

Creating New Water Ways

By Coral Davenport, CQ Staff

The Colorado River is often called the lifeblood of the West, and for good reason. Not only does the 1,450 mile-long waterway sustain millions of acres of farm and semi-arid ranch land, but through myriad diversions it quenches the thirst of fast-growing Las Vegas and Phoenix, as well as Los Angeles and its environs.

None of that is a given in times of severe drought, and an eight-year dry spell is now gripping the region. So it was with palpable relief that Interior Secretary Dirk Kempthorne joined representatives of the seven Colorado River basin states in December to announce an agreement that will force some states to live with less water from the Colorado when its flow slows down. Under the 20-year deal, the states also agreed to negotiate disputes over river flows instead of resorting to the time-honored approach of going to court.

“If the seven states on the Colorado River can get together and work out a deal, then surely anyone can,” Kempthorne declared at the time.



HIGH AND DRY: Waters of Lake Martin in central Alabama have receded because of severe drought in the South. In the town of Kowaliga, marinas have been unable to launch boats. (Source: GETTY IMAGES / DAVE MARTIN.)

The state-federal accord was fresh evidence of a broader mindset taking hold in Washington toward a dwindling resource that many Americans still take for granted. After nearly a century of responding to regional water shortages by expanding the supply — usually by erecting enormous and enormously expensive dams to divert or contain a river’s flow — federal officials for the first time are focusing on the demand side. They are prodding parched states to enter into long-term water allocation agreements, promoting conservation efforts, such as recycling wastewater, and re-examining federal subsidies of farm irrigation.

This turning point toward a more activist federal role was almost inevitable now that tension over water supplies — a fixture in the politics of the West for more than a century — has spread to essentially every corner of the country. Population growth, increased crop production and, most of all, climate change are stressing river systems and reservoirs even in the nation’s most verdant regions, the Great Lakes and the Northeast. Officials in those regions and in the West are calling on Congress to begin formulating a national strategy to help them work out their disputes among state governments, agribusiness and American Indian tribes, fearing that courts won’t be capable of refereeing all of the conflicts that are likely to arise.

“The old ways in which we managed water resources just won’t work anymore,” said Patricia Mulroy, general manager of the

Southern Nevada Water Authority, which serves Las Vegas and was a participant in the Colorado River talks. “We’re not going to solve this in court anymore.”

The Bush administration so far is limiting its efforts to ad hoc interventions in long-running regional disputes verging on gridlock, partly because it doesn’t want to appear to be usurping state policies and existing interstate water agreements. And those interventions have yielded only mixed success.

At the beginning of this month, a more subdued Kempthorne announced that his efforts to mediate a three-state dispute over water rights in two river basins in the South had collapsed after two of the states, Florida and Alabama, refused to make concessions to the other, Georgia, to accommodate the growing demand for water in the burgeoning Atlanta suburbs.

The dispute — centered on Georgia’s effort to hold more water in federal reservoirs in the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa river basins and exacerbated by last summer’s drought in the region — will now be settled instead through a water-sharing agreement to be imposed by the Army Corps of Engineers.

Ongoing negotiations over water supplies aren’t limited to parched locales. The droughts in the South and West are inspiring eight states in the Midwest (and two Canadian provinces) to try to discourage other regions from poaching their water, by drafting a proposed compact that would restrict taking water out of the Great Lakes and the St. Lawrence River basin.

But efforts to ratify the pact, more than eight years in the making, are foundering because of concerns from Wisconsin and Ohio, where officials worry about the potential of ceding their water rights to other states and usurping some private rights.

Meanwhile, state officials, conservationists and agriculture groups are already positioning themselves to influence debates over other important bodies of water such as the Ogallala Aquifer, which meanders under eight Great Plains states and provides the water for communities stretching from Texas to South Dakota, as well as more than 14 million acres of farmland.

The vast underground reservoir has been steadily drained since the 1980s because of population growth; increased demand for cotton, corn and other crops; and erratic climate patterns that have significantly reduced the rainfall needed to recharge the water table. The aquifer’s level has fallen by more than 100 feet in some areas, threatening local water supplies and driving up the cost of pumping new wells.

“It’s dried up to such a point that it’s almost not worth pumping out because it’s so expensive,” said Kenneth Cook, president of the Environmental Working Group, a prominent watchdog group in Washington.

The question is whether anything less than an obvious crisis will bring about a major shift in federal policy. Many in Congress still view water battles as parochial disputes pitting farmers, ranchers and private landowners against federal bureaucrats. But a growing body of evidence — from the receding shorelines of the Great Lakes to the diminished snowpacks in New York’s Catskill Mountains — suggests that the problem could soon go national.

“You’re getting a phenomenal increase in stress on water around the country,” said Jonathan Pershing, a prominent climate scientist who directs the Climate, Energy and Pollution Program for the World Resources Institute, an environmentalist think tank. “Areas we historically think of as very wet will begin experiencing problems. This will be a big issue this year.”

“The federal government can be a better partner than it has been in meeting these challenges,” said the chairman of the Senate Energy and Natural Resources Committee, Democrat Jeff Bingaman of New Mexico, who is promoting a \$100 million plan to provide grants for water conservation and research. “We’re not doing a very good job of meeting them now.”

The Colorado River agreement proved that officials in some stressed regions are at least ready to talk. The seven states involved — Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming — adopted guidelines that allow the Interior Department to cut back water deliveries to Arizona and Nevada when a shortage is declared.

That could happen before decade’s end: Drought has left the river’s two mammoth reservoirs, Lake Mead and Lake Powell, half-full, and Kempthorne said runoff in five of the seven states is projected to decline more than 15 percent in the 21st century. Studies have concluded that in the next decade there is a 50 percent chance that Lake Mead and Lake Powell won’t have enough water to generate hydropower.

"All across the country, historical practices are colliding with new circumstances," said the Southern Nevada Water Authority's Mulroy. As part of the agreement, her agency will help finance a new reservoir near the Mexican border and gain access to some of the captured water.

"A lot of the facilities we have built just won't work for a change in climate and how precipitation manifests itself," Mulroy said. She noted that most of the region's catch basins and reservoirs are designed to capture high volumes of runoff from mountain snowpacks — an increasingly rare occurrence because of changing weather patterns.

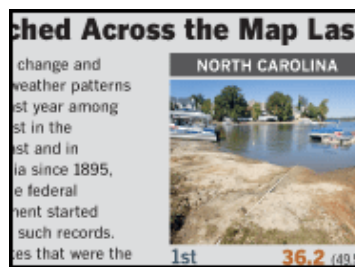
A National Problem

The federal government's hands-on approach to manipulating demand for water is something new in the West, where water disputes have been fierce but largely parochial. The arid climate and scattershot development have given rise to a system in which farmers, ranchers, urban users and Indian tribes each assert claims to water in rivers or streams. Occasionally, the federal government has stepped in by asserting its right to reserve quantities of water for future uses — say, sustaining a particularly ecologically sensitive area.

The variety of claims leads to situations in which a waterway becomes "overappropriated," meaning there isn't enough flow to accommodate all the users. Disputes then are typically aired out in state courts before "special masters," who have the discretion to consolidate claims and approve negotiated settlements.

Experts say a crush of increasingly complex disputes could clog courts as more aquifers and river basins dry up, causing long delays and major expenses for users. The experts hope that proactive federal policies to promote conservation will discourage regional squabbles such as the long-running feud on the Arkansas River, in which Kansas is seeking reimbursement from Colorado for drilling wells and diverting usable river flows from farmers downstream. They also could mitigate some of the effects of climate change that are being felt in locales where drought for now remains an exotic word.

"We've started to see some things happen that we had never before seen east of the Mississippi," said Dan Nees, a water policy analyst at the World Resources Institute. "In many places, even in the mid-Atlantic, we are going to be facing a water crisis."



Parched Across the Map Last Year: [Click here to view the chart](#)

The Government Accountability Office estimates that three dozen states, many outside the West, will probably suffer significant water shortages in the next decade. Some of that will be because of human activities; growing metropolitan areas increase demand for electricity, which drives up demand for the water to drive the turbines and generators in power plants. Meanwhile, the effects of climate change will be sapping supplies on many fronts.

The nationwide push to adopt more biofuels such as corn-based ethanol is also adding to the ecological stress. A biorefinery that produces 100 million gallons of ethanol annually requires as much water as a town of about 5,000 needs in a year, according to a report prepared by the National Academy of Sciences.

Congressional mandates to increase ethanol production will be felt the most in regions such as the High Plains, because the corn and wheat farmers there will have to find more irrigation water from depleted sources like the Ogallala Aquifer. Concerns about ensuring enough supply have become especially acute since the enactment of last fall's energy policy overhaul, which requires that 36 billion gallons of ethanol and other biofuels be used annually by 2022 — up from just 6 billion gallons last year.

Such man-made dilemmas are being amplified by the dramatic effects of climate change. Higher temperatures are increasing evaporation rates and lowering levels of lakes and reservoirs that serve population centers. And generally warmer temperatures are shrinking water sources that existed for millennia. Scientists at the U.S. Geological Survey estimate that by 2030 there will be no more ice in Montana's Glacier National Park.

The weaker stream flows that result, combined with higher temperatures, will affect water quality by permitting more bacteria and algae to grow. What's more, a pattern of less frequent but more intense rainfall is filling reservoirs with more sediment and pollution.

The problems aren't limited to regions fed by snowmelt. Projections by the Intergovernmental Panel on Climate Change, an arm of the United Nations, show that coastal states will be imperiled by rising sea levels that could threaten groundwater supplies if they contaminate aquifers with saltwater and thereby render the water undrinkable.

If those scenarios become reality, consumers will face water rationing and other enforced conservation — not to mention higher food bills. Weaker stream flows could threaten electricity supplies in regions that are heavily dependent on hydropower projects. And localities forced to build expensive desalination facilities or plants to treat and recycle wastewater would no doubt be forced to pass on some of the cost to consumers.

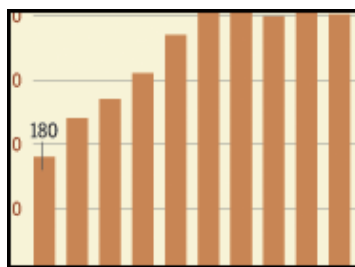
"You can always get more water if you're willing to spend a lot of energy, but we can't take cheap and abundant energy for granted," said Noah Hall, an expert in water law at Wayne State University in Detroit. "We used to solve water crises by diverting it from where nature put it, which requires tremendous amounts of energy. Desalination requires tremendous amounts of energy."

Federal efforts to address those problems through conservation measures will be difficult, because any nationalized rationing would antagonize states, farmers and urban interests. As the failed negotiations among Florida, Georgia and Alabama showed, Congress and the next president will have to mollify an aggressive group of special interests, each intent on asserting its claims and wary of cutting deals.

Drought Down Under

Though water policy hasn't been a prominent feature of national politics in the United States since Congress enacted clean water and conservation laws in the 1970s, it is playing a role elsewhere. Concerns about fresh water supplies influenced last summer's Australian elections, when a severe drought forced water rationing in major cities. Labor Party leader Kevin Rudd campaigned on a platform that stressed the need to confront climate change — and the drought helped him oust Conservative Prime Minister John Howard, who opposed international pacts such as the Kyoto Protocol to address the issue.

"This is something we should be expecting the presidential candidates to address," said Wayne State University's Hall. "The next secretary of Interior is going to have tremendous water issues. The president better come in to office ready to deal with a national water crisis. Interstate water disputes are coming to a head right now in the Southeast and Great Lakes, and those are issues that the president is going to have to face the first year in office."



Thirsty Nation: [Click here to view the chart](#)

To appreciate the political sensitivities, consider the dilemma that Philadelphia and New York might confront. Neither city is normally associated with long-term water shortages, but both rely on the same river flows and mountain reservoirs. Rising sea levels are expected to gradually force more saltwater up the Delaware River and contaminate the potable water supply for

Philadelphia and its suburbs, according to Carol Collier, executive director of the Delaware River Basin Commission, which supplies drinking water to 15 million people in New York, New Jersey, Pennsylvania and Delaware. At the same time, heavier rainfall and flooding will sully reservoirs with sediment. To compensate, Collier says, the commission might release water from the reservoirs in the Catskill Mountains that store water for New York. City officials would have to look elsewhere to augment its water supply — at a cost of billions of dollars.

This prospect prompted the New York City Department of Environmental Protection to join forces last month with seven of the other biggest water agencies in the nation to create a new coalition called the Water Utility Climate Alliance, which is promoting research on how climate change affects municipal water supplies. All the other members are from the West: the San Francisco Public Utilities Commission, Denver Water, the Metropolitan Water District of Southern California, the Portland Water Bureau, the San Diego County Water Authority, the Seattle Public Utilities and the Southern Nevada Water Authority.

Other East Coast localities could find themselves in similar binds. The severe drought that gripped the mid-Atlantic in 2001, when Virginia and North Carolina came perilously close to draining their state-run reservoirs, could recur relatively soon, ratcheting up tensions among local governments that will be increasingly protective of the resources they control.

One obvious pressure point is the Potomac River basin, which supplies drinking water to parts of Virginia, West Virginia, Maryland and Washington. Increased demand for electricity has led utilities to convert more water from the river into steams to drive the turbines in their power plants.

“One of the big water issues we’re looking at in the East, and particularly in the Potomac River basin, is consumptive use by more power plants — the use of water that is evaporated, that doesn’t come back,” said Joseph Hoffman, executive director of the Interstate Commission on the Potomac River Basin, a congressional chartered agency that manages the waterway.

Hoffman said the additional draw on water during times of peak electricity demand could be so great that the river’s levels could sink to dangerous new lows. “At some point we will need to have mandatory restrictions on water consumption. They will have to bite the bullet,” he said.

That is what make officials in the Great Lakes region so nervous. Last summer, when he was running for president, Democratic Gov. Bill Richardson of New Mexico suggested dipping into the Great Lakes to help quench the Southwest. Now, with the prospect of water shortages cropping up in most parts of the nation, ever more lawmakers may begin looking to the north.

“We’re looking at what’s happening around the country and projecting that we in the Great Lakes region need to have our act together in terms of protection,” said Allegra Cangelosi, a senior policy analyst with the Northeast-Midwest Institute, a regional think tank.

Indeed, water levels in Lakes Superior, Huron and Michigan have all been declining for the past two decades, with Huron and Michigan standing at two feet below average since 1990. Despite this, water users and states in drought regions could appeal to Congress for access to stream flows in the upper Midwest, reasoning that water should flow to where the need is greatest.

“That’s why Great Lakes states are fearful of federalizing water policy,” said Wayne State’s Hall. “They think if the federal government were to decide who gets water, they would be on the losing end of that equation.”

Agriculture’s Role

One area where the federal government will find it particularly hard to manage water demand is in agriculture. Any national framework to expand fresh water supplies will be strongly influenced by the farm lobby, which is intent on maintaining not only sources of irrigation for the big-ticket commodities — corn, wheat and soybeans — but also the system of federal subsidies that allows growers to contract for cheap water, even in times of scarcity. For this reason, most of the demand-side policies now being discussed are incremental and designed not to clash with existing farm laws.

The irrigation subsidies date to the Reclamation Act of 1902, which encouraged families to settle and farm land in the arid or semi-arid West. Over time, the eligible number of acres on which farmers could receive subsidized water increased sixfold, from 160 to 960. Environmental groups contend that many big corporate farms now qualify for taxpayer-subsidized water,

paying 10 percent or less of the water's full cost.



Southeast Under Stress: [Click here to view the chart](#)

In some areas, such as California's Central Valley, some users sell this subsidized water at a huge profit to urban users. Elsewhere, watchdogs such as the Environmental Working Group complain that farmers have "double dipped" by using the subsidized water to grow crops, which then qualify for federal price supports.

Conservationists, noting that agriculture accounts for 80 percent of the nation's water usage, and more than 90 percent in many parts of the West, are calling on Congress to re-examine the irrigation subsidies in the context of current shortages and seek ways to encourage conservation, or at least to reallocate the subsidies to more productive areas. "With climate change and the stress on climate resources, when cities are going dry, we should find the political will to do this," Hall said.

Private utilities are encouraging such discussions, saying customers in urban areas will face higher bills if water is diverted to where it isn't really needed.

"We cannot assume anywhere in the country that we can just punch another hole, drill another well," said Peter Cook, executive director of the National Association of Water Companies. Referring to areas now experiencing the threat of shortages, he added, "We won't have enough water to support the newly arid parts of the country that until just 10 years ago appeared to be water-rich. A lot of new players have to become active to allow us to continue to meet the needs of our customers."

But such arguments appear unlikely to carry the day any time soon. Irrigation subsidies are not part of a farm bill that would update federal agriculture policy for the next five years and is the subject of final negotiations between the House and Senate. Any noteworthy changes to the water subsidy would have to be part of a separate debate on water policy.

The American Farm Bureau, arguably the most politically influential agriculture group, says any effort to limit water supplies or cut irrigation subsidies will drive up the price of food — a prospect many in Congress don't remotely want to contemplate at a time when their constituents are grappling with higher health care and energy costs.

Bob Stallman, the Texas rice farmer who is now president of the Farm Bureau, says Congress should focus on ways to ensure a continuous supply of water to agriculture interests, including exporting it across the continent, if necessary.

Any threat of federal cuts to water subsidies "will have a dramatic impact on food production," said Stallman, who gets water for his rice paddies at a government-subsidized rate of \$35 per acre-foot, compared with the \$800 average paid by surrounding municipalities. (An acre-foot, the unit of volume commonly used to measure water flows, equals 325,851 gallons.)

"If you take it away, or make it a pure market cost, you shut down the Texas rice industry," Stallman said. "Consumers still understand that agriculture is a big user of water, but it's absolutely necessary to have water to grow their food."

The farm lobby is also likely to fight efforts to increase federal involvement in water management and conservation programs.

"Most water law has evolved within a state. Interjecting the federal government into that would be strongly resisted," said Stallman. "When you see a situation like Georgia, there could be a role in government helping create cooperative solutions — but those solutions boil down to more control."

Agriculture groups are mindful of the situation that occurred in the Klamath River Basin along the California-Oregon border in 2001, when severe drought prompted the Interior Department to curtail deliveries of water from federal projects to about 200,000 acres of farmland in order to sustain river flows downstream for Coho salmon and two other endangered fish species. Farmers eventually persuaded the Bush administration to reverse the decision.

Policy Options

A fight with the farm lobby could get ugly, because agriculture interests still hold enormous sway with lawmakers in both parties. "Agriculture is going to be the 800-pound gorilla on water," said Craig Cox, executive director of the Soil and Water Conservation Society.

With any sweeping proposals to manipulate water use likely to get shot down, lawmakers are taking a cautious, almost carrot-and-stick approach in their current discussions. The goal is to encourage states and local officials to work out problems associated with allocating and managing water, but make it clear that federal officials will impose solutions if they don't get results quickly. Representatives and senators also are eager to promote new technologies to improve water supplies and quality, as long as they can find the money.

"For the federal government to just come in and usurp local agencies would set us back," said the Southern Nevada Water Authority's Mulroy. "The threat of federal intervention may be what's more potent."

One idea under consideration is actively promoting more interstate compacts like the one signed by the Colorado River states, but doing so before dire shortages occur. The idea, congressional aides say, would be to target those interstate water systems that are most vulnerable to stress and set ground rules for responding to multi-year drought.

Water experts are also pressing Bingaman and other committee chairmen to make a commitment to water recycling — an idea with environmental merits that nonetheless makes many people uneasy. Recycling projects treat and purify wastewater so it can be released into streams and reservoirs or used for purposes such as irrigation or firefighting.

And conservationists are promoting desalination, the process of removing salt and minerals from seawater to make it suitable for consumption or irrigation. California voters in 2002 approved a proposition providing grants for construction projects, but a corresponding federal effort has been slow in materializing because of cost considerations.

Beyond such targeted efforts, lawmakers such as Bingaman would like to conduct a federal water census to better define how much potable water the nation actually has left. The last such nationwide survey took place 30 years ago. "We do need an up-to-date water census," said Robert Hirsch, associate director for water at the U.S. Geological Survey. "You can't manage what you don't measure."

Solutions will prove elusive because climate scientists still cannot predict the timing and severity of drought, floods and water shortages with great accuracy. But experts nonetheless say the widespread acceptance of global warming and the high stakes in the debate justify taking a stand.

"We don't wait for certainty to buy insurance," said Roger Pulwarty of the National Integrated Drought Information System, a special federal team created two years ago to assess droughts across the country. "Have droughts and floods occurred in the past? Yes. We're waking up to how vulnerable our systems already are. This question of 'where will the water come from?' is very real."

FOR FURTHER READING:

Great Lakes water concerns, CQ Weekly, p. 119; *2007 energy policy overhaul (PL 110-140)*, p. 45; *farm bill (HR 2419)*, p. 33; *desalination*, 2007 CQ Weekly, p. 1180; *agriculture and lobbying*, 2007 CQ Weekly, p. 114; *Bingaman's water bill is S 2156*.

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