

# Arizona Water Innovation Initiative: Now

October 2024



The new water year is upon us and we recently celebrated with [ASU Flow 2024](#), an event that brings together students and researchers with practitioners from the private sector, government and nonprofit organizations. The event, held at Salt River Project's PERA Club, featured poster sessions, lightning talks, exhibitors, an employment fair and an awards ceremony. ASU Flow is a partnership among Arizona Hydrological Society and ASU's Center for Hydrologic Innovations with support from the Arizona Water Innovation Initiative.

Meanwhile, I recently attended [Climate Week NYC](#) where speakers emphasized the importance of collaboration across sectors to achieve climate goals, with a strong focus on youth engagement and the role of communities in driving change. A highlight of Climate Week for me was participating in the conference [Rethinking Water: Solutions Now for America's Water Infrastructure](#), organized by Sciens Water and Columbia University. I joined a 'controversial statements' style panel on water innovation where everyone had to agree or disagree with hot topics in water like PFAS regulation, recycling and reuse, use of AI, decentralization, zero liquid discharge and more!

Gatherings like ASU Flow and Rethinking Water not only provide opportunities for networking and learning but also provide inspiration for new approaches and innovations to secure Arizona's water future.



Dave White

Principal Investigator, Arizona Water Innovation Initiative  
Julie Ann Wrigley Global Futures Laboratory™

## **New Northeastern Arizona Indian Water Rights Settlement Agreement explainer and webinar**



For over 60 years, the Navajo Nation and Hopi Tribe have been engaged in legal battles to secure their water rights. In May, these Tribes and other parties announced a landmark settlement. If affirmed by Congress, the agreement will end the Tribes' long struggle for water security.

[Read](#) our new explainer on the Northeastern Arizona Indian Water Rights Settlement Agreement. You can also [watch a virtual discussion](#) by experts representing the Navajo Nation,

Hopi Tribe, Arizona Governor's Office and the City of Flagstaff to hear how the parties reached settlement and what it means.

**Read more**

## Arizona Water for All



### Network launch invites collaboration with researchers at the University of Arizona

[Arizona Water for All](#) (AW4A) led its first-ever network launch at University of Arizona (U of A) on September 20th, 2024. Director Amber Wutich, Alexandra Brewis and Daniela Sherrill attended the event in Tucson, which was convened by U of A network lead Megan Carney. With over 25 U of A researchers attending the launch event, the AW4A team was able to introduce their project and initiate connections for interdisciplinary collaborations.

### Water Leadership Institute convenes participants and community leaders

Arizona Water for All launched the Water Leadership Institute on September 28th, 2024 in collaboration with key community partners: the Rural Community Assistance Corporation and the Environmental Defense Fund. The inaugural session was hosted by Cesar Lopez, director of SEEDS Farm, in Nogales, AZ.

The Water Leadership Institute connects participants with local leaders like Lopez

AW4A's goals of increasing engagement in water decision-making, deploying water-security solutions, such as fit-to-purpose technologies, and increasing measurement and monitoring of water-insecurity require researchers to work closely with communities to understand their needs and how best to work alongside them. As the network expands at U of A, AW4A looks forward to implementing collaborative goals.

The next network event will be held at Northern Arizona University on November 15th, creating further opportunity for statewide collaboration.

who are pioneering leadership and sustainability initiatives in their community. This creates the opportunity for participants to become engaged in local water work and stay connected long after the culmination of the Institute.

The next session of the workshop series is scheduled for October 19th, and will take participants on a tour along the Santa Cruz River. Stops include the San Xavier District and, in partnership with the Arizona Department of Environmental Quality, Tumacacori National Park, allowing participants to collect water data and experience citizen science in action.

## Scaling Water Resilience and Stewardship



On September 18, ASU and SRP held a co-organized event: [Scaling Water Resilience and Stewardship](#). The event was by invitation and led by Enrique Vivoni and Kelly Barr at ASU and Elvy Barton at SRP through the Arizona Water Innovation Initiative and Center for Hydrologic Innovations.

The gathering brought together academics from Arizona's state universities, government agencies including the US Department of Agriculture, Arizona Forestry and Fire Management, Arizona Game and Fish, nonprofits including the Bonneville Environmental Foundation, Blue Forest, and the National Forest Foundation and companies including Apple, Intel, Planet, Swire Coca-Cola and PepsiCo, among others.

Participants shared information on water stewardship efforts and techniques for scaling, expanding and applying water stewardship plans, particularly in relation to [forest management and wildfire hazard reduction](#) and [its impacts](#) on [water supply](#). The event was very well-received, with participants expressing excitement and interest in continuing to work together.

Key outcomes included bringing together diverse stakeholders to coalesce around shared water stewardship goals, attracting attention and potential investments for expanding water stewardship efforts in Arizona's forests and providing valuable training and networking and workforce development opportunities for university students and researchers.

The meeting also resulted in plans for a science working group to further study the connections between forest management and water supply, as well as the potential for entrepreneurial activities to aid agencies and corporations in quantifying the water benefits of forest management.

“This is a long-term collaboration between ASU and the Salt River Project that is yielding applied innovations that are being translated into real-world use cases,” says Vivoni. “The various contributions from the event showed that water positive outcomes are possible from forest treatments. We are also helping to train the next-generation workforce in the emerging area of water valuation of land restoration projects.”

## ASU students visit Verde Valley



Students in Professor **Kathryn Lambrecht's** Fundamentals of Technical Communication course visited the Town of Clarkdale in September to meet with the Town Manager and learn about the town's community context and history. The students are collaborating with the Town on a project to create water education signage for its Selna Mongini Park.

In addition, for **Daniel Schugurensky's** Public Affairs Capstone course on the project "Exploring Challenges and Opportunities for Water Conservation and Stormwater Management in the Verde Valley Watershed," two capstone students visited the Town of Camp Verde. The group started the day off at Hauser Farms, met with the Library Manager to discuss education and community engagement, talked with a local rancher and ended the day with a visit to the stormwater office and a tour of the wastewater treatment plant.

These projects are a collaboration with [Project Cities](#) and [Impact Water - Arizona](#).

## Upcoming event



## Water Innovation Technology Showcase

This event is for anyone involved in or passionate about water management and conservation. It will highlight innovative water technologies aimed at fostering collaboration and attracting investment. The Showcase will be held **November 18 from 12-5pm** at Skysong III.

Anyone can participate including corporate stakeholders, venture capitalists, private investors, start-up founders, engineering consultants, researchers and enthusiasts. Both in-person and live [online registration options](#) are available.

## Congratulations to Dr. Enrique Vivoni



The American Meteorological Society (AMS) has **elected Dr. Enrique Vivoni to become a 2025 Fellow.**

The Fellowship recognizes individuals who have made outstanding contributions to the atmospheric or related oceanic or hydrologic sciences or their applications during a substantial period of years. Less than two-tenths of one percent of AMS Members are Fellows.

**Learn more**

## What About Water? podcast with Jay Famiglietti



**Jay Famiglietti**, director of science for the Arizona Water Innovation Initiative, hosted his final [What About Water? podcast](#) episode this summer. The podcast has run for over 5 seasons and 65 episodes.

The podcast aims to connect water science with the stories that bring solutions, adaptation, and actions for the world's water realities.

[Listen here](#)

## New on our blog

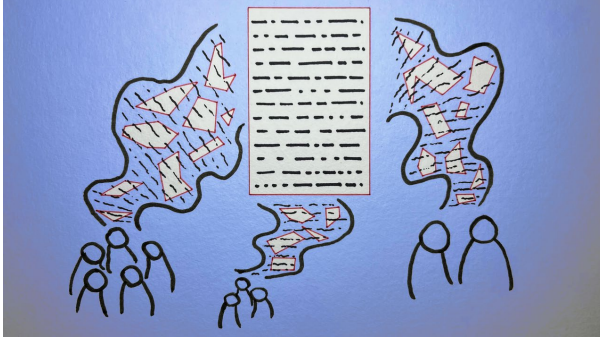


### Progress on an Arizona statewide groundwater assessment

**Jay Famiglietti**, a globally recognized groundwater expert and director of science for the Arizona Water Innovation Initiative, is working to address the gaps in our knowledge about Arizona's groundwater. He and his team are making good progress on a statewide groundwater assessment that will help residents and decision-makers to better visualize the groundwater picture across the state.

[Read more](#)





### Questions about water in Arizona? An innovative new chatbot is here to help

Developed by ASU researchers and supported by the AWII [Impact Water - Arizona](#) program, the [Arizona Water Chatbot](#) is a tool that provides curated information in response to user-generated questions about Arizona water. The bot preserves the complexity of water information while providing a conversational interface.

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### Graduate student researchers addressing decentralized water systems with National Science Foundation support

In much of the US, residents rely on centralized systems - those where both water and wastewater services are provided to customers by a large, centralized network. Three graduate students with the Arizona Water



### Hot nights during dry times: Measuring “hot droughts”

A [hot drought](#) is when extreme heat and drought occur together, amplifying the effects of each other. Imagine the usual summer heat, but with less moisture in the soil and air. This what occurred over the summer of 2023 in Phoenix, across the southwestern U.S. and into Mexico, with record-breaking high temperatures on both land and at sea.

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### Water Literacy in the Desert: Aligning education with Arizona’s water future

Every drop of water holds immense value in Arizona, and the need for increasing water literacy continues to grow. The team behind **Water Literacy in the Desert** recognizes this urgency at its root: in K-12 education. The team

Innovation Initiative have received prestigious fellowships to work on decentralized systems.

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### Hot droughts and summer floods are all in a day's work for the Arizona State Climatologist

Helping her parents set sandbags out around her childhood home to protect it from a flood is one of **Erinanne Saffell's** core memories from growing up in Phoenix. That event sparked an interest in weather and climate that continues to this day in her role as the Arizona State Climatologist.

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aims to equip K-12 students with the tools necessary to understand and tackle water-related challenges.

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### Coalition building in Arizona's water insecure communities

Community organizer **Daniela Sherrill** has worked on two successful efforts to raise the minimum wage for workers in both Coconino and Pima counties. She is now bringing the skills she honed during those campaigns to [Arizona Water for All](#) a program that aims to increase water security for the state's most water insecure households.

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### Crop change detection after drought shortage declarations in Arizona

The Colorado River is experiencing prolonged drought conditions that have led to significant water shortages. Recent drought declarations in 2022 and 2023 have had varying effects on farmers in Pinal and Yuma counties.

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## Tools and resources



### Forest Hydrology Model Builder

In collaboration with Aquaveo and Salt River Project, the [Center for Hydrologic Innovations](#) is building a visualization and workflow management tool for the tRIBS distributed hydrologic model and its applications for forest hydrology. When applied to watershed in Arizona, the cloud-based system provides rapid model deployment and scaling of efforts to quantify water resilience and stewardship under proposed and on-going forest treatments.

**Explore this tool**



### Snow Cover Visualization

In collaboration with Planet and Salt River Project, the [Center for Hydrologic Innovations](#) is building a web-based visualization and snow classification tool for the watersheds of Arizona. A machine-learning algorithm allows for snow detection under trees. The near-daily, high-resolution snow products provide a rapid assessment of the snow line across mountain fronts and aid decisions regarding reservoir releases during the winter and spring seasons.

**Launch this tool**

## In the news



### Why chip manufacturers choose Arizona's desert environment

ASU Regents Professor Paul Westerhoff, the Fulton Chair of Environmental Engineering in the [School of Sustainable Engineering and the Built Environment](#) and member of the Arizona Water Innovation Initiative, explains how the semiconductor industry has established a strong presence in the Phoenix area. He notes that regions facing the greatest water challenges are also leading the way with innovative water conservation solutions.

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### Climate change raises challenge to secure vital resource



### How Gila River Indian Community is planning to save 73K acre-feet of water over the next decade

For over a millenia, Pima and Pee-Posh peoples, who make up members of the Gila River Indian Community, have grown crops throughout the Valley. They trace their roots to the Hohokam, whose ancient canals paved the way for modern-day Phoenix. The tribe got \$63.8 million to fund the Gila River Farms Efficiency Project through the Inflation Reduction Act. They'll be replacing 140,000 feet of original, concrete pipeline.

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### Navigating uncharted waters: ASU drives solutions for water resilience

ASU researchers, including those from the [Center for Hydrologic Innovations](#) directed by **Enrique Vivoni**, are aiding efforts to keep Colorado River Basin water flowing. According to the researchers, expected smaller snowpack levels will reduce the basin's streamflows to problematic low levels.

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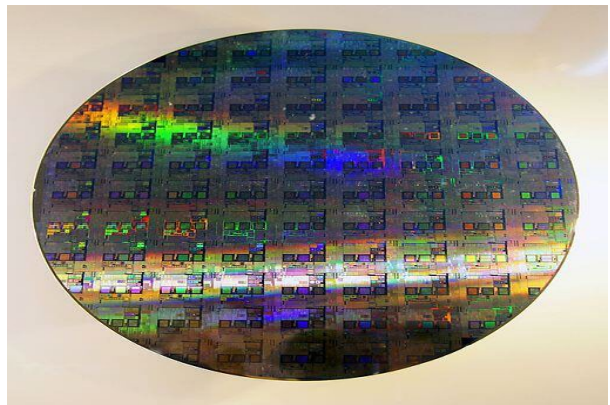
### In the Willcox and Douglas groundwater basins, residents bet on unity to solve issues

In September 2023, the consortium, the [Babbitt Center for Land and Water Policy](#) and the Arizona Water Innovation Initiative, brought about 40 people from the Willcox and Douglas basins for an intensive two-day workshop of "exploratory scenario planning," a tool that assumes many possible futures and that plans for uncertainty.

**Read more**

The Arizona Water Innovation Initiative has already seen great success in patenting technologies, empowering communities and better understanding our state's water challenges. Additionally, the newly launched [Water Institute](#) draws from existing academic capacity across ASU.

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### A silicon revival in the West

The three TSMC factories are projected to [create 6,000 permanent jobs](#) and anchor a new economic corridor in northern Phoenix, generating significant property and sales tax as well as rate revenue for utilities. **Sarah Porter** said the economic boost will make it easier for the city to develop the water purification plant, which she called "a major project that will enable the city to, in the end, have much more flexibility with respect to the Colorado River."

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**ASU** Julie Ann Wrigley  
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-Times Higher Education, 2021