SUMMER 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 Summer Wave.

WRRC Office Update

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IN THIS ISSUE: IALC, Karletta Chief, Joint Recovery Plan, APW, Water Series, USCRB

A Wrap on the IALC

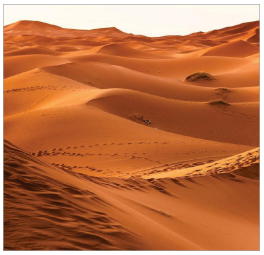
On May 24-26, the International Arid Lands Consortium (IALC) held a virtual conference commemorating 30 years of international collaboration on arid lands issues. The three-day program featured insightful keynote presentations and in-depth panel discussions on each of the day's topics: Water and Agriculture, Land and Natural Environment, and Forests

and Fire. In addition, a series of excellent student lightning talks were a conference feature. To close the conference and mark the sunsetting of the IALC as an organization, Board President Sharon B. Megdal read the IALC Conference Declaration on Addressing the Environmental Challenges of Arid Lands. The Declaration highlighted important points from the three-day program: “climate change has exacerbated the environmental challenges of arid and semi-arid lands and their people” and “regional and multi-disciplinary collaborative efforts are necessary and urgently needed to address these severe environmental challenges.” With the end of the conference and as the IALC wraps up its activities, the Declaration is a call to action. In the words of Honorary Conference Chair Joe Hess, “we, therefore, pass the baton to other consortiums, government agencies and universities to carry on this important endeavor that affects the well-being of all mankind and brings peace between nations.”

View the Recorded Presentations
View the Lightning Talk Finalist Videos

EVENTS

UN World Day to Combat Desertification and Drought –Tipping Points: Desertification, Drought, and Climate Justice



Date: Thursday, Jun 17, 2021
Time: 9-10:30 AM (Arizona Time) | 6-7:30 PM (Paris Time)
Location: **Webinar Only**

Speakers:
Regis Ferrière, *ENS-PSL, University of Arizona, Director of the iGlobes Research Center*
Sharon B. Megdal, *University of Arizona, WRRC Director*
Nikki Tulley, *PhD candidate at the University of Arizona and Indigenous Food, Energy and Water Security and Sovereignty trainee - Indige-FEWSS*

Climate change is amplifying desertification and drought in many regions of the world such as the Sahel or the American Southwest. This intensification of desertification might also lead to “tipping points”: sudden, irreversible, and detrimental changes in local ecosystems across the globe.

How is climate change accelerating desertification and possibly creating drought-related tipping points? What is the role of water management policies in mitigating these risks? What is the interplay between access to water, indigenous rights, and the concept of climate justice in the American Southwest?

More Info
Flyer

Brown Bag Webinar - International Watersheds Coping with Climate Hazards; Twin-City Solutions at Ambos Nogales and San Diego–Tijuana

Date: Thursday, Jun 17, 2021

Time: 12:00 pm-1:15 pm MST
Location: Webinar Only

Speaker:
Laura M. Norman, Ph.D., *Supervisory Research Physical Scientist, U.S. Geological Survey, Western Geographic Science Center*

Current climate scenario predictions identify the US-Mexico border as a "hot spot" of climate change, both in relation to increased rainfall intensity and increased temperatures. Twin city areas in the transboundary setting have long histories of management that rely on mutual dependency. Appropriate land use, watershed management, and flood-attenuation plans are critical, yet challenging, especially in cross-border urban areas. Collaboration is imperative for binational sustainable development. This talk summarizes methodologies for predicting watershed response associated with land use and climate change, within a spatial and temporal context. Hydrological modeling will be presented to assess flood vulnerability, simulate the impact of land-use change, and evaluate the impact of potential flood-control interventions. Cross-border geospatial data acquisition and input to models will be described. Results from this research are being used to promote mutualist solutions in Ambos Nogales and San Diego-Tijuana.

Register Here
More Info

Upcoming WRRC Events

Aug 30-Sep 1: WRRC 2021 Annual Conference: Tribal Water Resilience in a Changing Environment

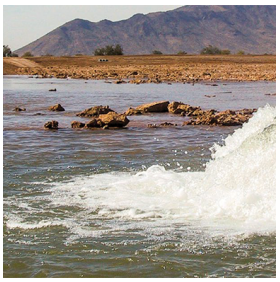
We are excited to announce the dates for the WRRC 2021 Annual Conference, *Tribal Water Resilience in a Changing Environment*. Based on the input of an amazing group of expert advisors, we have decided to convene the conference virtually over three days, August 30, August 31, and September 1, 2021. In addition to three-hour sessions each day, we plan to offer some special pre-conference programming. Please save the dates, check back for updates on the program, and contact us for sponsorship opportunities!

NEWS

Dr. Karletta Chief Named University Distinguished Outreach Faculty

Please join all of us at the WRRC in congratulating our valued colleague, Dr. Karletta Chief, who has been named in 2021 as a Distinguished Outreach Faculty for the University of Arizona. This honor recognizes faculty who demonstrate “outstanding commitment to outreach for the common good of the state and the nation,” and it is the highest honor awarded for outreach-related scholarship at the UArizona. In addition to a strong nomination from WRRC Director Sharon Megdal, Dr. Chief was nominated by colleagues from other Centers across the University, including the Department of Environmental Science, the Arizona Institutes for Resilience, and the Agnese Helms Haury Program for Environment and Social Justice, who cited Dr. Chief’s “brilliant approach to innovation by developing and executing community-driven Indigenous-centered water outreach programs.” More information on Dr. Chief’s work and this award can be found **here** and **here**.

2021 Update to the Joint Recovery Plan



For 20 years, the Southwestern US has experienced drought conditions and stressed water supplies along the Colorado River. Since 1996, the Arizona Water Banking Authority (AWBA) and other entities, including tribes, cities, and private organizations, have stored approximately 12 million acre-feet of water underground to help mitigate future regional water shortages. As drought conditions in Central and Southern Arizona persist, the “**Recovery of Water Stored by the Arizona Water Banking Authority: A Joint Plan by AWBA, ADWR and CAP**” illustrates the details and timing of the recovery of water stored by the AWBA. This update builds on previous planning efforts that are outlined in the original **2014 plan**, including discussions surrounding recovery concepts that are, according to ADWR, “intended to increase flexibility and fully use existing infrastructure.” This plan includes increased collaboration efforts between CAP and ADWR, along with the Recovery Planning Advisory Group. The 2021 Update provides an updated operational timeline to consolidate and refine the procedures for underground water recovery. Additionally, the 2021 Update estimates the future recovery necessary to prevent water shortages across Arizona.

2021 Plan
ADWR Notice

ARIZONA PROJECT WET

An Adventure with the Tucson Water Journey for Fourth Graders

How does the availability of water impact life? Fourth grade students in Arizona study this question with the goal of developing an evidence-based argument to demonstrate their understanding. In Tucson, Arizona Project WET supports students’ learning with a field trip to the Sweetwater Wetlands and an in-classroom groundwater presentation that provides students with hands-on experience using models to make sense of their water supply. This

summer, teachers from Tucson Unified School District will participate in professional development to make the most of these opportunities through the use of the Tucson Water Journey curriculum unit. Check out some of the topics students and teachers will learn about in the short video linked below!

Watch the Video

Adaptation in the Water Sector

On May 19, 2021, the Arizona Institutes for Resilience, in partnership with the WRRC and the Udall Center for Studies in Public Policy, presented the third episode of the ***Water Solutions for Our Warmer World*** series, "The Realities of Adaptation in the Water Sector." This episode featured a diverse array of panelists who offered their perspectives on how adaptations are unfolding in the water sector. As climate change impacts are accelerating, keynote speaker Lester Snow of the California Natural Resources Agency discussed how the management of natural resources, specifically water, is divided and slow. According to Snow, adaptation solutions must be given the same creativity and attention as mitigation solutions, especially in dry and arid environments like the Southwest US. The panelists, Governor Steven Roe Lewis, Dr. Jeff Arnold, Colby Pellegrino, and Emily Wasley, responded to the keynote and audience questions with their thoughts on adaptation and solutions for water resources. "Tribal Nations until recent times have not been part of the solution or the discussion," Governor Lewis said. "It's important to have all partners at the table. Tribal Nations have a depth of knowledge about the natural world and that can be employed very effectively to ensure a very holistic approach to climate change and adaptation is realized."

Summary adapted with permission from AIR staff.

Series Information and Recordings

New Publication on the Transboundary Upper Santa Cruz River Basin

The Upper Santa Cruz River Basin (USCRB) stretches across the US-Mexico border in Southern Arizona. A new publication in an upcoming Special Issue of the journal *Water* looks at the impact of climate change on the precipitation-dependent water resources of this transboundary basin. According to the article, the USCRB has experienced significant declines in average precipitation, and since 1980, year-round average temperatures have increased. Within this context, the article's authors, Eylon Shamir, Elia M. Tapia-Villaseñor, Mary-Belle Cruz-Ayala, and Sharon B. Megdal, surveyed relevant studies examining climate projections for the four weather systems that impact the USCBR's water resources, which are the summer North American Monsoon, the winter cold fronts and atmospheric rivers, and the occasional tropical cyclones. The article finds that there are significant uncertainties and, at times, contradictory trends across the precipitation projections of the weather systems studied. Despite these uncertainties, the authors suggest that the current drying trend and projected decline in precipitation "serve as a pressing call for planning and actions to attain sustainable water resources management that reliably satisfies future demands."

USCRB Article
Special Issue of Water

WATER JOBS

- Montgomery & Associates **Hydrogeologist**
- City of Yuma Water **Treatment Plant Manager**
- USGS **Chapman Conference Research Assistant**
- ADWR **Colorado River Water Resources Specialist IV**
- Tonto National Forest **Hydrology Intern**

Please visit **WRRC's website** for a complete listing of water jobs & opportunities.

ANNOUNCEMENTS

- **Jun 5:** AHS Flagstaff Chapter Field Trip to Ft. Tuthill
- **Jun 7:** 2021 AWRA Annual Conference – Call for Abstracts Deadline
- **Jun 8:** AHS Tucson Monthly Chapter Meeting: *Culture, Groundwater Isotopes, and Climate Change along the Silk Road, China*
- **Jun 8:** Rio Reimagined - RIO Partnership Meeting
- **Jun 8-10:** UCOWR/NIWR Annual Water Resources Conference
- **Jun 9:** AHS Phoenix Monthly Chapter Meeting: *Combining Machine Learning and Process Understanding: Two Hydraulic Case Studies*
- **Jun 14:** 11th International Symposium on Managed Aquifer Recharge – Abstract Deadline
- **Jun 14-17:** ACE21 - Registration Open
- **Jun 14-Jul 15:** Seventh Sovereign - Tribal Engagement Live Online Trainings
- **Jun 15:** WateReuse Arizona 2021 Scholarship – Deadline
- **Jun 15:** CAP University - *Introduction to Central Arizona Project*
- **Jun 17**: UN World Day to Combat Desertification and Drought – *Tipping Points: Desertification, Drought, and Climate Justice*
- **Jun 22-23:** WEF SWI Stormwater Summit 2021
- **Jun 22-23:** *Fate of PFAS: From Groundwater to Tap Water*
- **Jul 1:** 2021 Central Arizona Project Award for Water Research – Deadline **EXTENDED**
- **Jul 1:** Women in Water Scholarship - Application Deadline
- **Jul 19-21:** AWRA 2021 Virtual Summer Conference *Connecting Land & Water for Healthy Communities* - Registration Open
- **Aug 9-11:** AACD Summer Conference 2021: *Working Together to Conserve AZ*
- **Aug 26-27:** 29th Annual Arizona Water Law Conference
- **Aug 30-Sep 1:** WRRC 2021 Annual Conference, *Tribal Water Resilience in a Changing Environment*
- **Sep 13-15:** GRA 4th Annual Western Groundwater Congress
- **Sep 15-16:** Texas Desal 2021 Virtual Conference
- **Sep 15-17:** 2021 AHS Symposium
- **Oct 20-21:** The Third International Congress on Desert Economy: *Energy Economics between Deserts and Oceans* (Dakhla, Morocco)
- **Oct 21:** *Imagine a Day Without Water*
- **Nov 1-5:** AIWW 2021: *Connect & Act to Make Water Work* – Save the Date
- **Jun 14-16, 2022:** UCOWR 2022 Annual Water Resources Conference – Save the Date
- **Sep 11-15, 2022:** IWA World Water Congress & Exhibition - *Water for Smart Liveable Cities* (Copenhagen)

PUBLICATIONS & MEDIA

Ferris, K. and S. Porter, ASU Kyl Center for Water Policy. *The Myth of Safe-Yield: Pursuing the Goal of Safe-Yield Isn't Saving Our Groundwater.*

OTHER NOTICES

UArizona Hybrid Course ENGR 495A/595A – *Science, Health & Engineering Policy & Diplomacy*

Visit our Website