



University of California

Agriculture and Natural Resources | California Institute for Water Resources

Developing solutions to California's water-related challenges

About the Institute

The California Institute for Water Resources develops and supports water-related research, education, and outreach. The Institute is the California hub for the national network of water research institutes supported by the federal Water Resources Research Act of 1964.

Goals

- Integrating California's research, extension, and education programs to develop solutions to water resource challenges
- Connecting water resource expertise in California's academic institutions with the needs of water managers and users
- Developing relevant and timely science-based information on water issues to inform decision-making

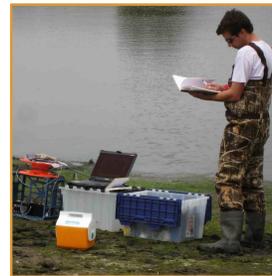
Approach

- Facilitating collaborative work on water issues across California's academic institutions
- Coordinating and leveraging resources
- Amplifying research outcomes



Select Projects

Institute projects are selected to provide integrated solutions to water resources challenges in California and beyond.



Improving groundwater recharge

Improving aquifer storage recovery operations can help to reduce nutrient loads and increase water supplies. This analysis of managed aquifer recharge in central coastal California quantified variability in infiltration, recharge, groundwater movement, and water quality. Preliminary results suggest that managed recharge systems might be operated for simultaneous improvements to both water supply and quality.

Principal Investigator: Andrew Fisher, UC Santa Cruz



Increasing irrigation efficiency

Spatial analysis of irrigation efficiencies is critical to implementing water conservation strategies as climate changes over time. This study utilizes spatial approaches to presenting and managing data on transpiration ratios, surface soil retention and evaporation rates, and local weather conditions. With this easily manipulated data, trends can be identified and used to adjust irrigation methods to fit specific crop needs.

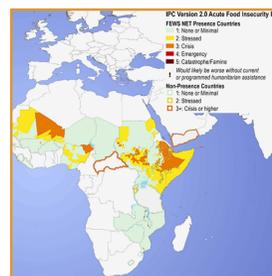
Principal Investigator: Samuel Sandoval-Solis, UC Davis



Nitrogen management training

Recent studies have found widespread nitrate contamination in some of California's groundwater systems. This joint university / agency / industry effort seeks to reduce agricultural pollution and maintain a vibrant statewide agricultural industry by working with multiple agencies to create a curriculum and training to assist certified crop consultants and growers with their management of nitrogen fertilizers and irrigation water.

Principal Investigator: Doug Parker, UC ANR



Aiding relief efforts during famine in developing countries

Monitoring hydroclimate extremes helps decision-makers reduce famine in developing countries. Researchers at UC Santa Barbara, in collaboration with the US Geological Survey and the Famine Early Warning Systems Network, have been investigating and monitoring the physical and social variables affecting food security and growing practices.

Principal Investigator: Greg Husak, UC Santa Barbara

Results

- **Leveraging funds:** between 2003 and 2012, the Institute received \$5.7 million in federal water resource allocations and leveraged an additional \$15.2 million from external funding sources, a more than a 2.5:1 matching ratio.
- **Developing projects:** in 2012, UC cooperative extension advisors and specialists and AES faculty worked on a combined 187 projects on water quality, supply, and allocation.
- **Outreach:** in 2012, projects have resulted in over 60 peer reviewed publications, 35 workshops and short courses, media coverage on several projects, training for students, and adoption of best management practices by farmers, allied industry and natural resource professionals, and members of the public.

Looking Forward

The Institute will be growing its presence over the next several years.

Short-term (1-2 years) objectives:

- Develop an advisory committee to guide strategic program development
- Develop a competitive grants program
- Create a web-based California water information hub

Medium-term (3-5 years) objectives:

- Focus program development in areas of critical information gaps (e.g., nutrients, stormwater) by working collaboratively across the UC system and with water users and managers

Long-term (6-10 years) objectives:

- Be the "go to" water information resource for California

Contact Us

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