

WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**



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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. [Subscribe to the Weekly Wave.](#)

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IN THIS ISSUE: CAP Service, BOR-Basin Study Series, Brown Bag Recap, APW, Karletta Chief, New ADEQ Tool



A Picture is Worth a Thousand Words

This month marks the end of WRRC Director Sharon Megdal's service as a board member of the Central Arizona Water Conservation District, better known as the Central Arizona Project (CAP). As a memento for her 12 years of service, Dr. Megdal was presented with the delightful caricature pictured here. It highlights her CAGRD and Underground Storage Committee membership, along with her serving as Board Secretary and Chair of this committee from February 2016 through 2020. Also pictured are key connections between her CAP Board service and her water work and research at the WRRC, including recharge basins that are important to CAGRD operations and Central Arizona water management.

The WATEC folder to her left signifies her work connecting CAP Board members, staff, and many other Arizonans to Israeli technology and water management through conferences, seminars, and other means. The WRRC's water map is featured in the upper right, and Sharon's worry about getting back to Tucson in time for UArizona basketball games is reflected by the basketball on the shelf! And note the colors she's wearing. In addition to expressing her appreciation of having the honor to serve as a member of the CAP Board, Director Megdal laughed when she saw what was written on the spine of one of the books by noting, "My students will appreciate that I emphasize adhering to the 'that vs. which' rule universally!"

WRRC EVENTS

Upcoming Webinars

Jan 14, 2021

Colorado River Water Transfers - Let's Discuss

Patrick Cunningham, *General Counsel Emeritus, HighGround Public Affairs*

Transfer of Water Rights in Arizona

Michael J. Pearce, *Gammage & Burnham, PLC*



Jan 20, 2021 – Collaborative Capacity Building and Sovereign Science with NASA and the Navajo Nation

Amber Jean McCullum, PhD, *Applied Scientist, BAERI/NASA Ames Research Center*
 Nikki Tulley, PhD Student, *Department of Environmental Science, University of Arizona*

Feb 3, 2021 - Recovery Planning

Angie Lohse, *Senior Policy Analyst, Central Arizona Project*
 Virginia O'Connell, *Director, Arizona Water Banking Authority*

Mar 11, 2021 - Community Service and Environmental Justice as Essential Best Practices For The Clean Water Utility of the Future

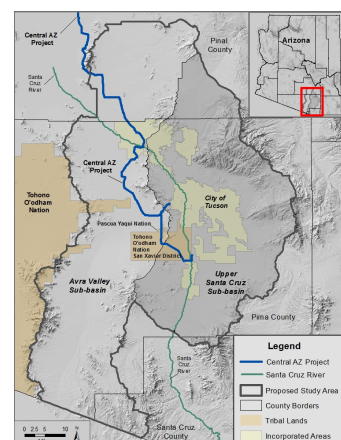
Andrew Kricun, *Managing Director, Moonshot Missions; Senior Fellow, US Water Alliance*

NEWS

BOR Article Series, Part 2: Lower Santa Cruz River Basin Study

The following is part two of a four-part article series from our valued colleagues at the US Bureau of Reclamation (Reclamation). The series will cover the three Basin Studies currently underway in Arizona. John Rasmussen, Eve Halper, and Valerie Swick, Water Resource Planners at Reclamation, authored the series. Part three will be published in the December 18 issue of the Weekly Wave.

The Lower Santa Cruz River Basin Study (Basin Study) was proposed by the Southern Arizona Water Users Association and was initiated by the US Bureau of Reclamation (Reclamation) in 2016. Other cost-share partners include Pima Association of Governments, Cortaro-Marana Irrigation District, Central Arizona Project (CAP), Arizona Department of Water Resources and

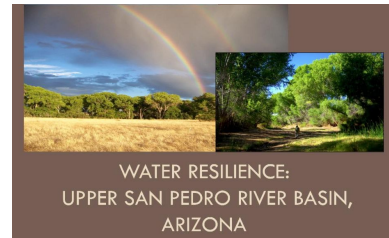


UArizona. The study area is identical to the Tucson Active Management Area (TAMA), which covers 3,866 square miles in Southern Arizona. Municipal use comprises the greatest portion of water demand in the TAMA, followed by agriculture. The remaining industrial demand is primarily due to mining.

[Read More](#)

Water Management Efforts on the Upper San Pedro River Basin

Last week's WRRC Brown Bag webinar, "Balancing Water for People and Nature: The Upper San Pedro River," featured Scott Deeny and Holly Richter of The Nature Conservancy. Their presentation provided an overview of groundwater data collected, current and future projects, and policies collaboratively developed over the past 20 years. The objective was to balance the water needs of the San Pedro Riparian National Conservation Area with the communities of Fort Huachuca. Richter opened the presentation with information on hydrologic monitoring efforts conducted by various partners, such as US Geological Survey, throughout the entire watershed. She also described the implementation of regional water resource management projects in Cochise County, which include the construction of aquifer recharge facilities. With the aid of groundwater capture maps and modeling, Deeny and Richter were able to identify the best areas to recharge and recover water. Both water experts would like to see urban-enhanced runoff used to recharge aquifers, but the legal status of the water added to the system by enhancements must be established to ensure its future recoverability.



[View the Recording](#)



Re-Imagining the Possibilities – AGU2020

Since 2017, Betsy Wilkening of APW has attended the American Geophysical Union (AGU) Fall Meeting to present the achievements of the Recharge the Rain (RtR) project, a NOAA-sponsored Environmental Literacy Program in partnership with Watershed Management Group. It is only appropriate, at the close of this very odd year, that APW's presentation is about *Re-Imagining the Possibilities*. All of us are starting to realize that these possibilities translate into new opportunities for education, communication, and connection.



[Read More](#)

Karletta Chief Receives AGU Award

UArizona's Dr. Karletta Chief was one of only 36 people to be honored with an AGU Ambassador Award and fellowship by the American Geophysical Union in 2020. WRRC Director Sharon B. Megdal, one of Chief's nominators, characterized her as a trailblazer. An Associate Professor and Extension Specialist in the Department of Environmental

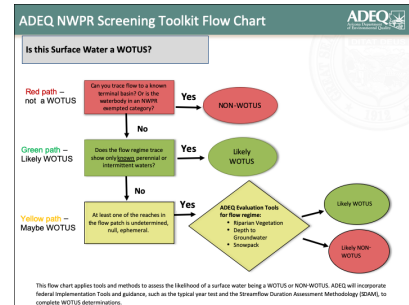
Science doing research in watershed and unsaturated zone hydrology, Chief is also the Principal Investigator for an NSF-funded program that focuses on Indigenous food, energy, and water. Diné (Navajo) from Black Mesa, AZ, she received the AGU award for “pioneering” work “leading to transformative outcomes for Native American tribes and institutions.” Congratulations, Dr. Chief!



[Award Announcement](#)

New ADEQ Navigable Water Screening Tool Kit

Facilities with a point source discharge of a pollutant into Waters of the US are required to obtain a permit under the Clean Water Act. Waters of the US are defined under the federal Navigable Waters Protection Rule and encompass ocean waters, permanent or perennial surface waters (present continuously throughout the year), intermittent tributaries that contribute to those permanent surface waters, and certain lakes and wetlands. Only 12% of the surface water in Arizona is known to be permanent, and therefore under federal jurisdiction. About 80% of stream segments have not yet been assigned a flow regime. The ADEQ has developed the Navigable Water Screening Tool Kit to evaluate the risk of a discharge being directly or indirectly connected to jurisdictional Waters of the US. This Tool Kit allows for a fact-based determination of surface water flow regimes, using a flow chart, the US Geological Survey StreamStats Flow Path Tool, and eMaps layers.



[More Info](#)

WATER JOBS

- [Arizona State Land Department \(ASLD\) Water Resources Specialist III](#)
- [Arizona State Land Department \(ASLD\) Water Resources Specialist 3](#)
- [City of Tempe Water Program Specialist](#)
- [City of Tempe Environmental Compliance Supervisor](#)
- [ICWP Water Policy Internships](#) (Spring 2021 student internships)

Please visit [UA Water Network](#) for more water jobs & opportunities.

ANNOUNCEMENTS

- [USGS National Water Dashboard \(NWD\)](#), real-time water, weather, and flood forecast information - beta version
- **Dec 15:** [GWAICC Post-2025 AMA Committee Meeting](#)
- **Dec 15:** [ADEQ Surface Water Protection Program Meeting](#)
- **Dec 16-Mar 10:** ADWR 5MP Work Group Meetings - [5th Management Plans Work Group Meeting](#), [5MP Agricultural Subgroup Meeting](#), [5MP Municipal Subgroup](#)

- Meeting, [5MP Turf Breakout Meeting](#), [5MP Safe-Yield Technical Subgroup Meeting](#)
- **Dec 16:** Water and Tribes Initiative webinar: [Universal Access to Clean Water](#)
 - **Dec 17:** 2021 Ford Foundation Fellowship Programs - **Predoctoral** Application Deadline
 - **Dec 31:** [International Conference on Water Energy Food and Sustainability \(ICoWEFS 2021 – Leiria, Portugal\)](#) - Abstract Deadline
 - **Dec 31:** [Water 2021 Travel Awards – Application Deadline](#)
 - **Dec 31:** [2021 Virtual Joint AWRA & National Capital Annual Water Symposium, Human Dimension to Resilient and Sustainable Water Management: Promoting Integrated Collaboration – Abstract Deadline](#)
 - **Jan 5-9, 2021:** [NCSE Drawdown 2021 Conference Research to Action: Science and Solutions for a Planet Under Pressure](#)
 - **Jan 8, 2021:** [US Government Review: IPCC Sixth Assessment Report \(WGII\)](#) – Deadline to submit comments
 - **Jan 12, 2021:** [GWAICC Desalination Committee Meeting](#)
 - **Jan 15, 2021:** [Resources 2021 Travel Award - Application Deadline](#)
 - **Feb 1, 2021:** [AWRA 2021 Summer Conference Connecting Land and Water for Healthy Communities \(July 19 – 21\) Denver, CO - Special Session Submission Deadline](#)
 - **Feb 15, 2021:** [Arizona Growing Water Smart Workshop - Application Deadline](#)
 - **Feb 16-26, 2021:** [RiversEdge West 19th Annual Research and Management Conference](#)
 - **Feb 23-24, 2021:** [GRA Virtual Event: The Future of Water](#)
 - **Feb 23-24, 2021:** [The Third International Congress on Desert Economy: Energy Economics between Deserts and Oceans \(Dakhla, Morocco\)](#)
 - **Mar 1, 2021:** [2021 Babbitt Dissertation Fellowships – Application Deadline](#)
 - **Mar 15-25, 2021:** [36th Annual WaterReuse Symposium: Resilience Redefined: health.economy.environment](#)
 - **Apr 1, 2021:** [Special Issue of the Journal Water \(ISSN 2073-4441, IF 2.544\) - Advances in Transboundary Aquifer Assessment - Manuscript Submission Deadline](#)
 - **Apr 1-Jul 1, 2021:** [Women in Water Scholarship - Applications Accepted](#)
 - **Apr 6-8, 2021:** [AZ Water 2021 Annual Conference](#)
 - **May 9-14, 2021:** [IWA World Water Congress & Exhibition - Water for Smart Liveable Cities \(Copenhagen\)](#)
 - **May 18-20, 2021:** [11th International Conference on Sustainable Water Resources Management: Effective Approaches for River Basins and Urban Catchments \(Milan, Italy\)](#)
 - **Jun 8-10, 2021:** [UCOWR/NIWR Annual Water Resources Conference](#)
 - **Jun 13-16, 2021:** [ACE21 - Registration Open](#)
 - **Jun 21-23, 2021:** [WEF SWI Stormwater Summit 2021](#)
 - **Nov 1-3, 2021:** [AIWW 2021: Blue-Green Deals with Integrated Solutions](#)

PUBLICATIONS and MEDIA

- [The Fragile Flyway: Conserving the Rio Grande Corridor](#)
- [Rethinking Groundwater Flow on the South Rim of the Grand Canyon, USA: Characterizing Recharge Sources and Flow Paths with Environmental Tracers: *Hydrogeology Journal*, 28, 1593–1613.](#)
- [Critical evaluation of Stable Isotope Mixing End-Members for Estimating Groundwater Recharge Sources: Case Study from the South Rim of the Grand Canyon, Arizona, USA: *Hydrogeology Journal*, 28, 1575–1591.](#)

- [*Geochemical Characterization of Groundwater Evolution South of Grand Canyon, Arizona \(USA\): Hydrogeology Journal, 28, 1615–1633.*](#)
- [*Assessing Uranium and Select Trace Elements Associated with Breccia Pipe Uranium Deposits in the Colorado River and Main Tributaries in Grand Canyon, USA: PLoS ONE, 15\(11\): e0241502.*](#)

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