

Water Wars

Population growth, increased industrialization and agricultural water demands during periods of drought are enflaming tensions between states and setting the stage for the next round of water wars

BY SCOTT RICHARDS AND CAROLYN ORR

The U.S. economy depends on clean water. Manufacturers use 10 trillion gallons each year, and the average household uses 100,000 gallons annually. Water used for irrigating crops and raising livestock helps make American farmers the most productive in the world.

But increasingly, the demand for water exceeds the supply in many areas of the country. Shortages are causing tension among neighboring cities, rural areas, states and even countries that share the same water source. And conflicts over water rights are increasingly ending up in court. According to Georgia Rep. Bob Hannah, "Water is the issue of the 2000s."

Colorado River Basin: A hot spot

In recent years, states in the Colorado River Basin have experienced the fastest population growth in the country. For example, since 1950, Phoenix, Arizona's population has jumped from 332,000 to 3 million, while Las Vegas' population grew from 48,000 to 1.4 million, according to *The Economist*. As a result, the Colorado River is at the center of a water-rights battle that involves farmers and city dwellers, seven states and the U.S. Department of the Interior.

A 1920s interstate compact allocated water among Wyoming, Colorado, New Mexico, Utah, Nevada, Arizona and California, but for years, six of the states



used less than their share, allowing California to take more than its entitlement. Recent economic growth, demographic changes and drought conditions in the West have forced the upstream states to demand enforcement of the compact.

"At the heart, it is an issue of scarcity," said David Kranz, assistant manager of the California Farm Bureau. "The water supply cannot keep up with population growth. Reallocation must occur."

On January 1, after California missed a December 31, 2002 deadline to develop a long-term plan to reduce water withdrawals from the Colorado River, Department of the Interior Secretary Gale

Norton ordered department employees to reduce the flow of water to Southern California by 800,000 acre-feet. An acre-foot of water is equivalent to covering an acre in one foot of water, or approximately 325,851 gallons.

California officials tried to meet their commitment by convincing Imperial Valley farmers to sell their water rights to Southern California cities, but no agreement was reached by the deadline. A major obstacle in the deal is the Salton Sea and the migratory birds that stop there. The Salton depends heavily on the run-off from Imperial Valley agriculture. Farmers are concerned that if the amount

of irrigation water in the Imperial Valley is reduced, concentrations of agricultural chemicals and naturally occurring mineral salts from the soil will increase, resulting in wildlife poisoning. Imperial Valley farmers unsuccessfully attempted to include liability protection in the redistribution plan, which would have protected them from environmental lawsuits for the death of migratory birds and the cost of cleaning up the lake.

In February, after meeting with California's Senate and Gov. Gray Davis' staff, the four Southern California water districts were still unsure how to negotiate the agreement to reallocate Colorado River water.

At the same time that DOI was reducing California's water supplies, a judge in northeastern Colorado declared that the state had exceeded its authority in approving well construction, which may force thousands of wells to shutdown. At issue is whether 3,000 irrigation wells in the South Platte River Basin northeast of Denver have been pumping too much water, drying up the river and injuring farmers and cities with more long-standing water rights. Farmers are looking to the state to provide relief. Colorado officials are expected to appeal the court ruling and introduce legislation addressing water rights.

Impact on agriculture

What might reduced water supplies mean for Western farmers? There is speculation that agriculture in the West may be about to change radically. Biotechnology companies are developing drought-resistant crops, but commercial release of these varieties is still several years off. Vegetable producers may switch to less water-intensive crops, like wheat. Even though agricultural lands in parts of the West are very productive, farmers are increasingly facing competition from cheaper imports, as well as stricter environmental regulations.

In light of these changes, the most lucrative option for an aging population of agriculture producers may be to sell their water rights to the growing cities of the arid West. A number of private investors in California are purchasing



water rights and positioning themselves to sell billions of gallons of water to Southern California.

Water wars move south

While attention has focused on the Western conflicts, other states have similar problems. According to Jimmy Palmer, administrator of the Environmental Protection Agency's Region Four, "The Western water wars have reached the South."

In August 2002, the Oklahoma Water Resources Board was prepared to sue Texas for allegedly storing about 2 billion gallons a year of Canadian River water that belongs to Oklahoma. In November, Oklahoma and Texas officials announced a water compact to deliver 160 million gallons of surface water from six river basins to drought-stricken Texas. Oklahoma will invest revenues earned from the sale to spur economic growth in the 22 counties giving up the water.

Alabama, Georgia and Florida have been involved in ongoing negotiations on the Apalachicola-Chattahoochee-Flint

and the Alabama-Tallapoosa-Coosa river basins for more than a decade. Currently, the Chattahoochee provides more than 85 percent of the Atlanta area's total water supply. In 2001, the Army Corps of Engineers predicted Atlanta's intake from the Chattahoochee would exceed its capacity by 2030, requiring the metro area to find other sources. However, by June 2002, the Corps reported that metropolitan Atlanta already exceeded predicted 2030 water-use levels.

Within the framework of two water compacts, the states are attempting to fashion a solution that takes into account each state's priorities. Georgia officials predict that the metro Atlanta region will need more than 705 million gallons of water per day from Lake Lanier on the Chattahoochee River through 2030, severely reducing the amount of water available for Alabama, Florida and other parts of Georgia. Alabama officials are concerned that Atlanta's growing thirst for water will diminish their ability to expand towns and industries along the Georgia border. In Florida, observers worry about the health of the

Apalachicola Bay and the oysters that live there. In January, governors from the states met to discuss and hammer out a water allocation formula. However, the group postponed the January 31 deadline to July 31, the 13th such extension since the negotiations began in 1998.

Georgia legislators recently completed a study of water needs and are proposing a water management agency to develop a statewide, comprehensive water management plan. The agency's first step would be to determine actual water use.

International tensions

Disputes over water rights are not limited to disagreements between states or urban and rural areas. Mexico and Texas have been in dispute over a 1944 treaty that stipulates Mexico must provide Texas with 350,000 acre-feet of Rio Grande water each year. Mexico can send less than this amount annually, as long as the total amount over a five-year period averages 350,000 acre-feet per year. Mexico owes Texas more than 1.5 million acre feet. Recently, U.S. officials agreed to an interim water-supply plan in which Mexico is to supply 550,000 acre-feet of water by October 2003.

Endangered species vs. human needs

In the Northwest, stakeholders in the Columbia River Valley are calculating the impact of below-average precipitation levels. Through most of this winter, there has been little rainfall, lower-than-average snow packs and below-normal stream levels, raising concerns over the implications for hydroelectric power production and fish. In fact, hydroelectric power has dropped behind biomass (plant material) as the primary source of renewable energy this year because of water shortages.

Environmentalists are concerned that low water levels are likely to lead hydroelectric producers to declare a power emergency, as they did during the 2001 drought. The emergency status allowed the producers to deny water needed by migratory fish to pass over hydroelectric dams, in favor of electricity production. Environmentalists sued the hydroelectric

producers for failing to treat fish equally with power production, as required by law. Because of the lawsuit, the Army Corps of Engineers moved almost all juvenile salmon and steelhead around the dam by barge.

Similarly, in New Mexico, the endangered silvery minnow threatens Albuquerque's use of water from the Rio Grande River. A federal appeals court will decide whether the Endangered Species Act, which protects critical habitat of endangered species, outweighs Albuquerque's water rights. The city depends largely on water from the Rio Grande, which is also crucial to the silvery minnow.

Officials in several states are siding with New Mexico officials' efforts to maintain water supplies from the Rio Grande for Albuquerque's population. Many Western officials worry that a court decision in favor of the fish would stop federal water projects in their states. The stakes are so high that New Mexico officials are prepared to call for a convening of the "god squad," a federal panel with

the power to overrule the Endangered Species Act if it causes unbearable economic hardship.

Is global warming involved?

Last year was the second warmest in the 140 years during which records have been kept; only 1998 was warmer. Researchers predict there is a 50 percent chance 2003 will be another hot year, due to El Nino. During the last two years, some states, including Colorado, Nevada, Arizona, Wyoming and Nebraska also experienced record or near record dryness. In Montana, 1998 to 2002 was the driest period since records began in 1895.

Because of below-average precipitation levels throughout the West, reservoirs have been significantly depleted. In January, statewide totals for major reservoirs in Arizona, Colorado, Nevada, New Mexico, Oregon and Utah were less than half their normal levels. Reservoir levels in Idaho and Montana





were only slightly higher.

This winter's below-average snow in the Dakotas and Montana, coupled with the drought, does not bode well for 2003. As of February, Montana had received only 70 percent of normal snow fall, increasing the probability of continuing water wars this year.

Meanwhile, Seattle officials are concerned that changing weather conditions and global warming could affect the city's water system. Seattle relies on glaciers in the Cascades Mountains that have been retreating in recent decades.

Some scientists are also concerned that winter snow packs may be diminishing. They predict that warmer temperatures will change the precipitation that does fall into rain, rather than snow, decreasing snow pack levels throughout the West.

Snow packs act as reservoirs, retaining water as snow in the winter and slowly releasing it throughout the spring and summer. If drought and global warming cause reduced snow packs or early meltdown, summer stream and river flows will be reduced. This could put hydroelectric producers, the agricultural community and endangered species at odds again.

Long-term planning

Although water shortages are currently more severe in some regions than in others, officials in all states need to plan for the future. "The drought has precipitated this crisis, but long-term solutions are needed," said Kranz of the California Farm Bureau. He stressed the need to "encourage state officials to find new

ways to store water."

Georgia Rep. Bob Hannah agrees. "We are currently experiencing a false sense of security because of recent rains," he said, "but long-term planning has to be done now, not in the crisis situation brought on by years of drought."

In New Mexico, Sen. Dede Feldman and Rep. Mimi Stewart introduced legislation in late January to develop a statewide water plan. New Mexico Gov. Bill Richardson proposed a similar effort during his campaign last fall, calling for special courts to decide water-rights cases, along with conservation and drought-planning efforts.

In Texas, Gov. Rick Perry's "Controlling Our Destiny" program calls for constructing the state's first large-scale ocean water desalination plant, along with other ways to develop new water sources, adopt efficient water-use methods, and finance water infrastructure projects.

And, during her first State of the State Address, Arizona Gov. Janet Napolitano called for "a renewed focus on conservation in our water policies so that we may ensure Arizona will have adequate water resources for generations to come." Napolitano has ordered the state's mayors to make water a top priority, according to *The New York Times*.

Growing populations, increasing industrialization and agricultural water demands will have major infrastructure, environmental and state fiscal impacts in the future. For example, more reservoirs may be needed to collect winter rains and save them for spring and summer. Barriers like dams and the habitat changes they cause could have a significant detrimental effect on a range of aquatic life. State and local officials will be called upon to address the need for new measures to promote water conservation practices and to enforce or modify existing ones.

Ultimately, state officials will need to work cooperatively across borders to develop innovative programs, policies and partnerships to better manage their increasingly precious water resources.★

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