SUCCESS FROM THE GROUND UP

in water-related practices and policies

The National Institutes for Water Resources (NIWR) plays a major role in addressing water-related concerns by providing a platform for research, training, and collaboration at the state level. Housed in the nation’s land-grant universities and four U.S. territories, the 54 NIWR member institutes leverage university expertise in research, education, and outreach to find solutions for the water management challenges we face. With our funding and educational services, water-related professionals and researchers receive support for the creation of local tools and policies to better manage our water. These successes start at the local level and have the ability to grow and make an impact across the United States.

In FY 2015, Congress appropriated $6.5 million dollars in WRRA grant funding, enabling cutting-edge research on the nation’s most pressing water issues. This financial source requires matching from non-federal sourced funds from the public and private sector. This local financing significantly leverages the available federal dollars for water research.

NIWR BY THE NUMBERS

in 2015

- $6.5M in funds to research projects
- $11.4M in match funds to research projects
- 214 sponsored research projects
- 564 sponsored researchers
- 285 students in training

Photos, starting clockwise at top:
- 2016 North Carolina Watershed Stewardship Network workshops
- 2016 Iowa State University PhD student holding a sediment core at East Okoboji Lake in Iowa.
- 2016 University of California field team assessing improvements in water quality during groundwater recharge
The largest of the USGS-NIWR research grant programs is the 104(b) Annual Base Funding grant program. Approximately $5 million in 104(b) grants are awarded annually to NIWR member institutes to help each institute plan and conduct applied and peer-reviewed research, education, and outreach activities on water.

National Competitive Grants

The 104(g) National Competitive Grants program funds research in water issues that are of a regional or interstate nature or relate to a specific program priority identified by the Secretary of the Interior and the Institutes. Approximately $1 million is available each year. In 2015, 104(g) funding was awarded to four research projects studying important national priority issues in water quality and quantity. These projects were:

- “Using bioavailability to assess pyrethroid insecticide toxicity in urban sediments” in Illinois
- “Human and Ecological Health Impacts Associated with Water Reuse: Engineered Systems for Removing Priority Emerging Contaminants” in South Carolina
- “Hydrologic Life Cycle Impact of Mountain Pine Bark Beetle Infestations” in South Dakota

TRAINING OUR FUTURE LEADERS IN WATER

The National Institutes for Water Resources supports learning opportunities for students with funded research projects. Both undergraduate and graduate students explore new ideas and learn new skills. This fosters successful entry into a competitive water resources job market and allows them to make life-long positive water resource impacts.
RESILIENCE
Enabling innovative ideas and individuals to grow

These are two of many Annual Base grant projects that are experiencing growth and having an impact on research and practical application.

**Managing water resources in California**

The United States, especially the western region, is heavily dependent upon groundwater. California is a leading state in the demand for groundwater use with many areas of the state not having access to a high quality water resource.

Led by Andrew Fisher at UC Santa Cruz, this project focused on how to improve water supply and water quality during managed aquifer recharge in California using distributed storm water capture. Researchers leveraged NIWR funding to conduct this study which will help provide a state-wide impact in protecting the water supply. Over $4 million in support resulted towards other projects based, in part, on the data from this project.

This study is also part of The Recharge Initiative, a 10-year project centered on addressing the needs of local agencies, municipalities, citizens, and industry for a sustainable water resource in California. Managed aquifer recharge is an approach that enables flexibility for communities to address water supply challenges at the local level. This initiative seeks out solutions that acknowledge the rights to water usage that serve human and economic demand while still encouraging sustainable practices for a resilient future in the state.

**Enabling energy production in New Mexico**

Exploration for oil and gas in New Mexico plays an important role in energy and economic development, but generates hazardous water contaminants.

Led by Pei Xu at New Mexico State University, this project developed an innovative desalination technology to remove organic substances and salts. Water in this system can be potentially recycled in the industrial process making it more cost effective. The technology also uses bacteria to convert biodegradable pollutants into electricity, which offsets operation energy use or supplies additional energy for other systems for operators.

This project led to a collaboration with USGS scientists to publicize produced water characterization in the Permian Basin. The funding and knowledge acquired through this project supplemented and strengthened two ongoing projects funded by the U.S. Department of Energy/Research Partnership to Secure Energy for America and the New Mexico Environment Department valued at over $500,000.
Our history started in 1964

Water Resources Research Act, USGS, and NIWR

The 1964 Water Resources Research Act (WRRA) established the nation’s Water Resources Research Institutes. Pursuant to the WRRA of 1984 as amended, the United States Geological Survey (USGS) within the U.S. Department of the Interior assumed responsibility for administering WRRA funding, which targets local, regional, and national water priorities, helps train and recruit researchers, and aids in the transfer of technology and best practices.

Coordination and interaction between the Institutes and USGS is facilitated by NIWR. A volunteer-led organization, the NIWR network represents the only authorized federal-state program that focuses on applied water resource research, education, training, and outreach.