

# WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION

## WATER RESOURCES RESEARCH CENTER



May 13, 2022 / Volume 10, Issue 18

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.](#)  
[Land Acknowledgement](#)

[WRRRC Office Update](#)

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**IN THIS ISSUE:** WRRRC Conference, New Publication, Colorado River, APW, 104(b)



## Arizona's Agricultural Outlook: Water, Climate, and Sustainability



COLLEGE OF AGRICULTURE & LIFE SCIENCES  
COOPERATIVE EXTENSION  
WATER RESOURCES  
RESEARCH CENTER

## REGISTRATION NOW OPEN

July 12 | In-person Event  
with Livestreaming

July 13-14 | Additional Virtual Programming

## Registration Now Open for the WRRC 2022 Annual Conference July 12-14

Registration for the 2022 WRRRC Annual Conference is now open! This year's conference, [Arizona's Agricultural Outlook: Water, Climate, and Sustainability](#), will take place over three days, July 12-14. Day One will be held in person at the University of Arizona Student Union on Tuesday, July 12 from 9:00 am to 4:00 pm Arizona time. Two mornings of virtual programming, 9:00 am to noon, will follow the in-person event. The [agenda](#) reflects the diversity of Arizona agriculture, including large-scale irrigated operations, specialty agriculture, ranching, dairy farming, Tribal farms, and traditional practices. The program will highlight innovations, sustainable practices, the impacts of drought and climate change, and the conditions that shape agricultural activities. Thanks to the generosity of

our sponsors, standard registration for the in-person day is only \$60, and we are pleased to offer \$25 registration for students. For those who cannot make it to Tucson on July 12, we are offering non-interactive livestreaming at no charge. We are also offering free registration for the July 13 and July 14 virtual programming, which will be interactive. We hope to see many of you in Tucson for our first major in-person gathering since 2019. We've missed you!

[More Info and Registration](#)  
[Become a Conference Sponsor!](#)

## EVENTS

### **WRRC Special Event: INHABITANTS: Indigenous Perspectives on Restoring Our World - Asynchronous Screening and Panel Q&A**

**Date:** May 16, 2022

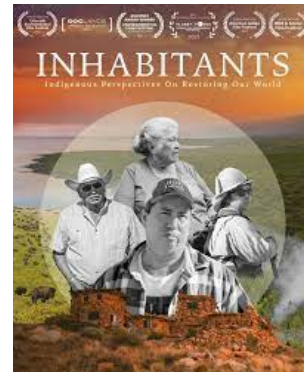
**Time:** 4:00 pm-5:00 pm Arizona Time

**Location:** [Webinar Only](#)

**Speakers:**

Dr. Michael Kotutwa Johnson, *Assistant Specialist, UArizona Resiliency Center, School of Natural Resources and the Environment*  
Costa Boutsikaris, *Co-director/Cinematographer*  
Anna Palmer, *Co-Director/Producer*

**Moderated by:** Rebecca Tsosie, J.D., *Regents Professor of Law, UArizona James E. Rogers College of Law*



#### **Documentary Viewing and Panel Discussion**

As part of the WRRC's Indigenous Water Dialogues, we are pleased to announce a special panel discussion of INHABITANTS: Indigenous Perspectives On Restoring Our World, as well as free screening for all event registrants. The film is a beautiful account of the role that Native communities have in shaping our broader approach to climate change adaptation as it explores the restoration of their traditional land management practices. Using both narrative and visual depictions of Native land stewardship methods in deserts, coastlines, forests, and prairies, INHABITANTS relates the personal histories of five different Native American Tribes and how they have continued to exercise their self-determination to the local and global challenges posed by our changing climate.

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

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### **WRRC Brown Bag Webinar: Water Reuse Action Plan and REUSExplorer Demo**

**Date:** May 17, 2022

**Time:** 12:00 pm-1:15 pm Arizona Time

**Location:** [Webinar Only](#)

**Speaker:** Sharon Nappier, *National Program Leader for Water Reuse, US Environmental Protection Agency*



The National Water Reuse Action Plan (WRAP) helps drive progress on reuse by leveraging the expertise of scientists, policymakers, and local experts across the country to create a more resilient water future for communities of all sizes. The collaborative launched in February 2020 with federal, state, Tribal, local, and water sector partners to build state and local capacity to pursue reuse practices that help to solve local water resource challenges. There are currently more than 100 organizations partnering on 50 actions in the plan, ranging from scientific and technical advancements in water reuse to better policy and coordination across jurisdictions. The presentation will highlight progress across the WRAP actions and provide a demo of a new tool: Regulations and End-Use Specifications Explorer (REUSExplorer). The REUSExplorer compiles state water reuse regulations and guidelines and highlights the underlying scientific and technical basis of water quality metrics. This new web-based tool, developed by the Environmental Protection Agency (EPA) and partners under WRAP Action 3.1, is searchable by state, source of water, and end-use application to assist states interested in developing regulations and help utilities and practitioners to better understand current regulations. The first end-uses available include potable water reuse, onsite non-potable reuse, and other centralized non-potable reuse applications, not including agricultural and landscape reuse applications. The REUSExplorer is available at <http://www.epa.gov/reuseexplorer>.

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

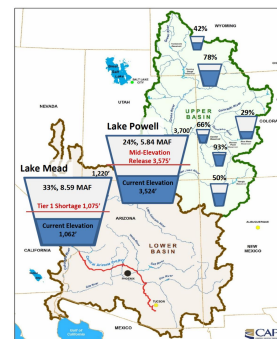
## Upcoming Events

Jul 12-14: [WRRC 2022 Annual Conference: Arizona's Agricultural Outlook: Water, Climate, and Sustainability](#)

## NEWS

### **Article Published on Water Policy Options as Arizona Adapts to a Drier Colorado River**

On May 9, *Renewable Resources Journal* released their latest issue, featuring an invited perspective piece by WRRC Director Sharon B. Megdal titled “Water Policy Options as Arizona Adapts to a Drier Colorado River: A Perspective.” The article provides an overview of how Arizona is affected by and responding to cutbacks in Colorado River water supplies. Megdal notes that river conditions are “getting worse more quickly than anyone expected,” and emphasizes that “[b]old actions are required so that Arizona can chart its water future.” She discusses a range of possible strategies from conservation, reuse, and desalination to developing water markets and redesigning the built environment. The article stresses the importance of collaboration, concluding that adapting to the new reality of a drier Colorado River will call for “both proactive and reactive actions.” The *Renewable Resources Journal* is an open access publication distributed broadly by the Renewable Natural Resources Foundation.



## [Read the Article](#)

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### Stressed Colorado River Makes News

In the last few weeks, most major and local news outlets have raised alarms about conditions in the Colorado River Basin and steep declines in river flows. A week ago, the Deputy Chief of Boulder Canyon Operations for the US Bureau of Reclamation held a briefing with the Director of the Arizona Department of Water Resources (ADWR) and the General Manager of the Central Arizona Project (CAP) to describe the very serious situation river water (and power) users face. They agreed that more must be done through voluntary conservation and innovative thinking to bolster the river. In the previous news cycle, the big story was the megadrought that continues to grip the southwestern US. According to some observers, drought, climate change, and the potential need for rapid reductions in water use augur levels of discomfort and sacrifice unseen since the development of the Colorado River system. Even Tucson, with its high-priority water subcontract and millions of gallons of stored CAP water, will feel impacts if the drought persists another decade. The Arizona Municipal Water Users Association (AMWUA) attempted in its blog this week to explain what is going on and what it means to residents of the Phoenix metro area. Other articles in the *Arizona Daily Star* and *Phoenix Republic*, among others, have presented in-depth examinations of various aspects and impacts. Most writers acknowledge that there is still time to avoid the worst-case impacts, but changes in how water is used are inevitable. Recent articles, including an op-ed from ADWR Director Tom Buschatzke and CAP General Manager Ted Cooke are linked [here](#).



### [Recent Article Links](#)

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### Future Engineers Build Underwater Robots

As technology improves, using remotely operated vehicles (ROVs) to perform maintenance tasks in underwater contexts (like inside pipes, on the sea floor, on dams, or in canals) becomes more and more common. Through Arizona Project WET's (APW) ROV program, students are given the opportunity to learn about the challenges and advantages of this strategy. On Saturday, May 7, APW and Marine Advanced Technology Education (MATE) held the 2022 Arizona Regional MATE ROV Competition. Nearly thirty 6th-12th grade students from various schools and organizations arrived with their underwater ROVs ready to compete. They presented engineering breakdowns and marketing displays to the judges, in which they laid out the processes used in creating their ROVs and companies. Teams detailed how they could use their ROVs to help the world around them, advance scientific discoveries, and what their companies stood for. After presenting, teams got to put their creations to the test. The students had to complete a variety of mock missions, ranging from releasing underwater ghost nets, repairing damaged cables, and retrieving deceased fish from the pool floor. Our finalists were Natural Selection Robotics in first, RTurtle in second, and Aquatic Explorers in third, all from Glendale High School. Great job to all who participated!



## WRRC Announces Section 104(b) Grant Awards

As the Water Resources Research Institute for Arizona, the WRRC provides small research grants through Section 104(b) of the Water Resources Research Act. Funded by the US Geological Survey, the Section 104(b) program supports water-related research projects of importance to the state. A primary goal of the program is to promote the entry of students and young scientists into the field of water resources. Based on the recommendation of the WRRC's Technical Advisory Committee, four research proposals were selected for funding. Three were from the University of Arizona: Dr. Joey Blankenship, *Adaptive Rotational Grazing: Increasing Soil Water Retention in Arid Landscapes*; Dr. Kerri Hickenbottom, *Optimization and Testing of Low-Energy Brackish Water Desalination in Arizona*; and Dr. Kevin Lansley, *Impact of Climate Change on Localized Flooding and Affected Populations*. The fourth proposal came from Northern Arizona University Associate Professor Dr. Temuulen Sankey, *Three-dimensional Characterization of Grand Canyon's Deep Karst Aquifer*. The WRRC is eager to follow the progress of these fascinating research projects. Student researchers involved in the projects will present their results in 2023. This fall, the WRRC will feature presentations by student researchers currently wrapping up their projects funded in the last grant cycle. Once the presentations are scheduled, notice will be made through the *Weekly Wave*. Stay tuned!



*Image: Vasey's Paradise waterfalls, Colorado River, Arizona, Jeff Sorensen, Arizona Game and Fish Department*

[WRRC 104\(b\) Program](#)  
[WRRR Program](#)



### The Summer Wave Will Return on May 27

This is the final issue of the *Weekly Wave* until the Fall, but don't worry, the *Summer Wave* will begin on a bi-weekly basis starting May 27. We thank you for your continued interest in the WRRC's many publications, programs, outreach efforts, and research projects, along with other water-related news and announcements.

## WATER JOBS

### UArizona Director, Cooperative Extension [Job Listing](#)

The University of Arizona seeks a strategic and innovative leader to be the next Director of the [UArizona Cooperative Extension System \(CES\)](#).

- WRRC [Statewide Water Information Manager](#)
- Town of Prescott Valley [Deputy Water Resources Director](#)
- Town of Gilbert [Water Conservation Coordinator](#)
- UC ANR [Statewide Director, California Institute for Water Resources](#)

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

## ANNOUNCEMENTS

- **May 15:** [The Babbitt Center for Land and Water Policy: 2022 Evaluating Tools for Integrating Land Use and Water Management – Proposal Deadline](#)
- **May 16:** [WRRRC Special Event: INHABITANTS: Indigenous Perspectives on Restoring Our World Screening and Panel Q&A](#)
- **May 16:** [ADEQ Stakeholder Meeting: State Surface Water Protection Program Significant Nexus Technical Paper](#)
- **May 16:** [AWRA 2022 Annual Water Resources Conference – Abstract Deadline](#)
- **May 17:** [WRRRC Brown Bag Webinar: Water Reuse Action Plan and REUSExplorer Demo](#)
- **May 19-20:** [23<sup>rd</sup> Annual Law of the Colorado River Conference](#)
- **May 24:** [AAWWA Event: The Colorado River: History, Current Conditions, Impacts and Solutions](#)
- **Jun 14-16:** [UCOWR/NIWR 2022 Annual Water Resources Conference](#)
- **Jun 15:** [The 8<sup>th</sup> International Conference on Drylands, Deserts & Desertification: Learning From Drylands: A Global Effort Towards Ecosystem Restoration – Abstract Deadline](#)
- **Jun 16-17:** [42<sup>nd</sup> Annual Colorado Law Conference on Natural Resources](#)
- **Jun 17-20:** [AHS Flagstaff Chapter North Rim Field School](#)
- **Jun 19-24:** [Frontiers in Hydrology 2022: Future of Water](#)
- **Jun 21-24:** [Global Council for Science and the Environment \(GCSE\) 2022 Virtual Conference: Biodiversity, Conservation Science, and Climate Change](#)
- **Jul 12-14:** [WRRRC 2022 Annual Conference: Arizona's Agricultural Outlook: Water, Climate, and Sustainability](#)
- **Aug 11-12:** [Arizona Water Law Conference](#)
- **Sep 11-14:** [AWWA 2022 Water Infrastructure Conference & Exposition](#)
- **Sep 11-15:** [IWA World Water Congress & Exhibition - Water for Smart Liveable Cities](#)
- **Sep 14-16:** [2022 AHS Annual Symposium](#)
- **Sep 26-27:** [OU International WaTER Conference](#)
- **Sep 26-29:** [State of the Verde Watershed Conference – The Future of the Verde: Solutions for the Next Decade](#)
- **Oct 6-8:** [SustainValencia2022; Achieving Sustainable Groundwater Management: Promising Directions and Unresolved Challenges](#)
- **Nov 7-9:** [AWRA 2022](#)

## PUBLICATIONS & MEDIA

Nabhan, Gary P., Eric Daugherty, and Tammi Hartung. 2022. "Health Benefits of the Diverse Volatile Oils in Native Plants of Ancient Ironwood-Giant Cactus Forests of the Sonoran Desert: An Adaptation to Climate Change?" *International Journal of Environmental Research and Public Health* 19, no. 6: 3250.

<https://doi.org/10.3390/ijerph19063250>

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

[Contact us here](#)