



Newsletter | Volume 4, Issue 1 | March 2017

Announcing our new research projects

In collaboration with the California Institute for Water Resources, California academics provide solutions to address water-related issues. The Institute leverages federal investment to focus its attention on the most critical water issues in the state. This year, we supported new projects on a range of timely topics. Please read more about these projects below, and visit us at ciwr.ucanr.edu for further details.

Doug Parker, Director, California Institute for Water Resources

Suitability of alfalfa for winter groundwater recharge

California's groundwater has been stressed, most recently by drought. One proposed solution for recharging aquifers is agricultural groundwater banking. Using this approach, farmland is flooded during the rainy season to recharge groundwater. Optimizing agricultural groundwater banking for specific crops can be challenging. The main goal of this project is to better understand how alfalfa, which is grown year round, responds to winter flooding. *Investigator: Helen Dahlke, UC Davis.* [READ MORE](#)



Steve Orloff

Fish habitat response to streamflow augmentation

Declining water levels can degrade or eliminate fish habitat during California's summer season. Storing water off-channel during the rainy season can help reduce instream flows demands in the dry season. This study is designed to gain a better understanding of the relationship between streamflow and habitat. The research results will directly inform ongoing work and aid in the prioritization, design, and evaluation of other projects. *Investigator: Ted Grantham, UC Berkeley.* [READ MORE](#)

Remote sensing of turfgrass response to irrigation

The western U.S. is generally arid and subject to droughts. It is also home to many large cities, which makes urban irrigation management a key component of water conservation plans. Turfgrass is common in urban landscapes and provides valuable recreation areas and

ecosystem services. This project will help determine the best irrigation strategies for common turfgrass species. *Investigator: Amir Haghverdi, UC Riverside.* [READ MORE](#)

Habitat restoration impacts on water management

California's water management is influenced by many factors, including water availability for fish like endangered salmon. Understanding salmon is a multi-faceted challenge. For example, the Delta is a highly impacted system where habitat alteration and non-native predacious fishes likely effect native juvenile salmon. This project will examine the interplay between altered habitat and predatory fish, and how they impact salmon populations. *Investigator: Eric Palkovacs, UC Santa Cruz.* [READ MORE](#)



Eric Palkovacs

Evaluating water conservation policy in California

During the recent drought, California required urban water districts to conserve 20 percent of their water resources. While some districts were very successful, others failed to meet the target. The goal of this project is to examine how variation in policy—pricing, messaging, penalties—and drought severity affected water conservation. The analysis involves comparing across water districts and looking within districts to examine how policy changes can explain conservation change. *Investigator: Leah Stokes, UC Santa Barbara.* [READ MORE](#)

Groundwater dynamics after California drought

As part of California's new groundwater management act, some basins were designated as high management priorities. Determining sustainable groundwater use is not possible without quantifying extraction and recharge. This project will characterize recharge using age, location, and temperature. This information will be valuable for stakeholders creating a groundwater sustainability plan. *Investigator: Amelia Vankeuren, CSU Sacramento.* [READ MORE](#)



Amelia Vankeuren

Our mission is to integrate California's research, extension, and higher education programs to develop solutions to water resource challenges.

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The Confluence: New on our blog

Here are just some of our most recent articles. You can follow and subscribe at: ucanr.edu/blogs/confluence.

Social equity in California water management

The California drought has shined a spotlight on stories of people and communities living without water. Unfortunately, lack of access to clean and affordable water is not a new issue. Water security has been an enduring challenge across the state in wet and dry years alike, particularly for disadvantaged communities...[READ MORE](#)

California water district pilots innovative approach to groundwater banking

The Yolo County Flood Control and Water Conservation District supplies water to farmers in northern California. The agency is at the forefront of innovative efforts aimed at banking groundwater by diverting flood waters into their unlined canals. This gives flood waters time to infiltrate soils and recharge groundwater...[READ MORE](#)



Rachael Long

Taking the long view on California water and drought



Matthew Kirby

When we talk about water in California, we tend to focus on the past 100-150 years because it is the timeframe that corresponds with modern record keeping. At the same time, it's a relatively short period that doesn't yield much long range climate insight...[READ MORE](#)

Identifying gaps in protecting California's native fish

California is home to a rich array of native freshwater fish, including some species found nowhere else in the world. There is the Paiute sculpin that favors cold waters moving over the shallow gravel of a mountain streambed, the voraciously predatory Sacramento pikeminnow that can be found in deep river pools...[READ MORE](#)

"As California faces its worst drought in decades, water supply and quality for agricultural, urban, and environmental systems has become one of our biggest challenges. UC's California Institute for Water Resources is vital to integrating California's research, extension, and education programs to help mitigate the current problem and develop practical long-term solutions."

Secretary Karen Ross, California Dept. of Food & Agriculture
Secretary John Laird, California Natural Resources Agency

Institute activity highlights

Doug Parker, CIWR Director, participated in the **Systems Thinking Conference** at Cornell University. The symposium brought together systems thinkers from a variety of backgrounds to share their experiences applying this powerful educational tool to diverse fields. The symposium was webcast to over 700 attendees from across the U.S. and 39 countries. Archived presentations will be available soon.

Faith Kearns, CIWR Academic Coordinator, organized and led a small workshop on relationship-centered approaches to science engagement. The workshop was supported by The Whitman Institute and builds upon a recent book chapter and **New Republic article** that she wrote about community engagement on contentious issues.

CIWR, along with the **UC Water Security and Sustainability Research Initiative**, co-sponsored **Recipes for Success in California Water**, a workshop organized by UC Berkeley extension specialist **Ted Grantham**. This event brought people together to discuss examples of successful water management across the state, with a goal of building a more accurate and compelling narrative for California water.

Responding to California drought & floods

In the midst of historic drought and precipitation, California's academic institutions are a tremendous resource. UC researchers offer everything from near-term management advice to farmers and ranchers to innovative work on a vast array of issues from drought resistant crops to snow sensors to climate change.

For example, to help farmers make the best use of the water they have available, a series of new and updated drought fact sheets has been developed by UC scientists and supported by the California Department of Water Resources. They are now **freely available on our website**.

For up-to-the-minute resources and expertise, please visit us at ciwr.ucanr.edu and follow us on Twitter [@ucanrwater](https://twitter.com/ucanrwater).

NIWR partnerships and programs

The National Institutes for Water Resources provide a national platform for research, training, and collaboration needed to manage our water resources. A water resources research institute is located in each state, the District of Columbia, and the U.S. Territories of the U.S. Virgin Islands, Puerto Rico, and Guam, for a total of 54 institutes. CIWR is California's water institute.

NIWR collaborates with the U.S. Geological Survey at state and federal levels. Together, they design effective programs to secure a better water future. Their two grant programs, funded by the Water Resources Research Act, support research, dissemination of research results, and training of scientists in water resources.

Please visit the updated NIWR public website at niwr.info.