

ECONOMIC HISTORY

Water Wars

BY JESSIE ROMERO

Fighting over water
is as American as
apple pie

Whiskey is for drinking, and water is for fighting.” It’s a saying often heard in the arid American West, where precipitation in some states averages as little as five inches per year, and multiple states may depend on a single watershed to supply their homes, farms, and industry. But over the past two decades, water wars have become a staple of politics in the relatively water-rich Southeast as well. In the Fifth District alone, competition for water has pitched Maryland against Virginia, Virginia against North Carolina, and North Carolina against South Carolina. Farther south, Georgia, Alabama, and Florida have been battling over the Apalachicola-Chattahoochee-Flint river basin since 1990, a dispute that also affects South Carolina.

Historically, the South’s rivers and lakes have provided ample water to satisfy the needs of both city dwellers and farmers, fishermen and manufacturers. But the region’s rapid

economic development, combined with a series of droughts beginning in the 1990s, has increased the tensions among the various interest groups. The result has been a series of prolonged and expensive lawsuits. As population growth and climate change place new demands on the country’s water supplies, states and metro areas may need to develop new solutions to allocate an increasingly scarce resource.

Go West, Young Man

In 1845, journalist John O’Sullivan wrote that it was Americans’ “manifest destiny” to migrate westward, carrying the “great experiment of liberty” to the Pacific Ocean. Millions of Americans heeded his call in the decades that followed, as gold was discovered in California, the Homestead Act gave free land to new settlers, and the Transcontinental Railroad connected the coasts. Between 1860 and 1920, the population of California grew from 380,000 to nearly 3.5 million.

All those people needed water, and miners, farmers, and city officials competed fiercely to divert water from the region’s rivers and streams. Sometimes those competitions turned violent. In 1874, for example, a Colorado man named Elijah Gibbs got into a fight with a neighboring rancher, George Harrington, about drawing water from a nearby creek. Later the same night, someone set fire to one of Harrington’s outbuildings. When he went out to investigate, he was shot and killed. The killing led to a year-long feud known as the Lake County War that took the lives of several more men, including Judge Elias Dyer, who was shot in his own courtroom.

In the early 1900s, the farmers and ranchers of Owens Valley, in eastern California, were supposed to be the beneficiaries of a federal irrigation



Western gold miners, such as these in El Dorado, Calif., circa 1850, built elaborate ditch systems throughout the countryside to divert water for panning gold and operating mines.

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project that would bring the Owens River to their land. But more than 200 miles away, officials in Los Angeles realized that the city couldn't grow unless it found a new source of water, so they began buying up land and water rights in Owens Valley — using quite a bit of bribery and deception, according to many accounts. By 1913, Los Angeles had completed building an aqueduct that diverted nearly all of the Owens River to the San Fernando Valley, and just a decade later the Owens Lake had dried up. Owens Valley residents twice blew up sections of the aqueduct to protest the loss of their water, but the aqueduct was repaired, and Los Angeles grew into the second-largest city in the United States.

Less violent but no less notorious is the ongoing battle for water from the Colorado River, which supplies water for 30 million people in seven different states and in Mexico. In 1922, after years of disagreement, then-Secretary of Commerce Herbert Hoover negotiated the Colorado River Compact. The compact divided the states into the Upper Division (Colorado, New Mexico, Utah, and Wyoming) and the Lower Division (Arizona, California, and Nevada) and apportioned the water equally between the two divisions.

The compact was controversial from the start: Arizona refused to ratify it until 1944, and even called out the National Guard in 1934 in an unsuccessful attempt to block California from building a dam. Over the years, numerous lawsuits have been filed by tribal groups, environmental organizations, and the states themselves, and every few years the states have had to renegotiate certain details of the compact. (During the 2008 presidential election, John McCain was leading in Colorado until he said in an interview that the compact should be changed to give the Lower Division states more water — infuriating Colorado politicians and perhaps costing him the state's electoral votes.) Recently, it has become clear that the compact was signed during a period of unusually heavy rainfall, making the current appropriations unrealistic. That fact, combined with rapid population growth and more than a decade of severe drought, has left federal and state authorities scrambling to manage the existing supply and uncertain about how the water will be allocated in the future.

Oysters and Office Parks

The first water war in the Fifth District predates the existence of the United States. In 1632, King Charles I of England granted all of the Potomac River to the colony of Maryland, giving it access to the river for transportation, fishing, and, most lucratively, oyster dredging. Virginia was somewhat mollified by getting rights to part of the Chesapeake Bay in exchange, but the truce didn't last for long, and for more than three centuries there was periodic violence between oyster dredgers, fishermen, and the state governments. As recently as 1947, the *Washington Post* wrote about the fights between Marylanders and Virginians: "Already the sound of rifle fire has echoed across the Potomac River. Only 50 miles from Washington men are shooting at one another. The night is quiet until suddenly

shots snap through the air. Possibly a man is dead, perhaps a boat is taken, but the oyster war will go on the next night and the next."

By the end of the 20th century, Northern Virginia's economy was booming and the region depended on the Potomac River to power its looming office towers and hydrate its rapidly increasing population. Between 1993 and 2003, water withdrawals from the Potomac by the Fairfax County Water Authority, which serves Northern Virginia, increased 62 percent, compared to an increase of 19 percent for the D.C. metro area as a whole.

In 1996, Virginia wanted to build an additional withdrawal pipe, but Maryland denied the request because it was concerned about the effects of Virginia's sprawl on the region. Virginia spent several years filing administrative appeals with Maryland's Department of the Environment, to no avail, and finally filed a complaint with the U.S. Supreme Court in 2000. (The Court has original jurisdiction over lawsuits between states.) The court ruled in Virginia's favor in 2003, granting it equal access to the river, and Northern Virginia's growth has continued unabated.

On Second Thought, Young Man, Go South

It's not only Northern Virginia that is growing. In the South as a whole, the population has more than doubled over the past 50 years, growing about 30 percent faster on average than the nation as a whole. Just since 2001, the population of the Southeast has grown twice as fast as the Northeast. Today it is the largest population region in the country, with 60 million people.

Many factors have contributed to that growth — the advent of air conditioning, for example, made the hot climate tolerable — but a major draw has been jobs, especially in manufacturing. First, textile and furniture manufacturing companies moved from the Northeast to the South in search of cheaper labor. As those industries moved overseas in search of even cheaper labor, the region started attracting automobile manufacturers from the Midwest and from overseas. Most recently, a cluster of aerospace manufacturing companies has formed in South Carolina, and numerous advanced manufacturing firms have located around Charlotte, N.C.

Over the past three decades, Charlotte also has become the second-largest financial center in the country. The population more than doubled between 1980 and 2011, and from 2000 to 2010 Charlotte was the fastest-growing city in the country, with population growth of more than 64 percent, compared to less than 10 percent in the country as a whole.

That growth has placed serious demands on the Catawba River, which supplies more than 30 cities in the Carolinas with drinking water. The Catawba River begins in the Blue Ridge Mountains in North Carolina and turns into the Wateree River in South Carolina before reaching the Atlantic Ocean. In 2007, North Carolina's Environmental Management Commission approved the diversion of 10 million gallons of water per day from the Catawba to two

Charlotte suburbs, in addition to the 33 million gallons that were already being diverted for the city. (Industrial users in the area, including Duke Energy, withdraw an additional 40 million gallons per day.) The transfers reduced the amount of water available for downstream users in South Carolina, which sued to stop them. The U.S. Supreme Court ruled on procedural matters early in 2010, and the states eventually reached a settlement later that year. (The settlement laid out ground rules for future water transfers but did not limit current transfers.)

In the 1980s, North Carolina was on the opposite side of a dispute with Virginia over the water in Lake Gaston, which straddles the North Carolina-Virginia border. At that time, Virginia Beach did not have an independent source of freshwater and bought surplus water from Norfolk. In 1982, concerned about the reliability of that surplus, city officials decided that the city needed to find its own water and set out to build a 76-mile pipeline from Lake Gaston. North Carolina sued, Virginia Beach countersued, and over the next 15 years, the states fought about the effects of the pipeline on Lake Gaston's striped bass population, the definition of the word "discharge," and alleged collusion between federal agency officials and North Carolina officials. The case eventually reached the U.S. Court of Appeals for the D.C. Circuit, where more than 40 states' attorneys general and the Justice Department filed friend-of-the-court briefs in support of North Carolina's right to block the pipeline. Still, the court ruled in Virginia Beach's favor, and today the city is powered by 60 million gallons per day of Lake Gaston water.

Perhaps the most contentious water fight in the South is occurring outside the Fifth District, among Georgia, Alabama, and Florida. Known as the "tri-state water war," the dispute is over the Apalachicola-Chattahoochee-Flint basin, which begins in northwest Georgia, flows along the border with Alabama, and empties into the Apalachicola Bay in Florida. In 1956 the Army Corps of Engineers completed the Buford Dam on the Chattahoochee River, creating Lake Lanier in northwest Georgia. Since 1990, the three states have been involved in multiple lawsuits and failed negotiations over how the Corps should allocate the lake's water. Georgia wants the water for booming Atlanta; Alabama is worried about Atlanta getting more than its fair share; and Florida is concerned that reduced water flows will hurt the oysters in the Apalachicola Bay. The dispute appeared close to resolution in 2011, after the U.S. Court of Appeals for the 11th Circuit ruled in favor of Georgia on various issues, but Florida filed a new suit against Georgia in the U.S. Supreme Court in October 2013. The Court has yet to decide whether it will hear the case.

Some people are concerned that Georgia might turn to

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the Savannah River, along the border with South Carolina, to meet Atlanta's water needs. Georgia officials assert that they remain focused on Lake Lanier, but South Carolina has threatened legal action over Georgia's withdrawals from the Savannah. Last February, legislators from the two states formed the Savannah River Basin Caucus to try to settle their

differences outside the courts. So far, no one has sued.

Who Owns the Water?

The rules governing water are a jumble of common law, state legislation, federal environmental regulations, interstate compacts, and private deals. But underlying that complicated mix are two basic principles: riparian rights, common in the East, and prior appropriation, common in the West.

In the East, where water is plentiful, "riparian" rights are accorded to whomever owns the land through which the water flows. That person or entity does not own the water itself, but has a right to use it as long as they do not infringe on usage by other riparian owners, such as other homeowners along a lakefront or a city farther downstream. Under the riparian system, water rights can only be transferred with the sale of the land.

Riparian rights were borrowed from English common law, and U.S. courts initially maintained the English tradition that a riparian owner could not disturb the "natural flow" of the water. But by the mid-1800s, more and more industrial users needed water to power their mills, and conflict abounded between mill owners who wanted to build dams and other users up- and downstream, who might see their fields flooded or their own power source diminished. In their efforts to settle these disputes, the courts began to allow riparian owners to divert water for any "reasonable use," generally defined as economically productive use. "In pre-industrial times, the focus was on the rights of a riparian user to the quiet enjoyment of their property," says Richard Whisnant, a professor in the School of Government at the University of North Carolina at Chapel Hill and the former general counsel for the North Carolina Department of Environment, Health and Natural Resources. But as industry grew, "the courts were trying to figure out ways that they could turn these disputes into something that promoted development. They wanted to give priority to water users who were generating economic activity."

Economic activity also was at the center of the Western system of prior appropriation, or "first in time, first in right." Under this system, the first person to divert a water source for "beneficial use," such as farming or industry, becomes the senior rights holder, regardless of who owns the land adjacent to the water. Each year the user with the most senior appropriation gets their allotment first, and users with later appropriation dates get the leftovers. In a dry year,

that might mean that more junior rights holders don't get as much water as they need. Unlike a riparian right, a prior appropriation right can be bought, sold, and mortgaged like other property.

The system was the invention of miners in California, whose camps were often in remote areas far from any water source. To get the water they needed for panning gold and later for operating hydraulic mines, they built elaborate ditch systems throughout the countryside. To the miners, the riparian system of tying water rights to land ownership didn't make any sense: "If two men, or companies, came in and diverted a whole stream, so be it. If just one took the whole stream, so be it. They needed it; they depended on it; they had rights to it," wrote Charles Wilkinson in his 1993 book *Crossing the Next Meridian: Land, Water, and the Future of the West*. Prior appropriation also made sense to the region's new farmers and ranchers, who, like the miners, needed water from wherever they could find it. Prior appropriation quickly became the de facto law of the land. States across the West officially adopted the doctrine after 1882, when Colorado's Supreme Court ruled that the Left Hand Ditch Company could divert the South Saint Vrain creek to another watershed, depriving a farmer downstream of water for his land.

Let the Market Decide

Perhaps the most fundamental tenet of economics is that the allocation of a resource is best achieved through the price mechanism, by allowing buyers and sellers to negotiate a price that reflects the good's relative scarcity. "If you don't price water, or any scarce resource for that matter," says Jody Lipford, an economist at Presbyterian College in South Carolina, "you don't force the consumers of that resource to prioritize use."

But in both the eastern and western United States, the allocation of water is largely a political process, fought over in statehouses and debated in courtrooms. Legislators and judges are unlikely to have all the necessary information to determine the most productive use of the water, however, and legislators in particular might be subject to interest-group influence. That argues for letting price, rather than politics, decide who gets the water.

In the mid-2000s, Lipford studied the Apalachicola-

Chattahoochee-Flint conflict and proposed several market-based solutions to resolve it, including charging a higher price to people in Atlanta; giving the Army Corps of Engineers the authority to charge users higher fees during times of drought or increased demand; or issuing marketable permits to water users, allowing them to buy and sell their allocations. Many people are resistant to the idea of buying and selling water rights, however. "There's this idea that we're talking about water. Water belongs to all of us; you can't make people pay for it. And in the East, where water has been abundant, people don't want to pay for it," Lipford says.

Water markets may also involve significant transactions costs. In many cases, the markets might be thin, composed of only a few buyers and sellers who bargain infrequently. Water trades also can be highly idiosyncratic, depending on a multitude of factors that vary with each transaction. Both these conditions make it difficult for people to know what prices to charge or to offer. In addition, a water trade could have significant externalities that complicate the negotiations, both positive (for example, if a new lake is created for people to enjoy boating or fishing) and negative (if farmland is fallowed).

In the West, where people are more used to thinking of water as a scarce resource and where water rights can be sold, some markets have been established. In 2003, for example, San Diego County in California began buying water from Imperial Valley, a primarily agricultural area; the county is paying \$258 per acre-foot (a measure of water equal to approximately 325,000 gallons) for water that cost the farmers about \$16 per acre-foot. Overall, however, markets remain rare.

The question of how best to allocate water is unlikely to go away. Many scientists predict that during this century, climate change will alter the water supply in the United States, and the U.S. Forest Service projects that water yields across the United States could decline more than 30 percent by 2080. At the same time, the U.S. population is expected to grow more than 30 percent by 2060. As water becomes more scarce and people become more abundant, states and other interest groups will be forced to figure out who gets how much — whether they decide via bullets, lawsuits, or dollars. **EF**

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