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Report sees risk of water shortages

By [David Hendee](mailto:david.hendee@owh.com) <mailto:david.hendee@owh.com>
WORLD-HERALD STAFF WRITER

All but three of Nebraska's 93 counties are at risk of water shortages by mid-century if climate change evolves as scientists expect, according to a report on a new study.

In Iowa, 68 of 99 counties face the same threat.

The Nebraska and Iowa counties are among 1,100 across the nation — more than one-third of all counties in the lower 48 U.S. states — to be at risk of water shortages, the New York City-based Natural Resources Defense Council said Tuesday.

“Even if you don't believe in climate change, we still have problems in certain areas of our state,” Ann Bleed of Lincoln, a consultant and Nebraska's former water czar, said after reviewing the report.

Tim Anderson, a spokesman for the Central Nebraska Public Power and Irrigation District, the state's largest, said the report “is a red light flashing on the dashboard.”

Dan Lashof, director of the Natural Resources Defense Council's Climate Center, said water shortages can strangle economic development, agricultural production and communities. In 2007, the value of the crops produced in the at-risk counties across the country exceeded \$105 billion. Nebraska's share was \$6.4 billion; Iowa's share was \$6.3 billion.

Lashof said the analysis indicates climate change will take a serious toll on water supplies throughout the country in coming decades. He said the only way to manage the risks is for Congress to pass legislation that cuts pollution that causes global warming and for the United States to be a world leader on the issue.

Robert Swanson, director of the U.S. Geological Survey Nebraska Science Center in Lincoln, said the report is useful and draws attention to important issues, but cautioned about the clarity of its crystal ball.

There are problems predicting future scenarios, particularly in a study based on a snapshot of a single year and assuming no changes to how much water farmers pump to irrigate crops or how many acres of land they irrigate, Swanson said.

Many factors can change such a business-as-usual assumption, such as land-use practices, fuel costs, legislative controls on water withdrawals and climate, which can trump all of them, he said.

The study involved publicly available 2005 water-use data from across the United States and climate projections for temperature and precipitation from a set of 16 computer models used in recent government work to evaluate water withdrawals related to renewable water supply.

The study found that Nebraska and 13 other states face an extreme or high risk to water sustainability, or are likely to see limitations on water availability as demand exceeds supply by 2050. Iowa mostly is at moderate risk.

The other states with regions at highest risk are Arizona, Arkansas, California, Colorado, Florida, Idaho, Kansas, Mississippi, Montana, Nevada, New Mexico, Oklahoma and Texas.

The Ogallala Aquifer — which is under much of Nebraska and southern Great Plains states — is at extreme risk, according to the report.

The study was conducted by Tetra Tech, a Pasadena, Calif.-based engineering company, for the Natural Resources Defense Council.

Sujoy Roy, the study's lead Tetra Tech engineer and author, said he specifically took a middle-of-the-road path and avoided extreme scenarios. The study assumed irrigation withdrawals would stay at current levels until 2050. It also assumed no change in population or energy growth trends.

The goal of the analysis was to identify regions where potential stresses — and the need to do something about them — may be the greatest, the author said.

Bleed, the former Nebraska water director, said it won't be easy for irrigators to be more efficient.

"The low-hanging fruit of irrigation efficiency has already been tapped in many areas," she said.

Swanson, the USGS director, said it could appear to outsiders that Nebraska used water more efficiently in 2005. Irrigation for crops uses the majority of water pumped in Nebraska.

But Nebraska was experiencing one of the most severe droughts on record in 2005 when federal and state agencies developed their most recent report on the state's water use. Total water use in 2005 was about 400 million gallons per day less than in 2000.

"Surface-water use in much of the state decreased, because it was simply not available," Swanson said.

Anderson, the irrigation district official, said the report should encourage Nebraskans to do a better job of long-range water planning.

“We’re short-sighted,” he said. “It’s wet this year, but we’ll have another drought. It’ll come.”