

Experts Fear Much of U.S. Could Face Water Shortage

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WEST PALM BEACH, Fla. —

An epic drought in Georgia threatens the water supply for millions. Florida doesn't have nearly enough water for its expected population boom. The Great Lakes are shrinking. Upstate New York's reservoirs have dropped to record lows. And in the West, the Sierra Nevada snowpack is melting faster each year.

Across America, the picture is critically clear - the nation's freshwater supplies can no longer quench its thirst.

The government projects that at least 36 states will face water shortages within five years because of a combination of rising temperatures, drought, population growth, urban sprawl, waste and excess.

"Is it a crisis? If we don't do some decent water planning, it could be," said Jack Hoffbuhr, executive director of the Denver-based American Water Works Association.

Water managers will need to take bold steps to keep taps flowing, including conservation, recycling, desalination and stricter controls on development.

"We've hit a remarkable moment," said Barry Nelson, a senior policy analyst with the Natural Resources Defense Council. "The last century was the century of water engineering. The next century is going to have to be the century of water efficiency."

The price tag for ensuring a reliable water supply could be staggering. Experts estimate that just upgrading pipes to handle new supplies could cost the nation \$300 billion over 30 years.

"Unfortunately, there's just not going to be any more cheap water," said Randy Brown, Pompano Beach's utilities director.

It's not just America's problem - it's global.

Australia is in the midst of a 30-year dry spell, and population growth in urban centers of sub-Saharan Africa is straining resources. Asia has 60 percent of the world's population, but only about 30 percent of its freshwater.

The Intergovernmental Panel on Climate Change, a United Nations network of scientists, said this year that by 2050 up to 2 billion people worldwide could be facing major water shortages.

The U.S. used more than 148 trillion gallons of water in 2000, the latest figures available from the U.S. Geological Survey. That includes residential, commercial, agriculture, manufacturing and every other use - almost 500,000 gallons per person.

Coastal states like Florida and California face a water crisis not only from increased demand, but also from rising temperatures that are causing glaciers to melt and sea levels to rise. Higher temperatures mean more water lost to evaporation. And rising seas could push saltwater into underground sources of freshwater.

Florida represents perhaps the nation's greatest water irony. A hundred years ago, the state's biggest problem was it had too much water. But decades of dikes, dams and water diversions have turned swamps into cities.

Little land is left to store water during wet seasons, and so much of the landscape has been paved over that water can no longer penetrate the ground in some places to recharge aquifers. As a result, the state is forced to flush millions of gallons of excess into the ocean to prevent flooding.

Also, the state dumps hundreds of billions of gallons a year of treated wastewater into the Atlantic through pipes - water that could otherwise be used for irrigation.

Florida's environmental chief, Michael Sole, is seeking legislative action to get municipalities to reuse the wastewater.

"As these communities grow, instead of developing new water with new treatment systems, why not better manage the commodity they already have and produce an environmental benefit at the same time?" Sole said.

Florida leads the nation in water reuse by reclaiming some 240 billion gallons annually, but it is not nearly enough, Sole said.

Floridians use about 2.4 trillion gallons of water a year. The state projects that by 2025, the population will have increased 34 percent from about 18 million to more than 24 million people, pushing annual demand for water to nearly 3.3 trillion gallons.

More than half of the state's expected population boom is projected in a three-county area that includes Miami, Fort Lauderdale and Palm Beach, where water use is already about 1.5 trillion gallons a year.

"We just passed a crossroads. The chief water sources are basically gone," said John Mulliken, director of water supply for the South Florida Water Management District. "We really are at a critical moment in Florida history."

In addition to recycling and conservation, technology holds promise.

There are more than 1,000 desalination plants in the U.S., many in the Sunbelt, where baby boomers are retiring at a dizzying rate.

The Tampa Bay Seawater Desalination Plant is producing about 25 million gallons a day of fresh drinking water, about 10 percent of that area's demand. The \$158 million facility is North America's largest plant of its kind. Miami-Dade County is working with the city of Hialeah to build a reverse osmosis plant to remove salt from water in deep brackish wells. Smaller such plants are in operation across the state.

Californians use nearly 23 trillion gallons of water a year, much of it coming from Sierra Nevada snowmelt. But climate change is producing less snowpack and causing it to melt prematurely, jeopardizing future supplies.

Experts also say the Colorado River, which provides freshwater to seven Western states, will probably provide less water in coming years as global warming shrinks its flow.

California, like many other states, is pushing conservation as the cheapest alternative, looking to increase its supply of treated wastewater for irrigation and studying desalination, which the state hopes could eventually provide 20 percent of its freshwater.

"The need to reduce water waste and inefficiency is greater now than ever before," said Benjamin Grumbles, assistant administrator for water at the Environmental Protection Agency. "Water efficiency is the wave of the future."

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