

WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**



Feb. 12, 2021 / Volume 9, Issue 6

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: Jean McLain, IMPACT, Pascua Yaqui, APW, Groundwater Awareness, Colorado River



WRRC Research Scientist Jean McLain Elected to National Research Council

In January 2021, WRRC Research Scientist Jean McLain was appointed to serve a 4-year term on the National Institute of Antimicrobial Resistance Research and Education (NIAMRRE) Leadership Council, an elected body of nine members composed of national and international thought leaders in the field of antimicrobial use. Antimicrobial Resistance (AMR) is one of the greatest threats to society, human and animal health, and economic prosperity. According to the CDC, antibiotic-resistant bacteria cause at least 2.8 million infections and 35,000 deaths in the US every year. The NIAMRRE addresses prioritized gaps in knowledge related to antimicrobial use, stewardship, and resistance that have been identified in the US National Action Plan to Combat Antimicrobial Resistance by

driving an effective AMR research agenda, participating in education and outreach related to AMR, and promoting funding mechanisms to support transdisciplinary research in AMR. In her appointment letter, the NIAMRRE Executive Director wrote, "This unanimous affirmation speaks to the expertise and knowledge that you have in the field of antimicrobial resistance."

[NIAMRRE](#)

WRRC EVENTS

Brown Bag: Reaching Safe-Yield in the Phoenix AMA

Date: Tuesday, Feb 16, 2021

Time: 12:00-1:15 p.m. MST

Location: [Webinar Only](#)

Speaker:

Jessica Fox, *Water Policy Advisor, AMWUA*



Among its many successes, Arizona's innovative Groundwater Management Act of 1980 established the Phoenix Active Management Area (AMA) and its management goal of safe-yield. Today, the Arizona Municipal Water Users Association (AMWUA) is an ongoing participant in two state-led processes that seek to evaluate the AMA's progress toward achieving its goal and develop near and long-term management solutions that reduce our reliance on groundwater. It is within the context of providing support to these processes that AMWUA recently produced an analysis of the progress and impediments toward achieving safe-yield in the Phoenix AMA. This presentation will describe AMWUA's evaluation of the Arizona Department of Water Resources' approach to tracking the AMA's safe-yield status, provide an overview of the issues surrounding safe-yield in the Phoenix AMA, and shed light on some obstacles to achieving safe-yield by 2025 and thereafter.

Jessica Fox is the Water Policy Advisor at AMWUA. She earned a B.S. in Environmental Studies from the SUNY College of Environmental Science and Forestry and an M.S. in Sustainability from Arizona State University. Before joining AMWUA, Jessica spent nearly nine years working as a water policy analyst for the Central Arizona Project and, more recently, the Central Arizona Groundwater Replenishment District.

[Register for the Webinar](#)

Upcoming Webinars

Mar 11: *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

Mar 31: *The Internet of Water: Partnerships for Progress —Modernizing Water Data to Meet 21st Century Needs*

Peter Colohan, *Executive Director, Internet of Water, Nicholas Institute for Environmental Policy Solutions, Duke University*



Apr 8: Binational Study of Water Desalination Opportunities in the Sea of Cortez
Chuck Cullom, *Colorado River Programs Manager, Central Arizona Project*
Lela Perkins, *Senior Water Resources Engineer, Jacobs Engineering Group*

Apr 14: Update from Tucson Water on Reuse Projects
John Kmiec, *Interim Director, Tucson Water*

OTHER EVENTS

23rd Annual Law of the Colorado River Conference: Preparing for Renewed River Management Plans

The 23rd Annual Law of the Colorado River Conference has a new virtual format! A diverse faculty will discuss many important topics on the conservation and management of the Colorado River during the two-day virtual conference, March 11-12, 2021.



Photo: Canoes on Lake Powell, Gilles Boyer, 2019

[More Information](#)

NEWS

IMPACT Magazine Features Navajo Nation Wicked Water Problems

The American Water Resources Association (AWRA) just released a new issue of its magazine, *Water Resources IMPACT*, on the theme of “Wicked Water Problems.” WRRRC Director Sharon B. Megdal was the lead guest editor of this issue and authored a feature article titled, “Takeaways from the 2020 AWRA Annual Conference Panel on Wicked Water Problems.” Other articles featured wicked water problems faced by Native American Tribes, including two that address water-related challenges that the COVID-19 pandemic has brought to the Navajo Nation. Crystal Tulley-Cordova from the Navajo Nation Department of Water Resources co-authored, “Chronic Wicked Water Problems in the Navajo Nation Heightened by the COVID-19 Pandemic, along with Nikki Tulley, UArizona PhD student, Bidtah Becker from the Navajo Tribal Utility Authority, and Karletta Chief, Associate Professor and Extension Specialist in the Department of Environmental Science at UArizona. In addition to describing the problems, they highlight some of the efforts made to improve the community’s access to water. Chief co-authored a second article, “Addressing Food-Energy-Water Insecurities of the Navajo Nation through University-Community Collaboration,” which presents partnerships to develop solar water purification and greenhouse technologies for high-yield food production on the Navajo Nation.



[Read Water Resources IMPACT](#)

Pascua Yaqui Tribe Awarded Federal Funds for Irrigation Project

The Pascua Yaqui Tribe was recently granted \$900,000 in federal funding to build an irrigation pipeline to their reservation. The 2020 Water Resources Development Act allocated \$150 million to fund water projects in Arizona and the Pascua Yaqui Tribe is the first to receive funding from the appropriation. Through the grant, the US Army Corps of Engineering will provide 75% of the upfront costs to construct the pipeline, which will deliver non-potable water from the CAP canal to the Pascua Yaqui reservation for irrigation purposes. With no access to surface water or groundwater, the Pascua Yaqui Tribe relies on potable water deliveries from the City of Tucson. This project will allow the Pascua Yaqui Tribe to free up more of its limited potable water supply and help plan for the future.



Photo: www.phoenix.gov

[Read More](#)



Vanessa Villalobos: Working to Change the Future with APW

We'd like to give a warm welcome to our newest APW water educator, Vanessa Villalobos. Vanessa graduated in May 2020 from Arizona State University with Bachelor's degrees in Sustainability and Spanish. Vanessa is now serving as an APW AmeriCorps member, volunteering her time and talent to strengthen our water education programs. Learn more about AmeriCorps at www.Americorps.gov/serve



Of course, with APW, Vanessa will be educating students about water stewardship and conservation, giving her the opportunity to do something that directly supports her passion - the United Nation's Sustainable Development Goals (SDG). Of the Goals, her favorite is Climate Action (Goal 13), which charges us to actively work on strategies to combat climate change. APW offers curriculum units and lessons that provide students with tangible ways to make their community more resilient to increased heat and extreme storms through rainwater harvesting. There are many other Goals that focus on different sustainability issues, such as clean water and sanitation for all (Goal 6), and conservation and sustainability of marine resources (Goal 14). Learn more about the SDGs here: <https://www.sdgforchildren.org/>.

The APW team is so pleased to have Vanessa join us to support our mission, developing water stewardship and STEM literacy for Arizona's youth.

- [APW](#)
 - [AmeriCorps](#)
 - [SDGs](#)
-

Save the Week of March 7-13 for Groundwater Awareness



This year, National Groundwater Awareness Week will be observed March 7-13, when advocates for safe, sustainable groundwater will be getting the word out about the importance of groundwater through special events and activities. The theme this year is speaking up for groundwater. The WRRC will be starting off the week with a presentation on March 8, from 12:00-1:15 pm MST, by the authors of its soon-to-be-published 2021 *Arroyo*, an annual publication on a water issue of timely interest in Arizona. The title of the *Arroyo* and presentation is “Arizona’s Groundwater Management: Past, Present, and Future.” The authors build on WRRC’s 2020 Annual Conference, where leaders and experts in groundwater management looked 40 years back to the 1980 Arizona Groundwater Management Act, surveyed current issues, and peered 40 years into the future. Stay tuned for more information on Groundwater Awareness Week activities in the water community. The National Groundwater Association provides a hub for Awareness Week participants, along with supporting ideas and information.

[National Groundwater Awareness Week](#) [WRRC 2020 Annual Conference](#)

New Study Highlights Strain on Colorado River

A recently published white paper, “Alternative Management Paradigms for the Future of the Colorado and Green Rivers,” describes how declining runoff and increasing consumptive use of the Colorado River affects not only supply but also ecosystems, and assesses alternative management strategies to mitigate the associated risks. The authors, led by Kevin Wheeler, state the purpose of their paper as encouraging “wide-ranging and innovative thinking about how to sustainably manage the water supply, while simultaneously encouraging the negotiators of new agreements to consider their effects on ecosystems.” Among the paper’s findings is that an incremental approach to adaptation is unlikely to meet the growing challenges ahead, and sustainable management of the Colorado River will require “Upper Basin limitations and substantially larger Lower Basin reductions than are currently envisaged.”

Combined reservoir storage during a highly plausible future impacted by climate change with Upper and Lower Basin consumptive use management

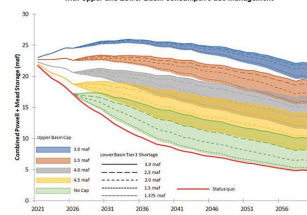


Image source: Wheeler, K. et al., 2021

[Executive Summary](#) [Full Paper](#)

WATER JOBS

- [USDA Announces Robust Hiring Effort for Conservation Careers in Arizona](#)
- Arizona Forward [Marketing and Events Specialist](#)
- Environmental Defense Fund [Groundwater-Dependent Ecosystems Intern](#)
- Seri [Program Manager](#)

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

ANNOUNCEMENTS

- **Feb 15:** [UCOWR/NIWR Annual Water Resources Conference - Abstract Deadline](#)
- **Feb 16:** [AHS Phoenix Monthly Chapter Meeting](#)
- **Feb 17-26:** [RiversEdge West 2021 Conference - *Changing Rivers*](#)
- **Feb 18:** [*Using Water Markets as a Resource Management Tool: Overview of Australian Water Market Principles and Potential Applications for Arizona*](#)
- **Feb 18-19:** [Family Farm Alliance 2021 Conference and Annual Meeting: *Bridge Over Troubled Water*](#)
- **Feb 19:** [*Re-envisioning the Middle East Ecosystem: Desert Ecology and Environmental Diplomacy* - Registration Deadline](#)
- **Feb 23-24:** [GRA Virtual Event: *The Future of Water*](#)
- **Feb 24-Mar 10:** [ADWR 5MP Work Group Meetings - *5MP Turf Breakout Meeting, 5MP Safe-Yield Technical Subgroup Meeting*](#)
- **Feb 28:** [Indigenous Food, Energy, and Water Security and Sovereignty \(Indige- FEWSS\) Traineeship Program - Application Deadline](#)
- **Mar 1:** [2021 Babbitt Center Dissertation Fellowships - Application Deadline](#)
- **Mar 1:** [Arizona Growing Water Smart Workshop - *Integrating Water and Land Use to Create Resilience* - Application Deadline Extended](#)
- **Mar 3:** [*Problematic Groundwater Contaminants: More than PFAS Forum* - Abstract Deadline](#)
- **Mar 7-13:** [National Groundwater Awareness Week](#)
- **Mar 9:** [RNRF Virtual Round Table: *Renegotiating Colorado River Allocations – Hot 20-Year Drought and Soaring Populations*](#)
- **Mar 11-12:** [23rd Annual Law of the Colorado River Conference](#)
- **Mar 12:** [GRA 4th Annual Western Groundwater Congress – Abstract Deadline](#)
- **Mar 15-25:** [36th Annual WateReuse Symposium: *Resilience Redefined: health.economy.environment*](#)
- **Mar 22:** [World Water Day Webinar: *Managed Aquifer Recharge – A Showcase for Resilience and Sustainability* - Save the Date!](#)
- **Mar 24:** [UCOWR Winter 2021 Virtual Roundtable: *Addressing Wicked Water Problems*](#)
- **Mar 25-26:** [Santa Cruz River Research Days](#)
- **Mar 30-Apr 13:** [2021 AWRA Virtual Young Professional Workshop Series: *Navigating Your Path From Student to Working Professional in the Time of COVID-19*](#)
- **Apr 1:** [Special Issue of the Journal *Water* \(ISSN 2073-4441, IF 2.544\) - *Advances in Transboundary Aquifer Assessment* - Manuscript Submission Deadline](#)
- **Apr 1-Jul 1:** [Women in Water Scholarship - Applications Accepted](#)
- **Apr 5:** [Virtual Kick-Off for the 3rd Annual Arizona Water Professionals Appreciation Week \(Apr 5-11\)](#)
- **Apr 6-8:** [AZ Water 2021 Annual Conference](#)
- **Apr 6-8:** [Virtual 2021 Southwest Adaptation Forum \(SWAF\)](#)
- **Apr 15-16:** [2021 Virtual Joint AWRA & National Capital Annual Water Symposium, *Human Dimension to Resilient and Sustainable Water Management: Promoting Integrated Collaboration* - Registration Open](#)
- **Apr 30:** [NWRI Fellowship Program 2021 – Application Deadline](#)
- **May 10-12:** [International Conference on Water Energy Food and Sustainability \(ICoWEFS 2021 - Leiria, Portugal\)](#)
- **May 18-19:** [The Third International Congress on Desert Economy: *Energy Economics between Deserts and Oceans* \(Dakhla, Morocco\)](#)
- **May 18-20:** [11th International Conference on Sustainable Water Resources Management: *Effective Approaches for River Basins and Urban Catchments* \(Milan, Italy\)](#)

- **May 24-26:** [International Arid Lands Consortium Virtual Conference *Addressing the Environmental Challenges of Arid Lands*](#)
- **Jun 13-16:** [ACE21 - Registration Open](#)
- **Jun 22-23:** [WEF SWI Stormwater Summit 2021](#)
- **Jun 22-23:** [*Fate of PFAS: From Groundwater to Tap Water*](#)
- **Jul 19-21:** [AWRA 2021 Virtual Summer Conference *Connecting Land & Water for Healthy Communities* - Registration Open](#)
- **Nov 1-3:** [AIWW 2021: *Blue-Green Deals with Integrated Solutions*](#)
- **Sep 15-17:** [Annual AHS Symposium - Save the Date](#)
- **Sep 2022:** [IWA World Water Congress & Exhibition - *Water for Smart Liveable Cities* \(Copenhagen\)](#)

Visit our Website