

WEEKLY WAVE



COLLEGE OF AGRICULTURE & LIFE SCIENCES
COOPERATIVE EXTENSION

**WATER RESOURCES
RESEARCH CENTER**



Mar 5, 2021 / Volume 9, Issue 9

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:

Arroyo, Water Series, National Symposium, APW, Paul La Farga, Tucson Water

ARROYO 2021

2021 Arroyo Published

On March 5, the WRRRC released its 2021 *Arroyo*, "Arizona Groundwater Management – Past, Present and Future." Taking its inspiration from the WRRRC's 2020 Annual

Conference, “Water at the Crossroads: The Next 40 Years,” this *Arroyo* covers the history of the 1980 Arizona Groundwater Management Act (GMA) and the mechanisms through which the act is making groundwater use in Arizona more sustainable. The passage of the 1980 GMA represented a major change in Arizona’s attitudes toward sustainable groundwater management. Today, groundwater use in most of the populous regions of Arizona is monitored and regulated to preserve a dependable water supply for generations to come, but significant challenges remain. The 2021 *Arroyo* provides background context and examines some of Arizona’s remaining and emerging water issues affecting groundwater management. Among these are meeting the needs of communities outside the GMA’s Active Management Areas and responding to likely Colorado River shortages without returning to groundwater overdraft. The *Arroyo* examines the role of Arizona’s Native Nations and the challenges to Arizona’s natural environment. It goes on to explore some innovative solutions that policymakers, managers, and stakeholders are developing to address these issues. A PDF of the new *Arroyo* can be downloaded free from the WRRC website. Print copies are available by special request. Join us on March 8 for a Brown Bag webinar highlighting key sections of the *Arroyo*.

[Download the PDF](#)

[Register for the Brown Bag Webinar](#)

EVENTS

Brown Bag Webinar: Arizona's Groundwater Management: Past, Present and Future

Date: Monday, Mar 8, 2021

Time: 12:00-1:15 pm MST

Location: [Webinar Only](#)

Speakers:

Susanna Eden, PhD, *Research Program Officer, Water Resources Research Center, UArizona*

Brian McGreal, *MS Student, Department of Agricultural and Resource Economics, UArizona*

Arizona's landmark Groundwater Management Act turned 40 last year and the WRRC marked the occasion by focusing the 2020 annual conference on the legacy of the Act, current groundwater challenges, and potential future pathways.

Building on this foundation, the authors of the 2021 *Arroyo* developed a comprehensive overview of groundwater management in Arizona that looks back over 40 years and ahead toward 2060 and beyond. The presentation will highlight key sections of the *Arroyo* as reference points for discussion.



[Register Here](#)

[More Info](#)

Brown Bag Webinar: Community Service and Environmental Justice as an Essential Best Practice for Clean Water Utilities of the Future

Date: Thursday, Mar 11, 2021

Time: 12:00-1:15 pm MST

Location: [Webinar Only](#)

Speakers:

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



The old paradigm for clean water utilities was to see permit compliance as the ceiling of aspirations and to avoid community engagement to the maximal extent possible. However, the new paradigm for the clean water utilities of the future is to see permit compliance as a floor and to strive to be environmental champions and anchor institutions in the communities they serve. This presentation will describe how the clean water utility located in Camden, NJ, one of the most economically distressed communities in the United States, traversed a learning curve from indifference to their community to work towards being an anchor institution. It will also discuss how this is something that can, and should, be done by any and every water utility in the nation.

[Register Here](#)

[More Info](#)

Upcoming WRRC Webinars

Mar 17: [Special Event Series - Water Solutions for Our Warmer World \(Episode 1\): Perspectives on Regional Water Sustainability](#)

Mar 22: [Special World Water Day Event - Managing Aquifer Recharge: A Showcase for Resilience and Sustainability](#)

Mar 31: [Brown Bag Webinar - The Internet of Water: Modern Water Data Infrastructure for 21st Century Water Management](#)

Peter Colohan, *Executive Director, Internet of Water Project, Duke University*

Apr 8: **Brown Bag Webinar - 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: **Brown Bag Webinar - Update from Tucson Water on Reuse Projects**

John Kmiec, *Interim Director, Tucson Water*



External Events

Mar 11-12: [23rd Annual Law of the Colorado River Conference: Preparing for Renewed River Management Plans](#)

NEWS

UArizona Webinar Series on Water Research and Solutions

Droughts, intense rainstorms, floods, debris flows, sea-level rise: all have the common element of water, and all are being exacerbated by climate change. A warmer world will bring increasing ecological, social, and economic challenges in which water plays a key role. What can we as a community do? The UArizona, with a long history of partnering its own experts in water-related research and policy with those from organizations throughout the region, is helping to build water-related resilience at multiple scales.



[Read More](#)

National Symposium to Feature Session on Navajo Nation Water Challenges

On April 15-16, the American Water Resources Association (AWRA) and National Capital Region will host the symposium “Human Dimension to Resilient & Sustainable Water Management: Promoting Integrated Collaboration.” Experts from a variety of backgrounds will address topics such as circular economies, managing for the unknown (for example, the COVID-19 pandemic), sociohydrology, environmental justice, and innovations in water resource management. On April 15, the plenary session, “The Wicked Water Problems of the Navajo Nation and Efforts to Address Them,” will feature Dr. Crystal Tulley-Cordova, Principal Hydrologist at the Navajo Nation Department of Water Resources, Nikki Tulley, UArizona PhD student, Bidtah Becker, Associate Attorney with the Navajo Tribal Utility Authority, and Dr. Karletta Chief, Associate Professor and Associate Extension Specialist at UArizona. WRRRC Director Dr. Sharon B. Megdal will moderate the session. Fees for the two-day virtual program are \$120 for non-members, \$30 for AWRA student members, and \$50 for non-member students.



Photo: Nikki Tulley (WRRRC 2020 Photo Contest Winner)

- [Register for the Symposium](#)
- [View the Symposium Program](#)
- [Water Resources IMPACT "Wicked Water Problems"](#)



Healthy Forests: Key to a Healthy Watershed

Healthy forests are a key component of watershed management and they are of paramount importance for Coconino County, where cities and towns are nestled into the forest. APW has a long-standing focus on teaching about watersheds and their management. With a new grant through the Department of Forestry and Fire Management's Community Challenge Grant Program, APW is excited to focus on the forest ecosystems part of the watershed. We will develop programs that engage people in relating forest health to their water supply, urban flooding, water quality, and fire regimes.



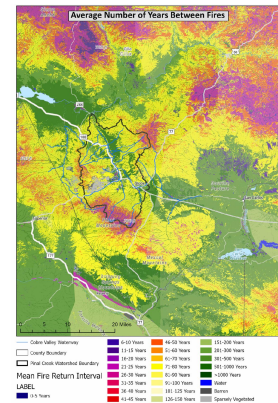
Through key partnerships and collaborations with institutions such as The Museum of Northern Arizona, we will integrate Indigenous perspectives on forest management and native ecosystems while inspiring to be stewards of our land. We will develop and offer educational events that teach about forest management, fire ecology, and the importance of native plants in our local watershed by collaborating with our Coconino County Cooperative Extension colleagues and The Arboretum of Flagstaff.

Students involved in these programs will become naturalists who explore the world through a scientific lens. Adults will become advocates for forest and watershed health.

APW

WRRC Graduate Student Presents Poster

Each year, students come together to share research with their academic peers at the Graduate and Professional Student Council (GPSC) Student Showcase. The tough circumstances of the past academic year did not stop many students from sharing their poster presentations with each other—though this year the event was held virtually via VoiceThread instead of in a ballroom. WRRC Graduate Assistant & Peace Corps Coverdell Fellow Paul La Farga participated in the 2021 GPSC Student Showcase and the Coverdell Outreach & Research Poster Showcase, and shared research that he has done through collaboration with the WRRC. La Farga's presentation, which investigates a variety of risks and impacts of fire on ecosystem services, will be integrated into a chapter of an upcoming ecosystem services report that the WRRC will complete later this Fall. To view the presentation and leave feedback click the link below.



Fire Risk Assessment Poster

Tucson Water Service Resilience

Water infrastructure has been in the news since a deep freeze in mid-February caused power failures to shut down water services across Texas. The WRRC asked Fernando Molina, the public information officer for Tucson Water, to comment on Tucson Water's infrastructure resilience in response to the crisis in Texas. According to Molina, Tucson Water took action after an especially cold winter in 2011. The freezing weather had impacted many of Tucson Water's facilities and elements of infrastructure, such as pipes, valves, and water meters. As a result, Tucson Water "began a process that included hardening those distribution system elements to include identifying sites at highest risk for freeze damage, and insulating, covering, in general protecting those susceptible elements from freezing temperatures." Moreover, Tucson Water also developed new protocols, such as regular inspections and a standard response to cold weather prediction. Continuing drought conditions are another challenge facing Tucson's water resilience. On April 14, John Kmiec, Interim Director of Tucson Water, will join the WRRC for a Brown Bag webinar to provide an update on Tucson Water's water reuse programs.



Upcoming Brown Bag Webinars

WATER JOBS

- Center for Biological Diversity [Environmental Scientist and Communicator](#)
- UWM Center for Water Policy [Water Policy Specialist](#)

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

ANNOUNCEMENTS

- **Mar 5-Apr 29:** [Programming for Geospatial Hydrological Applications](#)
- **Mar 7-13:** [National Groundwater Awareness Week](#)
- **Mar 7-Apr 25:** [Re-envisioning the Middle East Ecosystem: Desert Ecology and Environmental Diplomacy](#)
- **Mar 9:** [RNRF Virtual Round Table: Renegotiating Colorado River Allocations – Hot 20-Year Drought and Soaring Populations](#)
- **Mar 10:** [NSF CAREER Grant Preparation Program Kick-off](#)
- **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 19:** [National Science Foundation Research Traineeship \(NRT\) Program Information Session](#)
- **Mar 22:** [World Water Day Webinar: Managed Aquifer Recharge – A Showcase for Resilience and Sustainability - Registration Open](#)
- **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:** [2021 AHS Symposium – Abstract Deadline](#)
- **Apr 6-8:** [AZ Water 2021 Annual Conference](#)
- **Apr 6-8:** [Virtual 2021 Southwest Adaptation Forum \(SWAF\)](#)
- **Apr 7-9:** [Biochar Opportunities in the Southwest: Extension Workshop](#)
- **Apr 12-15:** [International Tropical Islands Water Conference](#)
- **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](#)
- **May 26:** [Problematic Groundwater Contaminants: More than PFAS Forum](#)
- **Jun 8-10:** [UCOWR/NIWR Annual Water Resources Conference](#)

- **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 2022:** [IWA World Water Congress & Exhibition - Water for Smart Liveable Cities \(Copenhagen\)](#)

PUBLICATIONS

[Tapia-Villaseñor EM, Megdal SB. *The U.S.-Mexico Transboundary Aquifer Assessment Program as a Model for Transborder Groundwater Collaboration*. *Water*. 2021; 13\(4\):530.](#)

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