

WEEKLY WAVE



THE UNIVERSITY OF ARIZONA
COOPERATIVE EXTENSION

WATER RESOURCES RESEARCH CENTER



August 25, 2023 / Volume 11, Issue 21

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: Factsheet Release, Transboundary Aquifer Assessment Book, Welcome Wildcats, Drinking Water Treatment Research, Job Site

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The image shows the cover of the 'Arizona Water Factsheet Greenlee County' from July 2023. The cover features a map of Arizona with Greenlee County highlighted, a water drop icon, and the title 'ARIZONA WATER FACTSHEETS GREENLEE COUNTY'. It also includes a pie chart titled 'Arizona Water Supply and Demand' showing the following data:

Category	Value	Percentage
Surface Water	1,224 Mgal/Day	81%
Groundwater	1,760 Mgal/Day	8%
Reclaimed Water	176 Mgal/Day	2%
Municipal	1,340 Mgal/Day	20%
Industrial	4,700 Mgal/Day	7%

The cover also includes a 'Statewide Context' map and a 'Water in Greenlee County' section.

WRRC Releases Greenlee County Water Factsheet

The Greenlee County Water Factsheet is now available! As the seventh installment in the WRRC's Arizona Water Factsheet series, this resource offers a wide-ranging yet concise overview of water in Greenlee County. It covers topics such as water supply and demand, as well as the cultural significance of the county's main water-dependent economic sectors. In Greenlee County, its small population base, high percentage of federally-managed lands, and ongoing legal proceedings regarding the use of the Gila River will

continue to affect water resources planning and management. As is the process for each WRRRC Arizona Water Factsheet, the development of the resource relies on input from a Technical Advisory Committee (TAC) composed of local experts and stakeholders. For Greenlee County, the TAC was led by Greenlee County Extension Director and Natural Resources Agent Kim McReynolds. We are grateful for the input received from other local and regional stakeholders, including Greenlee County and the US Department of Agriculture Southwest Watershed Research Center.

[Greenlee County Water Factsheet](#)

EVENTS

WRRC Water Webinar: Agricultural Managed Aquifer Recharge (Ag-MAR) – A Method for Sustainable Groundwater Management

Date: Thursday, September 7, 2023
Time: 12:00 pm – 1:15 pm Arizona Time
Location: [Webinar Only](#)



Speaker: Helen E. Dahlke, *Professor in Integrated Hydrologic Sciences, University of California, Davis*

More than two billion people and 40% of global agricultural production depend upon unsustainable groundwater extraction. Managed Aquifer Recharge (MAR), the practice of strategically recharging water to replenish subsurface storage, is an important practice for managing groundwater more sustainably. However, it is not yet reaching its full potential to counterbalance growing global groundwater demand. Agricultural Managed Aquifer Recharge (Ag-MAR) is an emerging method for spreading large volume flows on agricultural lands and has the capacity for widespread global implementation. Yet, knowledge gaps, synergies, and trade-offs in Ag-MAR research still exist. In this WRRC Water Webinar, Professor Helen Dahlke describes the practice and feasibility of using agricultural land as intentional spreading basins for groundwater recharge, the opportunities to address climate change with Ag-MAR, and the benefits of Ag-MAR including groundwater storage, increased environmental flows, and domestic well support. Dahlke will present the current state of research with respect to the environmental impacts of Ag-MAR on water quality (e.g., nitrate), crop health and yield, and the multidisciplinary approach needed for communication and coordination of Ag-MAR programs with stakeholders and the public. In groundwater-dependent agricultural regions, Ag-MAR provides an important approach to achieving groundwater sustainability; however, it provides one of many solutions to achieve groundwater sustainability and cannot offset the need for groundwater conservation.

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

WRRC Water Webinar: Planning for Water Resilience: Strategic Investment in Green and Traditional Infrastructure

Date: Monday, September 11, 2023

Time: 12:00 pm – 1:15 pm Arizona Time

Location: [Webinar Only](#)

Speakers:

Elvy Barton, *Manager, Water and Forest Sustainability, SRP*
Ron Klawitter, *Manager, Water System Projects, SRP*



The Salt River Project (SRP) was founded in 1903 and has been managing water supplies from the Salt and Verde Rivers for more than a century. As SRP prepares for the next century of serving reliable water supplies to the Valley, changing climate conditions, consumer interest, and demands require strategic investment in the Green and Traditional Infrastructure that support SRP's water supplies.

SRP's Forest Health initiatives are building on more than a century of watershed stewardship while adapting to the current needs and changing dynamics of the Salt and Verde Watersheds. Over 100 years of wildfire suppression in northern Arizona's forests leave the Salt and Verde rivers at risk. SRP is investing in landscape-scale forest restoration with community and business partners to ensure that watershed health is improved and maintained in support of ecosystem and water resilience.

SRP's Water System Projects are focused on ensuring SRP's water storage and conveyance systems are ready to meet community needs, while preparing for a warmer and more variable future. SRP is building regional partnerships with municipal, Tribal, and agricultural partners to plan and implement infrastructure and operational projects that are intended to improve water availability and resilience in central Arizona.

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

Upcoming WRRC Events

Oct 12: WRRC Water Webinar: "Solar River, Covering and Powering Canals with Photovoltaic Energy" – Benjamin Lepley – Save the Date!

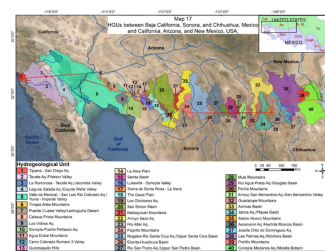
Other Events

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

NEWS

Transboundary Aquifer Assessment Book Published

A [new book](#), *Advances in Transboundary Aquifer Assessment*, edited by WRRC Director Sharon B. Megdal and Anne-Marie Matherne of the US Geological Survey, reprints the Special Issue of the same title that was published previously online in the open-access journal [Water](#). Around



the globe, groundwater is an increasingly important resource. Therefore, understanding aquifers, both in terms of their physical characteristics and governance contexts, is taking on greater importance. Of particular concern are transboundary aquifers whose effective management requires cross-border collaboration and the cooperation of multiple jurisdictions. This volume features recent work on the topic. The collected articles fall into three sections: (1) Transboundary governance and stakeholder engagement, (2) Aquifer characterization and assessment, and (3) Integration of stakeholder input into model development. Articles range from physical descriptions of aquifer systems and the impacts of system stressors to investigations of “the complexities introduced by working across borders with differing governance frameworks, institutions, cultures, and sometimes languages.” Stakeholder engagement practices that facilitate the needed cooperation are highlighted. Most of the articles deal with conditions and issues of aquifers shared across the US-Mexico border, “a semi-arid to arid region experiencing significant population growth and changing climate conditions.” Together, the collected articles are intended to “encourage additional research that contributes to understanding groundwater and aquifer systems,” and will inform “groundwater management discussions by policymakers.”

Image: Sanchez, R.; Rodriguez, L. Transboundary Aquifers between Baja California, Sonora and Chihuahua, Mexico, and California, Arizona and New Mexico, United States: Identification and Categorization. Water 2021, 13, 2878. Figure 17.

[Download the Book](#)

[View and Download the Special Issue](#)

Welcome Back, Wildcats!

Welcome, Wildcats, to the 2023–2024 academic year! For many, the beginning of the fall semester brings excitement and eagerness to start something new. This summer has been long, hot, and mostly dry, but we hope you are all rested and refreshed; ready to learn and do more amazing things this year. We look forward to seeing both new and returning faces around campus and invite students to participate in the WRRC’s fall events. Visit our website to stay up-to-date on all our activities and programs. We wish everyone a successful and fulfilling semester!



Image: UArizona Campus Aerial

[Upcoming Events](#)

[WRRC Website](#)

UArizona Researchers Receive \$10 Million for Drinking Water Treatment Research

In July, UArizona WEST Center researchers Dr. Kerry Hickenbottom and Dr. Andrea Achilli secured a \$10 million award to study improved water security and reuse technology. The award (funded by the US Army Engineer Research and Development Center (ERDC)) is the largest grant for water-use research in UArizona’s history. UArizona, the University of Southern California, the University of Nevada, and the ERDC have joined together to establish the Consortium for Potable Water Reuse, a cooperative research partnership that aims to develop advanced



technologies for water treatment, contaminant and pathogen detection and removal, and energy reduction. In three phases, Achilli and Hickenbottom's research project will explore the potential for sunlight in treating wastewater, using activated carbon to remove contaminants, and developing more sensitive tests for water-borne viruses. The project also addresses energy-intensive desalination, seeking sustainable solutions for salt removal and mineral extraction, and will include support for workforce development in water treatment, both at the research facility and at the Pima County wastewater treatment plant where the WEST Center is located.

Image: Julius Schlosburg

[News Coverage](#) [Water Reuse Consortium](#)

Water Jobs & Opportunities Listed on WRRC Website

Did you know that in addition to the Water Jobs section of the *Weekly Wave*, the WRRC maintains a dedicated page on its website for water-related jobs and opportunities? Listed job postings link directly to the application information. If you have a water job, internship, or another opportunity that you'd like to share with us for posting to our site, please send details, including the position title, organization name, and a link (or pdf) to the posting to jessiehampton@arizona.edu.



[Jobs & Opportunities](#)

WATER JOBS

WRRC Seeks Associate Director/Specialist

The University of Arizona Water Resources Research Center (WRRC) is actively seeking candidates for its Associate Director / Extension Specialist position to work closely with the Director, providing center administration, program direction, and leadership for WRRC. In this position, the successful candidate will also conduct applied research and engagement, pursue scholarly activities, and establish and maintain extramural funding. The minimum qualifications include a Doctorate or equivalent terminal degree, a minimum of five years of work experience related to Arizona's and regional water management, a strong record of scholarly accomplishments, and a record of collaborative projects and programs. The WRRC is administratively located within the University of Arizona's Division of Agriculture, Life and Veterinary Sciences, and Cooperative Extension and is also part of the National Institutes for Water Resources, a national network of federally authorized institutes/centers that address unique water-related concerns of the individual states and the nation. The academic home of the position will depend on the candidate's specialization and the rank will depend on the candidate's record and experience.

Please visit [UA Talent req14913](#) for additional information on the position and to apply.

WRRC Seeks AmeriCorps Members for Outreach Communication

The WRRC is seeking AmeriCorps service members with interest and experience in writing about water and/or environmental topics to assist with our varying outreach programs. [Apply Here](#)

- ADWR [Hydrology Intern](#)
- AZGFD [Water Resources Manager Senior](#)
- City of Peoria [Water Services Director](#)
- City of Prescott [Water Resource and Environmental Director](#)
- IRes [Research Assistant](#)
- The Nature Conservancy [Water Program Policy Specialist](#)
- Town of Queen Creek [Water Conservation Specialist](#)
- Watershed Management Group [Bilingual Education & Engagement Coordinator](#)

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

ANNOUNCEMENTS

- **Aug 25:** [Arizona Water Protection Fund for Fiscal Year 2024 Grant Cycle – Application Deadline](#)
- **Sep 5:** [Hassayampa River Mineral Withdrawal: Comments and Public Meeting Request Deadline](#)
- **Sep 6:** [Water Justice Knowledge Exchange Launch Event](#)
- **Sep 6:** [CAGR 2025 Plan of Operation Water Supplies Roundtable](#)
- **Sep 7:** [WRRC Water Webinar: Agricultural Managed Aquifer Recharge \(Ag-MAR\) – A Method for Sustainable Groundwater Management](#)
- **Sep 10:** [AWWA WaterSmart Innovations 2023 Student Poster Competition – Submission Deadline](#)
- **Sep 10–13:** [AWWA Water Infrastructure Conference 2023](#)
- **Sep 10–15:** [Southwest Tribal Climate Action Summit](#)
- **Sep 11:** [WRRC Water Webinar: SRP Projects: Forest Restoration / Bartlett Dam – Elvy Barton/Ron Klawitter](#)
- **Sep 11:** [Virtual Public Hearing: Notice of Proposed Expedited Rulemaking – Drinking Water Regulations – Lead and Copper Rule Revisions](#)
- **Sep 12:** [AWRA 2023 Annual Water Resources Conference – Student Poster Deadline](#)
- **Sep 13:** [AHS Symposium Fieldtrip: Oak Creek Watershed Restoration](#)
- **Sep 13–16:** [Arizona Hydrological Society 35th Annual Symposium](#)
- **Sep 14:** [Sonoran Institute: Bugs and Brews 2023](#)
- **Sep 15:** [ABWC Annual Meeting & Water Conference: Watery Going to Do?](#)
- **Sep 16:** [¡Agua es Vida! Celebration of Water in the Desert and Short Film Showcase](#)
- **Sep 16:** [AHS Symposium Fieldtrip: Hoxworth Springs, Lake Mary, and Montezuma Well](#)
- **Sep 20:** [CAP University Virtual Learning](#)
- **Sep 27–28:** [Southwest Drought Learning Network 2023 Annual Meeting](#)
- **Sep 28:** [CNRS International Emerging Actions – Proposal Submission Deadline](#)
- **Sep 29:** [AWRA 2024 Geospatial Water Technology Conference – Abstract Deadline](#)
- **Sep 30:** [Sonoran Institute: Guided Dragonfly Tours](#)
- **Oct 1:** [RiversEdge West 2024 Conference – Oral Presentation Abstract Deadline](#)
- **Oct 3–5:** [AWWA WaterSmart Innovations 2023 Conference](#)
- **Oct 6:** [AWRA 2024 Spring Conference – Abstract Deadline](#)
- **Oct 7:** [Urban Wildlife Conservation Day: Rio Reimagined Salt River Clean-Up](#)

- **Oct 12:** WRRC Water Webinar: "Solar River, Covering and Powering Canals with Photovoltaic Energy" – Benjamin Lepley – Save the Date!
- **Oct 19-20:** [Upper Gila Watershed Forum](#) - **CANCELED**
- **Oct 21:** [19th Annual Research Insights in Semiarid Ecosystems \(RISE\) Symposium](#)
- **Oct 25:** [Water Education Foundation's 39th Annual Water Summit: Taking on the Improbable in Western Water](#)
- **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 14–16:** [US Water Alliance One Water Summit 2023](#)
- **Dec 5–7:** [AWWA North American Water Loss Conference & Exposition](#)
- **Dec 11–15:** [AGU23: Wide. Open. Science](#)
- **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](#)
- **Mar 5–7, 2024:** [RiversEdge West 2024 Conference – Restoration for the Future: Promoting Resilience in Our Rivers and Communities](#)
- **Mar 11–14, 2024:** [AWWA WaterReuse 2024 Symposium](#)
- **Mar 25–27, 2024:** [AWRA 2024 Geospatial Water Technology Conference](#)
- **Apr 8–10, 2024:** [AWRA 2024 Spring Conference](#)
- **Jun 10–13, 2024:** [AWWA 2024 Annual Conference & Expo \(ACE24\): Transforming Our Water Future](#)

PUBLICATIONS & MEDIA

Tool & Explainer on Long-Term Storage Credits Released

Stored groundwater – known as Long-Term Storage Credits or LTSCs – is an important component of water supply for many Central Arizona cities and other entities. The Kyl Center for Water Policy recently released a new Arizona Water Blueprint feature on how LTSCs work and a tool to show where water is banked and who owns it. [More Info](#)

OTHER NOTICES

ITEP Water and Land Resources Academic Year Internship Host Site Recruitment

The Institute for Tribal Environmental Professionals (ITEP) is beginning the recruitment process for the 2023–2024 Water and Land Resources Academic Year Internship Host sites. They hope to recruit 15 host sites for this year for both in-person and virtual internships. The deadline to [apply](#) is August 31, 2023. [More Info](#)

Call for Public Comment: 2023 Triennial Review Report — Colorado River System

The Colorado River Basin Salinity Control Forum (the Forum) is conducting a Triennial Review, as required by the Clean Water Act, for the water quality criteria benchmarks for salinity in the Colorado River, and requests your comments. The recommendation is to maintain the current standard. Currently, the Colorado River is meeting the criteria. You can view the report [here](#). Please send your comments to Forum Executive Director Don Barnett via [email](#) by September 15, 2023.

Western SARE Grant Writing Workshop

A free grant writing workshop will be held by Western Sustainable Agriculture and Research Education (WSARE) for farmers, ranchers, educators, grad students, etc. to learn more about sustainable agriculture grants available through SARE. This workshop will be hosted at MAC (Maricopa Ag Center) on Thursday, September 14, 2023, and will be provided at no cost to the participants. [Pre-registration](#) is required. [More Info](#)

ADEQ Update on AWP Program

The Arizona Department of Environmental Quality (ADEQ) has provided an update about progress in developing an Advanced Water Purification (AWP) Program (formerly referred to as Direct Potable Reuse). To gauge public perceptions and inform proposed rulemaking, ADEQ commissioned stakeholder research and an accompanying survey. You may download and view a copy of the final research and survey reports here: [AWP Research & Survey Reports](#).

WaterSMART Applied Science Grants for Fiscal Year 2023 [More Info](#)

Water Conservation Field Services Program: Financial Assistance for Fiscal Years 2023 and 2024 [More Info](#)

Call for Public Comment: Draft Prospectus of the First National National Assessment

In coordination with the US Department of Interior, the US Global Change Research Program (USGCRP) welcomes public comment on the draft prospectus of the First National Nature Assessment (NNA1). The scope of NNA1 is to assess the status, observed trends, and future projections of America's lands, waters, wildlife, biodiversity, and ecosystems and the benefits they provide. All comments must be submitted via the [USGCRP Public Contribution System](#) by September 18, 2023. [More Info](#)

Reclamation Announces 2024 Operating Conditions for Lake Powell and Lake Mead
[News Release](#)

Do you have a story idea, water job announcement, or event to share?
[Contact us here](#)