

# WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

**WATER RESOURCES  
RESEARCH CENTER**



**October 21, 2022 / Volume 10, Issue 28**

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](#).

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**IN THIS ISSUE:** Brown Bag Recap, Ak-Chin Farms, Colorado River, APW, ADWR



## WRRC Brown Bag Provides Insight into the Future of Potable Reuse

On October 13, the WRRC hosted William Alley, director of Science and Technology at the National Ground Water Association, to provide an overview of his recently published book, *The Water Recycling Revolution: Tapping into the Future*. Water security is becoming increasingly uncertain, notably in the American Southwest. In the book, Alley and his wife, Rosemarie, analyzed case studies of potable reuse systems in Arizona, Colorado, California, and Texas to discuss the history, challenges, and successes of potable reuse.

Alley began his presentation by emphasizing the potential for potable reuse. He estimated that approximately 12 billion gallons of wastewater are discharged directly into our oceans annually and only 6.6% of wastewater is treated and reused. He said the largest hindrance in water reuse progress is public buy-in and the “yuck factor,” exacerbated by phrases such as “toilet-to-tap” that have circulated since the first implementation of modern reuse water systems. Based on the information gathered from the case studies, he provided a framework that defines successful water reuse systems. These guidelines included operational reliability, resilience, quality assurance and control, highly trained operators, advanced computational analytics, meaningful outreach programs, and complete system transparency.

- [View the Recording](#)
- [Director Sharon Megdal's Book Review](#)
- [Order the Book](#)

## EVENTS

### **Native Voices in STEM Fall 2022 Seminar Series: Groundwater to Snow Science: My Research and Teaching Path to Becoming a "Jack(lyn)- Of-All-Trades**



**Date:** Oct 26, 2022

**Time:** 12:00 pm–1:00 pm Arizona Time

**Location:** In person - Building/Room TBA

[Webinar Only](#)

**Speaker:** *Melissa Clutter, Assistant Professor, Geosciences Department, Fort Lewis College*

Melissa Clutter is an Assistant Professor in the Geosciences Department at Fort Lewis College. Born and raised in Tulsa, Oklahoma, as a member of the Cherokee Nation, she traveled west for college. She received her BA in Geosciences from Fort Lewis College in Colorado, and during this time fell in love with Durango and the Four Corners region. After college, she worked at Chesapeake Energy Corporation for three years as an Engineering Technician. Determined to change career paths and seek higher education, she attended graduate school as an NSF Graduate Research Fellow and an Alfred P. Sloan Foundation Fellow at the University of Arizona, where she received a Ph.D. in Hydrology and an M.Sc. in Soil, Water, and Environmental Science. Her research interests stem from her passion for undergraduate teaching and communicating science to the public. She strives not just to further the field of hydrologic modeling, but also to help non-profits, government agencies, and private landowners make science-informed management decisions.

[Join via Zoom](#)

[More Info](#)

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### **Upcoming Events**

Nov 10: [WRRRC Brown Bag Webinar: 104\(b\) Grant Program: Student Research Presentations](#)

**Nov 18: [WRRRC Brown Bag Webinar: Watershed Collaboration in the Tucson Basin: Santa Cruz Watershed Collaborative Adopts a Watershed Restoration Plan to Promote Flowing Rivers](#)**

**Nov 29: Water and Agriculture: Chile-Arizona Experience; Co-hosted by the Agricultural Office of the Embassy of Chile in the US and the University of Arizona Water Resources Research Center; 11:00 am to 1:00 pm AZ Time – Save the Date**

**Nov 30: [Native Voices in STEM Fall 2022 Seminar Series: Featuring Dr. Raymond Torres – Save the Date](#)**

## NEWS

### **Ak-Chin Farms Hosts WRRC**

On Monday, October 17, Ak-Chin Tribal Council Member Delia Carlyle and Ak-Chin Farms Manager Damian Murrieta hosted WRRC Director Sharon B. Megdal and Cooperative Extension, Arizona Project WET, and WRRC staff members on a tour of the 16,000-acre Ak-Chin Farms. A highlight of the tour was the system that supplies “just-in-time” delivery of potatoes to Frito Lays and In & Out Burger. Ak-Chin potatoes go from field to chips or fries within 24 hours. The tour also featured Ak-Chin irrigation efficiencies, including laser-leveled fields, linear move sprinkler irrigation technology, and the reuse on small pecan groves of residual water from the sprinkler irrigation of alfalfa. The Ak-Chin Community receives all its water, up to 108,300 acre-feet, from the Central Arizona Project. Low Colorado River supply has led to CAP deliveries closer to the Tribe’s minimum allocation of 72,000 acre-feet. This means there is less water to dilute the salts, nitrates, and arsenic carried by groundwater in the Santa Rosa Canal to the reservoir that serves not only Ak-Chin Farms but also community drinking water. The Ak-Chin potable water system was not designed to remove these contaminants. Litigation concerning this issue is ongoing.



All who attended the tour enjoyed the experience greatly. The WRRC would like to extend gratitude to our gracious hosts at Ak-Chin Indian Community for the opportunity and for their wonderful hospitality!

### **[Ak-Chin Indian Community](#)**

### **California’s Response to 2023 Shortage**

Last week, California submitted a proposal to the Department of the Interior that included a plan to voluntarily leave 400,000 acre-feet (AF) of their allocation in the Colorado River. In 1922, the Colorado River Compact allotted 7.5 million acre-feet of Colorado River water to the lower basin states. However, current climate patterns and low water levels in Lakes Mead and Powell put at risk the river’s capacity to meet water demands in the future. The US Bureau of Reclamation has declared a Tier 2a shortage on the river that will take effect in January 2023. The 400,000 AF represents less than 10% of California’s normal annual allocation. Under current rules for a Tier 2a shortage, California is not obligated to take any reductions. By comparison, Arizona is expected to reduce its allocation by 21%. Arizona Department of Water Resources Director Tom Buschatzke stated previously that Arizona should not be expected to conserve more than California, regardless of the



relative priority of their water rights. Although he did not make specific comments on California's letter, Buschatzke noted the proposal contained both concerns and promises. The proposed reduction in Colorado River water use is no more than was offered during previous failed negotiations. However, the proposal also referred to 'augmented conservation efforts' made possible with funds from the recent federal Inflation Reduction Act, which set aside \$4 billion to fund drought relief projects. Even so, current voluntary conservation proposals fall far short of what is needed to forestall federally imposed reductions.

*Image: Southwest Biological Science Center*

- [AP News Article](#)
- [CNN Article](#)
- [Axios Phoenix Article](#)



## Human and Plant Superheroes

Last week the Arizona Project WET team had the pleasure of introducing a variety of “superheroes” to a global community of colleagues at the North American Association of Environmental Educators. First, in a session entitled “*Fostering passion and competency in youth to engage in environmental policy*,” six environmental policy superheroes discussed their work in impacting climate policy. Three young people from Arizona Youth Climate Coalition shared their superpowers of persistence and passion that keep them going on their mission to ensure a livable climate. Two educators encouraged the audience to use their teaching superpowers for good by supporting students in taking action. “Education is and should be advocacy,” said Oscar Medina of Prescott College. Finally, State Representative Andres Cano and Tucson City Councilwoman Nikki Lee encouraged all those present to consider that climate advocacy is at its best when it considers intersectionality—that we build a healthier environment when we join forces to support policy that fosters strong, healthy communities. The following day, the APW team introduced educators to the idea of Plant Superheroes—taking advantage of the energy and enthusiasm that kids have for superheroes to teach about plant guilds and adaptations. APW shared their heat-fighting band of desert plants with the power to withstand heat and drought and attract pollinators. They also invited participants to create superheroes from plants in their own ecosystems and share them through a costume, one-act play, or poster. APW staff were particularly touched to be introduced to the Ukrainian Kalyna bush, a plant that is deeply embedded in Ukrainian culture and symbolism due to its unique beauty and adaptations.



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## ADWR Issues Order on Possible Hualapai Valley INA Designation

On September 20, the Arizona Department of Water Resources (ADWR) held a public meeting to discuss the possible designation of the Hualapai Valley Groundwater Basin as an Irrigation Non-Expansion Area (INA). This was a response to a June 2022 request from the Mohave County Board of Supervisors that ADWR take “whatever actions available and necessary” to implement the designation. The purpose of an INA is to “preserve the existing irrigation of cultivated lands.” After hearing public comments and considering hydrologic data, ADWR Director Tom Buschatzke signed an order on October 12 to initiate the designation procedure. The Order limits irrigation within the Proposed INA to acres

that were irrigated at any time during the last five years. This limitation will remain in place until the Director makes a final determination on the Proposed INA. On November 12, there will be a public hearing to consider additional evidence and determine whether there is “insufficient groundwater to provide a reasonably safe supply for irrigation of the cultivated lands in the area at the current rates of withdrawal,” whether the establishment of an active management area —instead of an INA— is necessary, and whether ADWR should issue an order designating the area as an INA. Evidence may be submitted in person at the hearing or in writing by mail, email, fax, or hand delivery. Additional details and a map of the proposed INA are available on the ADWR [website](#).

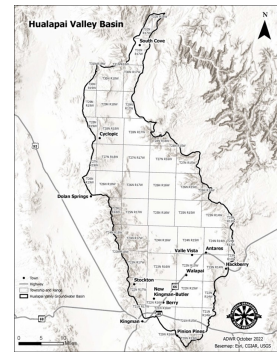


Image: ADWR

[More Info](#)  
[INA FAQs](#)

**WRRC 2022 Photo Contest**

**WATER NOW!**  
*Living With Less*

**Submit your photos!**

## WATER JOBS

- AMWUA [Water Policy Analyst](#)
- Arizona Water Banking Authority [Water Resources Specialist III](#)
- City of Tempe [Water Conservation Assistant](#)
- Town of Prescott Valley [Utilities Engineer](#)

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

## ANNOUNCEMENTS

- **Oct 22:** [Watershed Management Group: 11<sup>th</sup> Annual Desert Living Home Tour](#)
- **Oct 26:** [One Water Salinity Management Innovation Summit 2022](#)
- **Oct 26:** [Native Voices in STEM Fall 2022 Seminar Series: Groundwater to Snow Science: My Research and Teaching Path to Becoming a "Jack\(lyn\)- Of-All-Trades](#)
- **Oct 28:** [Public Comment Period for Arizona Water Protection Fund Fiscal Year 2023 Grant Applications – Deadline](#)
- **Oct 30:** [Campus Sustainability Fund Mini Grants – Final Application Deadline](#)
- **Nov 7:** [SCWC Fall Field Trip: Connecting with our Watershed: Springs, Shallow Groundwater Areas, and River Restoration](#)
- **Nov 7-9:** [AWRA 2022 Annual Water Resources Conference](#)
- **Nov 9:** [Water Education Foundation 2023 California Water Leaders Virtual Q&A](#)

- **Nov 10:** [WRRRC Brown Bag Webinar: 104\(b\) Grant Program: Student Research Presentations](#)
- **Nov 12:** [ADWR Public Hearing: Proposed Hualapai Valley INA](#)
- **Nov 15:** [SCWC Fall Field Trip: Connecting with our Watershed: Springs, Shallow Groundwater Areas, and River Restoration](#)
- **Nov 16:** [Yuma Center of Excellence for Desert Agriculture: Desert Agriculture Research Symposium](#)
- **Nov 18:** [WRRRC Brown Bag Webinar: Watershed Collaboration in the Tucson Basin: Santa Cruz Watershed Collaborative Adopts a Watershed Restoration Plan to Promote Flowing Rivers](#)
- **Nov 27-Dec 1:** [The 8<sup>th</sup> International Conference on Drylands, Deserts & Desertification: Learning from Drylands: A Global Effort Towards Ecosystem Restoration](#)
- **Nov 29:** [Water and Agriculture: Chile-Arizona Experience; Co-hosted by the Agricultural Office of the Embassy of Chile in the US and the University of Arizona Water Resources Research Center – Save the Date](#)
- **Nov 30:** [Native Voices in STEM Fall 2022 Seminar Series: Featuring Dr. Raymond Torres – Save the Date](#)
- **Dec 7:** [Water Education Foundation 2023 California Water Leaders Class – Application Deadline](#)
- **Dec 8:** [ADWR Supply and Demand Assessment Informational Meeting](#)
- **Jan 15, 2023:** [Campus Sustainability Fund Annual Grants – Preliminary Application Deadline](#)
- **Feb 15, 2023:** [Call for Papers: JCWRE Special Issue on Undergraduate Research and Education – Submission Deadline](#)
- **May 7-10, 2023:** [National Association of Environmental Professionals \(NAEP\) 2023 Conference](#)
- **May 8-9, 2023:** [Water for Food Global Conference: Cultivating Innovation: Solutions for a Changing World](#)
- **Jun 13-15, 2023:** [UCOWR/NIWR 2023 Annual Water Resources Conference](#)
- **Jul 17-19, 2023:** [AWRA 2023 Summer Conference: Connecting Land & Water for Healthy Communities](#)

## OTHER NOTICES

### **Campus Sustainability Fund Preliminary Annual Grant Application**

The Campus Sustainability Fund is pleased to announce that its Preliminary Annual Grant Application will open on November 14, 2022, and close on January 15, 2023. All students, staff, and faculty are invited to submit proposals that advance environmental and social sustainability on campus. These grants will award between \$5,000 - \$100,000. All applicants must attend a virtual office hour meeting with the committee prior to submitting their Preliminary Application. [More Info](#)

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

[Contact us here](#)