

Our Mission:
To create new sources of water through research and technology and to protect the freshwater and marine environments.

About NWRI

The NATIONAL WATER RESEARCH INSTITUTE of Fountain Valley, California, is a public-private partnership founded in 1991 by a group of Southern California water agencies in collaboration with the Joan Irvine Smith and Athalie R. Clarke Foundation to support cooperative research to create new sources of water and to protect the freshwater and marine environments. NWRI is governed by a Board of Directors who represent the Inland Empire Utilities Agency, Irvine Ranch Water District, Los Angeles Department of Water and Power, Metropolitan Water District of Southern California, Orange County Sanitation District, Orange County Water District, San Juan Basin Authority, and West Basin Municipal Water District.

The centerpiece of NWRI's institutional design is the concept of an "institute without walls." NWRI operates by facilitating, coordinating, and supporting research projects wherever the best people and facilities are found. NWRI maximizes its financial resources by requiring joint-venture partnerships to minimize the cost burdens of supporting facilities, equipment, and staff.

NWRI's core funding comes from the Joan Irvine Smith & Athalie R. Clarke Foundation, which is matched at more than a one-to-one ratio by funds from joint-venture partners. To date, the Foundation has contributed over \$14 million to NWRI's research program.

In addition, more than 119 joint-venture partners have provided NWRI over \$15 million to help support over 158 projects in 14 states, on 29 university campuses, and in 28 utility and/or industrial laboratories. Over 110 peer-reviewed technical publications have been produced, as well as 160 conference presentations and three U.S. patents. Research projects focus on water quality assessment, knowledge management, exploratory research, and treatment and monitoring.



Highlights from NWRI's Research Program

Ultraviolet Disinfection Technology

In 1993, NWRI's Blue Ribbon Panel on ultraviolet (UV) disinfection systems published a groundbreaking report on UV disinfection guidelines for wastewater reclamation in California. This report was revised in 2000 as the *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* – the first of its kind in the world. A second edition of the UV Guidelines was published in June 2003.



Membrane Technology

Since 1994, NWRI has held three international symposiums on microfiltration technology. The first, **Microfiltration I**, examined whether microfiltration was the right choice to treat water and wastewater. **Microfiltration II**, held in 1998, discussed the evolution and future development of the technology. Four years later, **Microfiltration III**, presented on the newest research and innovation applications of this membrane technology. A fourth symposium is expected in 2006.

Continued on Reverse Side

Highlights from NWRI's Research Program (Continued)

Desalination Technology

NWRI was the principal consultant to the Multilateral Working Group on Water Resources in the Middle East Peace Process and, as a result, designed the institutional framework



that established the Middle East Desalination Research Center in the Sultanate of Oman.

In cooperation with the U.S. Department of the Interior, Bureau of Reclamation, NWRI produced the video *Water from Water: Desalination*, which has aired on numerous cable channels and been distributed nationwide.

Salinity Management

NWRI was selected by the Southern California Salinity Coalition, Inc., to help develop appropriate management strategies to overcome decades of salt accumulation that have degraded water quality in Southern California.

The first project was the "Water Softener Pilot Program," which assessed customer behavior toward different types of incentive programs that will help mitigate salinity issues caused by the use of water softeners in residential households.



Riverbank Filtration

In 1999, NWRI invited American and European experts to the **International Riverbank Filtration Conference** to discuss and promote this low-cost, relatively unknown water treatment technology in the United States. The result of this conference was *Riverbank Filtration: Improving Source-Water Quality*, a 365-page book written by over 30 experts and jointly published by NWRI and

Kluwer Academic Publishers in 2002. The **Second International Riverbank Filtration Conference**, featuring over

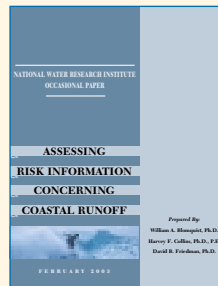


40 speakers from around the world, was held in September 2003.

Knowledge Management

The **Workshop for Elected and Appointed Officials** was designed by NWRI to assist Southern California water officials in gaining a broader understanding of the regulatory, financial, and public-policy implications of critical water resources issues and the technical options available to mitigate these problems.

NWRI published the Occasional Paper *Assessing Risk Information Concerning Coastal Runoff* (2003), which analyzed news from the media and other organizations in California and Florida to determine the accuracy of information on beach closures and its impact on public policy regarding pollution and human health.



The Value of Water

NWRI published *The Value of Water: Recognizing and Using the Full Potential of Your Water Supply* (1999), an educational document that teaches both the general public and water utilities to view water in a new way by recognizing the real value of water — which is not its price or cost, but what it does to enhance the environment, economy, and quality of life of the general population.

California MTBE Research Partnership

NWRI became Program Manager of the California MTBE Research Partnership in 1999, which was a cooperative program among California petroleum and water agencies interested in alleviating groundwater contamination by the fuel oxygenate, MTBE. At present, NWRI has published seven reports for the partnership.



Education

NWRI annually supports three educational fellowships: the NWRI Fellowship for graduate students studying water-related topics; the Henry Rodriguez Scholarship Fund for Native Americans students interested in pursuing careers in water science; and the Middle East Desalination Research Center (MEDRC) Scholarship, which offers graduate students from the Middle East and North Africa the opportunity to study at universities from around the world while participating in MEDRC projects.

The Athalie Richardson Irvine Clarke Prize: A Legacy of Excellence in Water Science

NWRI established the Athalie Richardson Irvine Clarke Prize in 1993 to award outstanding individuals who have implemented better water-science research and technology. The prize, which includes a gold medallion and \$50,000 award, is presented annually.

To date, the Prize is one of only a dozen water prizes awarded worldwide. It has been distinguished by the International Congress of Distinguished Awards as one of the most prestigious awards in the world.



The Clarke Prize was established in honor of the late Athalie Richardson Irvine Clarke, co-founder of NWRI. Mrs. Clarke's daughter, Mrs. Joan Irvine Smith of San Juan Capistrano, California, is patron of the award.

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