Time ripe for commission on water?

Despite data showing that U.S. water consumption has remained relatively unchanged over the past 20 years, experts are calling for greater federal oversight of national water policy, possibly under a single commission. As things now stand, numerous federal agencies and departments create policies in fragmented pieces that don't always fit together, say policy and water experts. Better coordination is needed to help allay the governance crises brewing over water shortages and pollution, particularly due to runoff from agricultural and urban areas, as well as mine and forestry lands.

Water resource problems are growing, and conflicts among water users are worsening across the country, says Peter Gleick, president of the Pacific Institute for Studies in Development, Environment, and Security, a research and public policy think tank. Prime examples include allocation and management disputes over water in the Klamath River basin in the Northwest, the Middle Rio Grande basin in New Mexico, the Missouri and Mississippi rivers in the Midwest, and the Chattahoochee and Flint rivers in the Southeast.

In fact, a 2001 U.S. National Research Council (NRC) report, *Envisioning the Agenda for Water Resources Research in the Twenty-First Century*, said that the problem is so severe that the United States will be increasingly "challenged to provide sufficient quantities of high-quality water to its growing population."

Many water experts say that overall water supply is not the problem, with some regional exceptions, but rather management of that supply. "It's in danger of being mismanaged to the point where it's in exceedingly short supply," says William Graf, a geographer at the University of South Carolina. "It's a national-level problem, but because of the way we deal with water resources in the United States, we don't really have a national platform from which to address that problem."

The Colorado River, which flows through seven states, offers a good example of just how complex the problem can be, Gleick notes. States are responsible for determining how their water shares are to be used, but the federal government is responsible for managing the reservoirs, meeting U.S. obligations to Mexico to deliver water, and protecting and restoring endangered species. And these tasks are divided among the Bureau of Reclamation, the State Department, and the Fish and Wildlife Service. On top of that, the U.S. EPA addresses water quality concerns, and the Army Corps of Engineers looks after navigation and flood control. Also, Gleick explains that "we have an agricultural policy that often ignores efforts to maintain ecosystems or projects related to urban water development because of different departments." The same thing typically occurs in Congress, where various committees tend to focus only on certain water issues.

PHOTODISC

Electrical production is one of the biggest consumers of water, accounting for nearly half of total use.

Graf, Gleick, and others are calling for a national commission on water, which was last seen some 25 years ago in the form of the U.S. Water Resources Council (WRC). The council was disbanded in the early 1980s. Such a commission, they say, could help to reevaluate national water science and policy, identify data gaps, offer guidance on how to coordinate efforts now scattered among numerous federal agencies and departments, and perhaps play a mediating role in interstate water disputes.

WRC consisted of the cabinet secretaries from seven major departments and the EPA administrator and coordinated federal water policy, says Leo Eisel, who directed the council from 1977 to 1980 and is currently an engineer with the consulting firm Brown and Caldwell. He cautions, however, that strong support from the administration is necessary to bring about such coordination. "If the president isn't interested in water, then [any future council] falls down to warring among the bureaucrats of all the agencies that have an interest in water programs," which is what happened in the 1980s. "I'm not sure how you could put together some kind of entity involving all these major agencies so that it could last from administration to administration and be effective," he notes, adding that such a move would be important nonetheless.

The U.S. Geological Survey (USGS) compiles water-use data every five years. The latest report, released in March, finds that the amount of water used in the United States has changed little since 1985, despite a growing population and increasing electricity production. Robert Hirsch, the agency's chief hydrologist, attributes this trend to "advances in technology in irrigation and power generation that allow us to do more with less water."

Electricity production and irrigation are far and away the biggest water users in the country, accounting for 48 and 34% of total

water use, respectively, according to the USGS report *Estimated Use of Water in the United States in 2000*. Public supply is a distant third at 11%, and although this portion is growing, it's not increasing at the same rate as population figures.

However, water experts point out that no thorough national assessment of water availability and use has been conducted since the late 1970s, and a lot has changed in the interim. For example, the USGS report shows that groundwater withdrawals were 14% higher during 2000 than in 1985, which has resulted in a decline in groundwater storage aquifers in many areas of the country, Hirsch says. These declines, in turn, can contribute to diminishing stream flows, because groundwater generally maintains base flows during dry periods. "We know this kind of thing happens, but we haven't really looked at real changes in flow in our streams," Hirsch notes. These declines also mean that less water is flowing into wetlands and other waterways.

Climate change too is having an impact on water supplies, particularly in areas where snow packs have played an important role in the hydrologic system. "We're seeing less snow and more rain," Hirsch explains. "That really affects how much you can reliably get out of a river for irrigation or municipal purposes because you've lost some of the natural storage that existed in the snow pack," he says.

Moreover, new pressures have surfaced since the enactment of the Endangered Species Act, which requires flow rates to be protective of aquatic species, and because of water rights protections for Native Americans.

"It's pretty clear that many river systems, particularly in the West, are fully appropriated," Graf says. "People have rights to all of the water that exists in those rivers and then some. But that's all taking place against a backdrop whereby many Native American tribes have not yet adequately been able to define what their water rights really are, and their water rights trump the ones that we're currently exercising."

Based on recommendations from the NRC, the USGS submitted a report to Congress in 2002 that outlines a research plan for assessing the nation's freshwater availability.

By looking at changes in stream flows and groundwater storage, researchers could glean a better picture of just how water use is impacting the reliability and sustainability of these water supplies and their associated aquatic and riparian ecosystems, Hirsch explains. Policymakers could then use such data to analyze future development scenarios and water use in broad regions of the country. Although no money is available for such an effort, he notes that "we're seeing movement in Congress to actually fund this effort within the next year or so."

Meanwhile, legislation is pending in Congress to establish a national water commission modeled after WRC. The bill, entitled the Twenty-First Century Water Commission Act of 2003, was passed by the House in November and referred to the Senate Environment and Public Works Committee, but congressional observers do not expect it to move forward this year.

"The federal government has an important role here, not to take over what the states should be doing, but to correct problems where a combination of disjointed federal policies is actively undermining states' ability to deal with the problem," says Chris Lant, executive director of the Universities Council on Water.

"I see real gridlock out there," Hirsch adds, especially in renegotiations of water allocations with habitat considerations, which are getting more of a seat at the table. "There's a need to renegotiate things in light of new scientific knowledge and understanding of the importance of water to biota."

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