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Our Water Supply, Down the Drain

TUCSON - In the United States, we constantly fret about running out of oil. But we should be paying more attention to another limited natural resource: water. A water crisis is threatening many parts of the country – not just the arid West.

In 2008, metro Atlanta (home to nearly 5 million people) came within 90 days of seeing its principal water supply, Lake Lanier, dry up. Rainstorms eased the drought, but last month a federal judge ruled that Georgia may no longer use the lake as a municipal supply. The state is now scrambling to overturn that ruling; but Alabama and Florida will oppose Georgia's efforts.

In Florida, excessive groundwater pumping has dried up scores of lakes. In South Carolina, a paper company recently furloughed hundreds of workers because low river flows prevented the company from discharging its wastewater. That state's battle with North Carolina over the Catawba River has reached the U.S. Supreme Court. Water has become so contentious nationwide that more than 30 states are fighting with their neighbors over water.

Lake Superior, the largest of the Great Lakes, is too shallow to float fully loaded freighters, dramatically increasing shipping costs. North of Boston, the Ipswich River has gone dry in five of the past eight years. In 2007, the hamlet of Orme, Tenn., ran out of water entirely, forcing it to truck in supplies from Alabama.

Droughts make matters worse, but the real problem isn't shrinking water levels. It's population growth. Since California's last major drought ended in 1992, the state's population has surged by a staggering 7 million people. Some 100,000 people move to the Atlanta area every year. Over the next four decades, the country will add 120 million people, the equivalent of one person every 11 seconds.

More people will put a huge strain on our water resources, but another problem comes in something that sounds relatively benign: renewable energy, at least in some forms, such as biofuels. Refining one gallon of ethanol requires four gallons of water. This turns out to be a drop in the bucket compared with how much water it takes to grow enough corn to refine one gallon of ethanol: as much as 2,500 gallons.

In the United States, we've traditionally engineered our way out of water shortages by diverting more from rivers, building dams or drilling groundwater wells. But many rivers, including the Colorado and the Rio Grande, already dry up each year. The dam-building era from the 1930s to the 1960s tamed so many rivers that only 60 in the country remain free-flowing. Meanwhile, we're pumping so much water from wells that the levels in aquifers are plummeting. We're running out of technological fixes.

Some dreamers gaze upon distant sources of water and imagine that the problem is solved. Plans to divert water from rivers in British Columbia or tow icebergs from Alaska periodically arise. An entrepreneur in Colorado, Aaron Million, recently proposed a \$4 billion, 400-mile pipeline to transport water from the Flaming Gorge Reservoir, located on the Green River in Wyoming and Utah, to Denver and Colorado Springs. But the dreamers tend not to address the immense costs, significant environmental objections or regulatory nightmares associated with such grandiose proposals.

More viable solutions include desalination of ocean water, reuse of municipal waste and aggressive conservation strategies. But none of these is a cure-all. Desalination is expensive, burns energy and generates a thorny waste problem. Nor is reclaiming water -- that is, reusing water from the sewage system -- a silver-bullet answer to the crisis. Aside from the major "yuck" factor associated with the idea of potable toilet water, it's also quite expensive, requiring a set of pipes that is completely separate from the drinking-water system.

Conservation does work. In places such as San Antonio, Albuquerque, Tucson and Long Beach, Calif., aggressive conservation programs have reduced consumption dramatically. But it's not enough.

We need a new water policy in the United States. Americans do not pay the real cost of the water that we use. In fact, we don't pay for water at all. The check that citizens write to their municipal water department or private water company covers only the cost of service, plus a small profit for the private company. There is no charge for the water itself.

Last summer, as the price of gas inched up over \$4 a gallon, Toyota dealers couldn't keep fuel-efficient Priuses in stock. We should apply that pricing lesson if we want to

conserve water, using increasing block rates to discourage profligate water use. Tucson does that and adds a surcharge for excessive use in the summer, when water mostly goes to fill swimming pools and irrigate landscaping.

The idea of charging for water offends many people who think that would be like charging for air. Is it immoral to extract fees for an essential resource? Precisely because water is a public – and exhaustible – resource, the government has an obligation to manage it wisely.

Think of our water supply as a giant milkshake, and think of each demand for water as a straw in the glass. Most states permit a limitless number of straws -- and that has to change.

The West, one of the thirstiest parts of the country, is developing a system that should lead the way: the use of market forces to reallocate water. In eastern Oregon, along the Middle Fork of the John Day River, the Oregon Water Trust persuaded third-generation ranchers Pat and Hedy Voigt to turn off their irrigation system each year from July 20 until the end of the growing season. The 6.5 million gallons per day that would have been diverted to grow alfalfa now augment river flows and improve the habitat of endangered salmon and steelhead trout. The \$700,000 paid to the Voigts allowed them to make substantial on-farm improvements.

Taking their straw out of the glass is one step toward keeping us from getting parched.

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