WRRC 50th Anniversary 1964-2014

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The University of Arizona | College of Agriculture & Life Sciences | Cooperative Extension

Water Resources Research Center History, 1964-2014

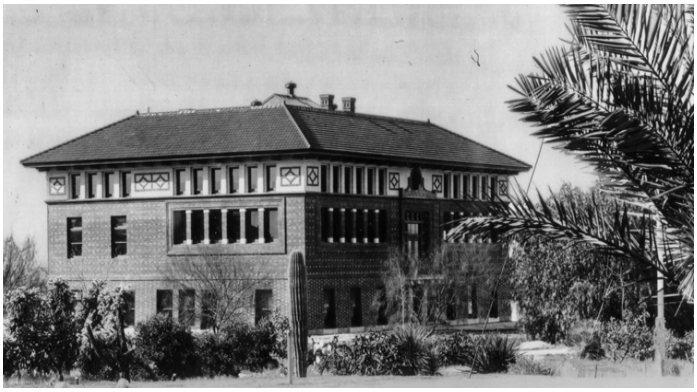
Birth of the Water Resources Research Center

A research and extension unit of the College of Agriculture and Life Sciences, the University of Arizona Water Resources Research Center (WRRC) is the designated state water institute established under the 1964 Federal Water Resources Research Act (WRRA).

The WRRC was first formed in 1957 as the Institute of Water Utilization within the College of Agriculture, now known as the College of Agriculture and Life Sciences. Sol Resnick founded the Institute, which he directed from 1957 to 1964. In 1964, with the enactment of the WRRA, the Institute was designated as one of the 54 water resources research institutes formed under the Act. At that time, it changed its name to the Water Resources Research Center and moved out of the College of Agriculture to become a university administrative unit reporting to the Institute of Atmospheric Physics. Over the years, the WRRC reported administratively to various campus units, and directors have come from a variety of disciplines.

The focus over time has remained relevant to Arizona's major water issues. With a mission encompassing applied research, outreach and education, the WRRC provides expertise on state and regional water management and policy issues critical to Arizona and applicable to water-stressed regions around the world.

The WRRC has established excellent working relationships with other water-related units on campus, and with local, national and international public and private entities through its collaborative work.



During the 1960s &1970s, the WRRC was located in the Douglass Building.

The Federal Water Resources Research Act of 1964

The Water Resources Research Act of 1964 was first drafted in 1962, and was signed into Federal Law by President Lyndon B. Johnson on July 17, 1964. Federal action on water resources research had been under consideration since the Eisenhower administration in 1959, when Senator Mike Mansfield of Montana stated that water was the greatest resource problem facing not only the West, but the entire nation.

The White House press release announcing enactment noted, "We have entered a period in which acute water shortages are hampering our industries, our agriculture, our recreation, and our individual health and happiness...This legislation will help us solve this problem." Originally designated the Anderson Act for its champion, Senator Clinton P. Anderson of New Mexico, the law established the water resources research institute program. Closely modeled on the Hatch Act of 1887, which created agricultural experiment stations, the WRRA of 1964 authorized annual funding to support an institute for water resources research in each state at its land grant college or other designated university.

Institutes were charged with undertaking multidisciplinary research, both basic and applied, to produce new knowledge that would be used to solve local, regional and national water problems. Subsequent revisions to the Act emphasized developing and transferring technology and cooperation on statewide, regional and national levels. Reauthorized as the Water Resources Research Act of 1984, over President Ronald Reagan's veto, and again in 2004, the Act continues its basic support of the water institute network.

The Water Resources Research Act Program is administered by the U.S. Geological Survey under the general guidance of the Secretary of the Interior. Each state and four territories operate water resources research institutes under the program. One requirement of the 1964 Act was to provide a mechanism in the state to distribute federal grant monies.

104 Grants

The Water Resources Research Institute Program authorized by section 104 of the WRRA of 1964, is a Federal-State partnership that provides for competitive grants to be awarded. As the designated Water Resources Research Institute for the State of Arizona, the WRRC provides 104(b) grants for research projects focusing on the state and region. In addition, the WRRC administers Arizona's 104(g) grants for research on water problems and issues national in scope [104(g)]. The institutes were charged with (1) arranging for competent research that addresses water problems or expands understanding of water and water-related phenomena, (2) aiding the entry of new research scientists into the water resources fields, (3) helping to train future water scientists and engineers, and (4) transferring results of sponsored research to water managers and the public.

Mission

The 1964 Act charged the WRRC with promoting and assisting water related research at the three state universities, and enhancing their contribution to the solution of critical water problems within the state. In 1985, the UA, working through the legislative process, was able to provide special state funds that prompted a redefined WRRC mission with a new emphasis on information transfer. The WRRC was to perform as the Arizona Water Information Center working to increase the effectiveness of disseminating information to relevant audiences. In 1991, the Deans' Water Council (the deans of six colleges: Agriculture, Business and Public Administration, Engineering and Mines, Law, Science, and Social and Behavioral Sciences) redefined the mission as coordinating, facilitating and supporting water-related research throughout the University and, in relation to its responsibilities under the WRRA, in all institutions of higher learning within Arizona. The WRRC conducted programs for information transfer in close cooperation with Cooperative Extension and other University units with information transfer responsibilities. This mission was restated in 2000 when the TRIF (Technology and Research Initiative Fund) program was initiated and the Water Sustainability Program was established.

Currently, the mission is to promote understanding of critical state and regional water management and policy issues through research, education and outreach.

Leadership

1964 - 1972
Richard Kassander, Physicist

Richard Kassander was the first director of the WRRC, after it became Arizona's Water Resources Research Institute. At that time the Center reported to the Institute of Atmospheric Physics. Federal funding under the WRRA initiated the research grant programs that continue to the present. Water pollution, development and evaluation of water harvesting systems, efficient disposal of effluents, and artificial recharge were some of the areas studied. Dr. Kassander later became UA Vice President for Research.

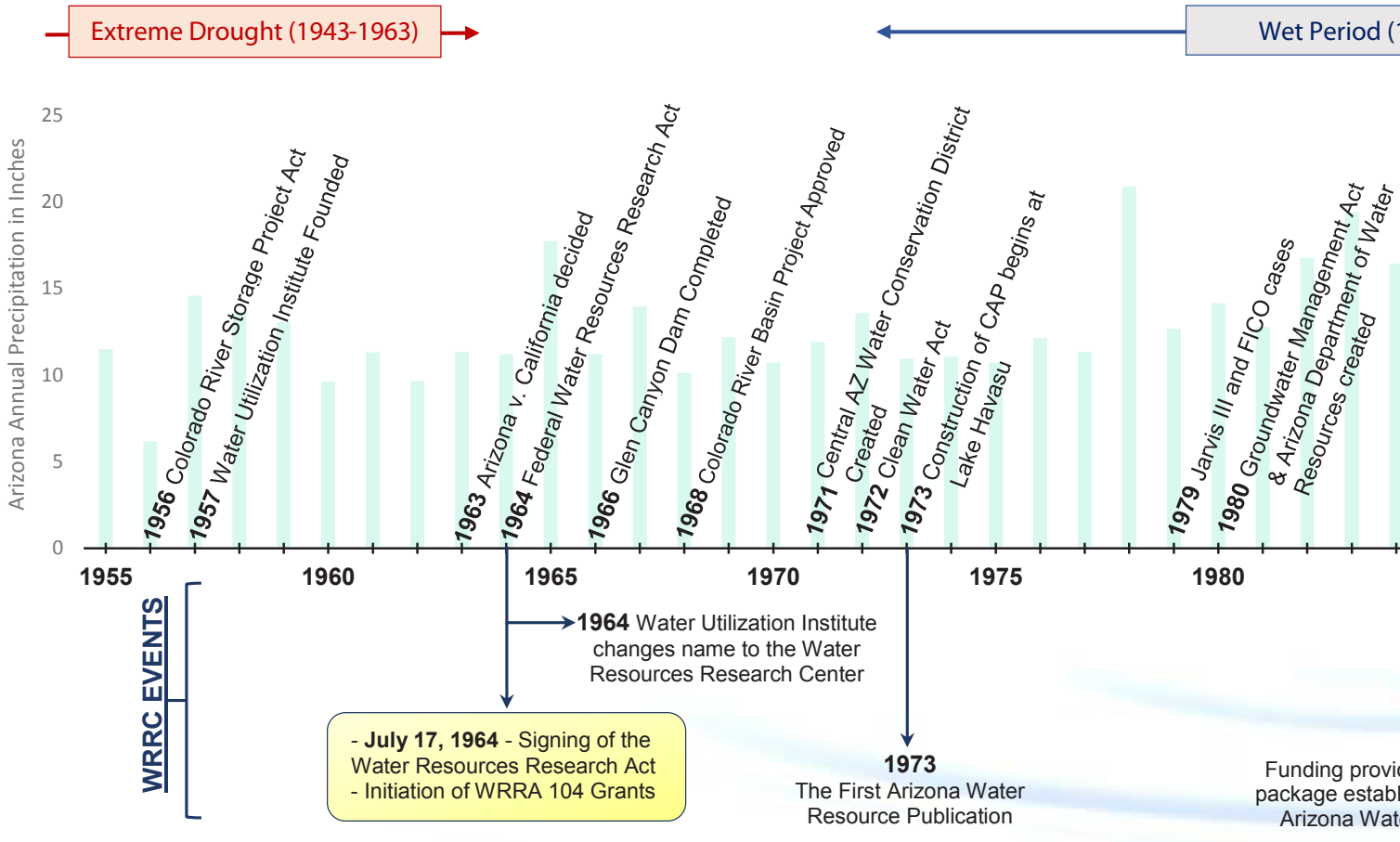
1972 - 1984
Sol Resnick, Civil Engineer/Hydrologist

Sol Resnick founded the Institute of Water Utilization in 1957, the forerunner of the WRRC, which he directed until 1964. Later, as WRRC Director from 1972 to 1984, he oversaw research focused on water resources conservation, augmentation, and management in arid and semi-arid areas, including artificial groundwater recharge and water harvesting systems. Sol Resnick received the Hydrology Lifetime Achievement Award from UA in 1998, and the WRRC conference room was named in his honor in 2003.

1985 - 1990
William Lord, Agricultural Economist

William Lord was a professor of Agricultural and Resource Economics. His research focused on water resources planning and management, municipal water supply, and water shortages. Located in Hydrology and Water Resources at that time, the WRRC focused research on water harvesting, the Colorado River, Indian water rights and groundwater pollution. In 1985, funding provided by a state decision package established the WRRC as the Arizona Water Information Center. The *Arroyo* publication began in 1987.

50 Years of Water Research, Educatio



1991 - 1996
Hanna Cortner, Political Scientist

Hanna Cortner was a professor in the School of Renewable Natural Resources, whose research focused on institutional and policy analysis. The WRRC's focus was water policy, the federal role in water management and the impact of hydrology on water use and availability. Arizona Project WET was adopted, making Arizona the third state in the nation to implement the Project WET program. The Arizona Water Resource, Arizona Water Map, Desert Landscape CD and the WRRC website were first published during this period.

1997 - 2004
Peter Wierenga, Soil Physicist

Peter Wierenga was a professor in Soil, Water and Environmental Science. His research focused on water movement through soil, contaminant transport, and water management. The WRRC's focus was water policy and management. Funding for WRRC through the State Technology and Research Initiative Fund was negotiated during this period. An important WRRC document published in1999 was entitled *Water in the Tucson Area: Seeking Sustainability*.

2004 - Present
Sharon Megdal, Economist

Sharon B. Megdal is the C.W. and Modene Neely Endowed Professor for Excellence in Agriculture and Life Sciences, a professor in Soil, Water, and Environmental Science, and distinguished outreach professor. Her work focuses on water management and policy. The WRRC's research focus has been state and regional water policy, management and planning. It also maintains robust outreach and education programs. This period saw the initiation of the Brown Bag seminar series, the WRRC annual conferences, and publication of the *Layperson's Guide to Arizona Water*.

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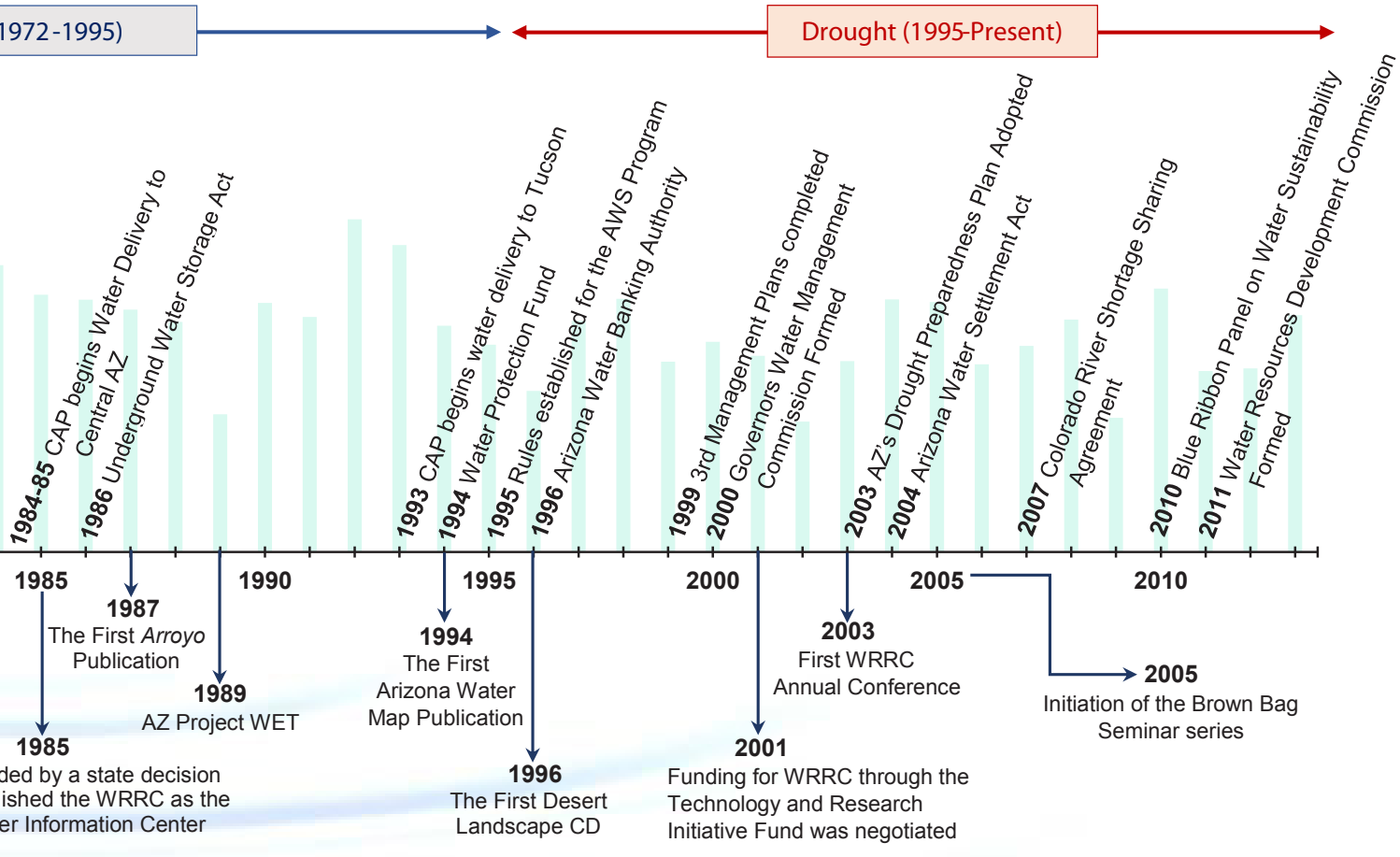

A 50-year Legacy

Water Research

The research focus of the WRRC has changed over time, reflecting changes in Arizona water issues and challenges. The need for safe, secure water supplies has not changed, however, and this primary consideration has continued to shape the WRRC's research programs.

The 1950s and 60s were periods of extreme drought in Arizona, and the WRRC focused on artificial recharge, conservation and progressive agricultural practices.

Following this period, in the late 1960s and early 70s, major laws and programs affecting water resources came into being at the national level, including the Clean Water Act of 1972 and the Colorado River Basin Project. This era also saw the formation of the Central Arizona Water Conservation District and the start of construction for the Central Arizona Project. The WRRC's focus during these years was water pollution, including wastewater management and reuse. Additional research looked into water harvesting systems and artificial recharge.

From the 1970s to the early 90s, Arizona's "wet" period, the state experienced several regional floods, including the 1983 regional flood in Southeastern Arizona. During this period, the WRRC focused its research on hydrology, wastewater reuse, recharge and groundwater quality, water harvesting, water transfers, urban runoff, border groundwater issues, and Indian reserved water rights.

From 1995 to 2014, Arizona has again been experiencing drought and warm temperatures. Early in this period, the WRRC produced the bilingual Field Manual for Water Quality Sampling, and research included securing additional water supplies, use of wastewater in the United States and on the U.S.-Mexico border, overdraft, subsidence and earth fissures, groundwater law and economic impacts of water use in the Tucson region, as well as continuing earlier research directions. Current research maintains many of these topics, but focuses on water policy, planning and governance, with special attention to environmental water needs, cooperative processes, and strategies for managing shared resources.

Water Outreach and Education

Since 1964, the WRRC has devoted much of its efforts to transferring water research results and information to potential users, including other researchers, water managers, policy makers and the wider public. With the initiation of the Arizona Water Resource in 1973 and the *Arroyo* in 1987, the WRRC maintains two signature vehicles for disseminating news and information for a growing community of interested individuals and groups. Other occasional publications that have met important information needs were produced by the WRRC and partners, and include Arizona Know Your Water, Arizona Well-Owners Guide to Water Supply, and other publications mentioned earlier in this history.

With the formation of Arizona Project WET in 1994, the WRRC entered a long and mutually beneficial partnership that fulfilled a major part of the center's education mission. Arizona Project WET has evolved under the leadership of its director, Kerry Schwartz, into a comprehensive water education program with a history of successful teacher training.

In addition, the WRRC takes seriously its mission to foster new water professionals, employing and mentoring many graduate and undergraduate students in meaningful programs of research, education and outreach. The Montgomery & Associates internship, which began in 2008, provides a student the opportunity to work alongside WRRC professionals to develop the annual *Arroyo*.

Access to Publications

The WRRC's current and past issue papers and other publications can be found online through the University of Arizona Campus Repository. Past publications can be accessed by using the Advanced Search tool at arizona.openrepository.com. All current and archived WRRC publications are also available at wrrc.arizona.edu/publications.

The WRRC Now

As the WRRC celebrates its 50 year anniversary, we are looking back at our past activities and achievements, and looking ahead to expanding our services to the community, our capabilities for assisting communities in water management and policy, and the reach of our programs to educate citizens about water. Referencing the WRRC's 2012 Strategic Plan and subsequent revisions, we have set ambitious goals for the coming years and will be continually evaluating our progress toward them.

Arizona Water Map over the years

1994

2002

2008