty treats, and see the winning photographs from our 2022 Annual Photo Contest. In keeping with tradition, this year's celebration will be a chocolate potluck. Start thinking about what you would like to bake, concoct, purchase, or brew, then bring your favorite divine chocolate delectation to share.

For those who want to tune in remotely, the program and photos will stream online through Zoom. We look forward to seeing you on February 10 at the first in-person Chocolate Fest since 2020!

- [Register to Attend In Person](#)
- [Register to Attend Via Zoom](#)
- [More Info](#)

EVENTS

WRRC and Indigenous Resilience Center Co-Sponsored Special Event: Kamilaroi (Indigenous) Knowledge and Methodologies to Inform Water Management



Date: Wednesday, February 1 (Thursday, Feb 2 for Australia)

Time: 3:00 pm – 4:15 pm Arizona Time (9:00 am – 10:15 am
Canberra, Australia Time)

Location: [Webinar Only](#)

Speaker: Bradley Moggridge, *Associate Professor in Indigenous Water Science,
University of Canberra*

Indigenous knowledge and methodologies are missing components in water management in Australia. On this dry, flat, and ancient continent, Traditional Knowledge has been passed on from generation to generation for millennia (over 65,000 years). This is a profound reliance on knowledge of surface and groundwater, which has been critical to ensuring the survival of Indigenous peoples in a dry landscape through the role of traditional knowledge in finding and protecting water places. Indigenous knowledge and methodologies can provide new (but old) evidence that is culturally appropriate, and which generates a cultural safe space with Indigenous researchers and communities leading. This special event presentation is co-sponsored by the WRRC and the Indigenous Resilience Center.

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

Upcoming Events

Feb 10: [WRRC 19th Annual Chocolate Fest and Announcement of 2022 Photo Contest Winners](#)

Feb 15 at 12:00 pm: [WRRC Brown Bag Webinar: A Living River – The Santa Cruz River from Mexico to Marana](#)

Mar 29 at 12:00 pm: WRRC Brown Bag Webinar featuring Stanford Professor of Geophysics Rosemary Knight – Save the Date!

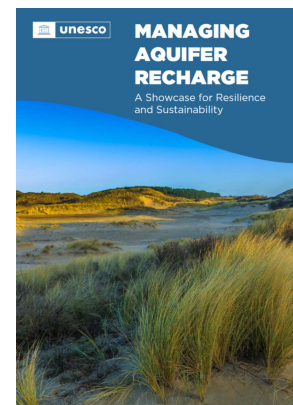
MARK YOUR CALENDARS!



NEWS

Yan Zheng Presents on Water Quality Challenges for MAR

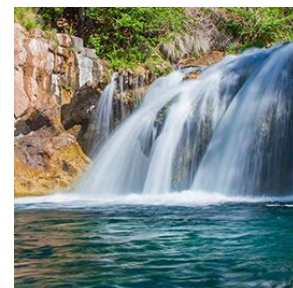
On January 18, Dr. Yan Zheng gave a WRRC Brown Bag presentation entitled “The 21st Century Water Quality Challenges for Managed Aquifer Recharge.” Zheng is a chair professor in the School of Environmental Science and Engineering at Southern University of Science and Technology, Shenzhen, China, and co-chair for the International Association of Hydrogeologists’ Managing Aquifer Recharge Commission. In her presentation, she pointed to a recent UNESCO publication on managed aquifer recharge (MAR) indicating that MAR is a sustainable approach for enhancing climate resilience, but also spoke to the difficulties of implementation and the threat pollution poses to groundwater sustainability. Mentioning her early career experience as a toxicologist, Dr. Zheng shared new findings on trace organic pollutants including antibiotics, which partially degrade but may have effects on human health or the environment, and commented that groundwater monitoring programs should pay more attention to novel chemical and biological entities, especially when using MAR to bank water for future use. The final part of Zheng’s presentation addressed the challenge of governance and regulation for MAR and related water quality concerns, citing the importance of risk management. Zheng concluded by stating that regulations for complex water issues surrounding MAR require a multidisciplinary approach, drawing expertise from multiple fields.



[View the Recording](#)
[More Info](#)

WOTUS Definition Updated Again, AZ Protects its Own

On December 30, 2022, the EPA and US Army Corps of Engineers (USACE) announced their Final Rule, establishing a revised and, according to the joint EPA/USACE press release, “durable definition” of “waters of the United States” (WOTUS). The Rule was published in the [Federal Register](#) on January 18 and will be effective on March 20, 2023. The revised definition of WOTUS largely reverts to the pre-2015 definition and provides additional



interpretation and guidance. According to the agencies, the rulemaking seeks to balance historical Clean Water Act implementation and the legal precedent established in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers (SWANCC)* and *Rapanos v. United States*. As was the case with the previous two revised WOTUS definitions (in 2015 and 2020), challenges by stakeholder groups are likely. The Rule's implementation is also complicated by the ongoing Supreme Court case *Sackett v. EPA*, in which the "significant nexus" standard established in *Rapanos* is in question. The regulatory uncertainty caused by evolving definitions of WOTUS motivated the Arizona legislature to act in 2021 to protect water resources within the state. To this end, the Arizona Department of Environmental Quality developed the Arizona Surface Water Protection Program (SWPP). After an extensive rulemaking process, the SWPP rule has been [published](#) and goes into effect on February 20, 2023. More information on the SWPP rule, the rulemaking process, and the waters it protects is available [here](#).

Image: ADEQ

[Revised WOTUS Rule](#) [Arizona SWPP](#)



Meet APW's Newest AmeriCorps Members

Arizona Project WET added two new AmeriCorps members to its Tucson educational team this week. Seliah McCaslin (left) and Monica Stoll (right) will be working on the rainwater harvesting program and be joining APW's team of water educators. Seliah graduated from the University of Arizona with a degree in environmental studies and political science with an interest in environmental and social justice issues. Monica is the daughter of former APW staff member Mary Ann Stoll and was brought up around APW's programs and tools. She studied material science engineering and is looking forward to continuing her education in publishing. Both members will be walking students through the process of installing rain gardens while teaching them how green stormwater infrastructure can have a positive impact on their communities.



New Opportunity for WRRRC Post-Doc Mary-Belle Cruz Ayala

Post-doctoral researcher Mary-Belle Cruz Ayala is leaving the WRRRC to start a position with the state government in her home of La Paz, Baja California Sur, Mexico. Mary-Belle earned her PhD at the University of Arizona Arid Lands Resource Sciences Program. In 2020, she began working for the Transboundary Aquifer Assessment Program (TAAP), a federally funded program in Arizona focused on assessing the binational Santa Cruz River and San Pedro Aquifers. While working for the WRRRC, Mary-Belle was dedicated to TAAP and research activities on transboundary aquifer topics. In 2022, she participated as co-author of two papers related to the TAAP. She will be missed, but all of us at the WRRRC wish her well and are excited about her continuing work on water issues in Mexico.



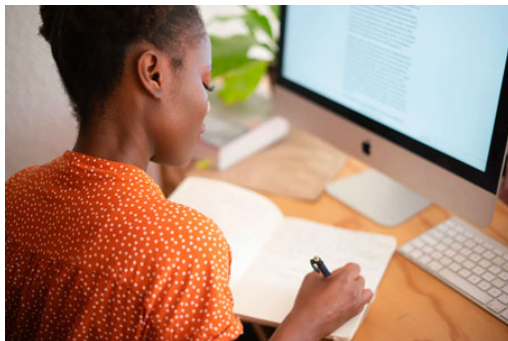
[MAR Paper](#)

Director Megdal Interviewed on Women in Science

WRRC Director Sharon Megdal was recently interviewed by Rosario Sánchez as part of the Women in Science Initiative hosted by the Permanent Forum of Binational Waters. The initiative seeks to “highlight and raise awareness about the work and projects being accomplished by women in the science field particularly at the border region.” In her interview, Megdal addressed some of the challenges facing women in science and related professional fields. She mentioned her dislike for the perception of some fields as “hard” sciences and others as “soft” sciences, arguing that “we’re all scientists.” Sánchez’s questions touched on the common feeling among female academics of never doing enough and over-committing, as well as the structural and institutional challenges that women face in the workplace. Dr. Megdal spoke about being driven by “wanting to feel like I’m making a difference.” Megdal’s parting advice to young women was to have confidence in themselves and not be afraid to ask questions.



[View the Recording Women in Science](#)



WRA 104 GRANTS

Water Scarcity and Availability • Water-Related Hazards and Climate Variability • Water Quality Water Policy, Planning, and Socioeconomics Ecosystem and Drainage Basin Functions • Water Technology and Innovation • Workforce Development and Water Literacy.

[MORE INFO](#)

WATER JOBS

- ADEQ [Multiple Positions](#)
- ADWR [Multiple Positions](#)
- Oregon Water Resources Department [Senior Hydrologist](#)
- Quantified Ventures [Colorado River Basin SRF Watershed Coordinator](#)

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

ANNOUNCEMENTS

- **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:** [Australian Water Reuse Perspectives Webcast](#)
- **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](#)
- **Jan 31:** [Tucson One Water 2100 Survey Deadline](#)
- **Feb 1:** [90th Annual Western Snow Conference – Call for Papers Submission Deadline](#)
- **Feb 1 at 3:00 pm AZ time (Feb 2 at 9:00 am Canberra, Australia time):** [WRRC and IRC Co-Sponsored Special Event: Kamilaroi \(Indigenous\) Knowledge and Methodologies to Inform Water Management](#)
- **Feb 2:** [CAP Board Meeting](#)
- **Feb 6:** [Instream Flow and Water Level Conservation Center – Comment Period Deadline](#)
- **Feb 6-7:** [Groundwater Resources Association of California Conference: Climate Resilient & Sustainable Remediation](#)
- **Feb 10:** [WRRC 19th Annual Chocolate Fest and Announcement of 2022 Photo Contest Winners](#)
- **Feb 15:** [Arizona Water Protection Fund Commission Public Hearing](#)
- **Feb 15:** [WRRC Brown Bag Webinar: A Living River – The Santa Cruz River from Mexico to Marana](#)
- **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 18:** [AHS Tucson Chapter: Mission Garden, Mission San Agustín, and S-cuk Son Tour](#)
- **Feb 22:** [104\(b\) Grant Program – Proposal Submission 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:** [104\(g\) Grant Program – Proposal Submission Deadline](#)
- **Mar 1:** [Tucson AHS Chapter 2023 Halpenny Intern Scholarship – Application Deadline](#)
- **Mar 1:** [Babbitt Center Dissertation Fellowship Program – Application Deadline](#)
- **Mar 1-3:** [2023 Land and Water Summit](#)
- **Mar 2-4:** [2023 Native Women in Agriculture & Natural Resources Symposium](#)
- **Mar 5-8:** [2023 WaterReuse Symposium](#)
- **Mar 6:** [2023 AHS Symposium – Call for Abstracts Deadline](#)
- **Mar 6-7:** [Arizona Viticulture Strategic Planning Summit](#)
- **Mar 6-8:** [Growing Water Smart: Integrated Water and Land Use Planning Workshop](#)
- **Mar 9-10:** [Sustainable Water Investment Summit](#)
- **Mar 11:** [Sustainable Landscapes Expo](#)
- **Mar 13-17:** [UC Davis Soil & Water Assessment Tool \(SWAT\) Model Training Course](#)
- **Mar 29:** [WRRC Brown Bag Webinar featuring Stanford Professor of Geophysics Rosemary Knight – Save the Date!](#)
- **Apr 1:** [ADWR Water Awareness Month 2023 Kick-off Festival](#)
- **Apr 3:** [Rodney Blaine Lewis Scholars Award – Application Deadline](#)
- **Apr 17-20:** [90th Annual Western Snow Conference](#)
- **Apr 20-21:** [Santa Cruz River Research Days](#)
- **Apr 24-25:** [NGWA Conference: Managed Aquifer Recharge: Unleashing Resiliency, Protecting Groundwater Quality Conference](#)

- **May 5:** [32nd Desert Horticulture 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 18-19:** [CLE International's Law of the Colorado River 23rd Annual Conference: The Next Century of River Policy](#)
- **May 19:** [NAMWUA Water Utility Leadership Forum](#)
- **Jun 13-15:** [UCOWR/NIWR 2023 Annual Water Resources Conference](#)
- **Jun 15-16:** [2023 Next Generation Water Summit](#)
- **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>

OTHER NOTICES

AHS Tucson Chapter - Judges Needed for SARSEF

Each year the Tucson Chapter and the AHS Foundation participate in the Southern Arizona Regional Science and Engineering Fair (SARSEF) as sponsored award judges, giving \$25 to \$100 checks for hydrology science projects to grades K–12. These monetary awards are generously provided by AHS, AHSEF, and the Central Arizona Project (CAP). If you are available to judge a grade group in this fun and beneficial event to encourage future budding hydrologists, please contact David Barnes at SARSEF@azhydrosoc.org no later than **Tuesday, February 28**.

Surface Water Protection Program: Notice of Final Rulemaking

The Surface Water Protection Program (SWPP) Rule ensures Arizona's most important waters are protected regardless of federal actions that may change the scope of surface water regulation in the future. The rule is due to be published in the January 27 issue of the Arizona Administrative Register and will be available on the [Secretary of State's website](#). In the meantime, ADEQ has posted the Notice of Final Rulemaking. The effective date for the SWPP rule is February 20, 2023. [More Info](#)

Tucson Water One Water 2100 Survey

Please take the One Water 2100 public survey today and let Tucson Water know which water management strategies are most important to you. Water supply and conservation were the two top areas of concern identified through shareholder, technical partner, and public input. Now, your input is needed to help guide long-range decisions

about water management practices and the Capital Improvement Program. The survey is open until January 31. [More Info](#)

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

[Contact us here](#)