

While the number of irrigated acres is dropping in many parts of the country, it continues to rise in Nebraska, which now ranks first in the nation.

Some areas of the state are over-irrigated, however, and significant limitations on future irrigation are looming, said Bruce Johnson, University of Nebraska-Lincoln agricultural economist.

By the end of 2007, Nebraska had 8.5 million acres under irrigation, Johnson wrote in the June 10 issue of "Cornhusker Economics." Nebraska added 560,000 acres from 1997 to 2002 and another 930,000 acres between 2002 and 2007.

The most recent U.S. 2007 Census of Agriculture, released in February, shows Nebraska now has more irrigated farmland acres than any other state, accounting for about one of every six acres of U.S. irrigated farmland.

The increase puts certain areas of the state at risk for being over-appropriated, Johnson said. Some 30,000 irrigated acres may have to be changed to dryland acres as a result.

"We have a very precious water resource in this state ... and we're developed pretty much to the max," he said in an interview.

While it is not surprising that Nebraska has been in an irrigation expansion mode for several years, what is surprising is that other major irrigation areas of the country have reduced irrigated acreage, Johnson said.

California, which historically has been first in irrigated acres, dropped 900,000 acres between 1997 and 2007, with the bulk of that decline between 2002 and 2007. Johnson attributed the drop to multiyear drought conditions and an ever-growing demand for water by the state's metropolitan areas. California's irrigation acres stood at 8.2 million in 2007, down from 8.71 million in 2002.

Among other major irrigation states, only Arkansas has experienced consistent growth over time, Johnson said.

Texas, which shares part of the vast Ogallala Aquifer with Nebraska, reduced irrigation on about 750,000 acres between 1997 and 2007 as aquifer levels have declined due to overuse.

Not only does Nebraska's volume of irrigated acreage account for about one of every six acres of irrigated land in the United States, the quality of the state's irrigated agriculture is impressive as well, Johnson said.

Three of every four irrigated acres is under center-pivot irrigation. In 2005, an estimated 52,000 center-pivot systems operated in Nebraska, and that number has only increased, he said.

Nebraska's irrigated acreage is spread across all 93 counties, but considerable variation is seen. Areas of the state not over the Ogallala Aquifer, such as extreme southeast Nebraska, and areas with more marginal cropland like the western Sandhills region, have limited acres under irrigation. In other counties, the majority of cropland is irrigated.

Custer and Lincoln Counties experienced the largest increases in the 10-year time period—61 percent and 56 percent, respectively.

"Although Nebraska is the leading state in irrigation, the state has essentially reached its maximum development limits," Johnson wrote. "Major portions of Nebraska are already designated as either fully appropriated or over-appropriated."

The Nebraska Legislature this year passed a law putting significant restrictions on further groundwater development for irrigation purposes.

"In short, there is no more development frontier," Johnson wrote. "From now on, Nebraskans, from the individual water user up through our policy arena, will need to wisely manage our water

resources for a sustainable future.”