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## **NEBRASKA WATER IS OUR LIFEBLOOD**

About 65 percent of the High Plains Aquifer (also called the Ogallala Aquifer) lies beneath Nebraska and is estimated to contain about two billion acre-feet of water (an acre-foot being enough water to cover one acre of land with a foot of water, or about 326,000 gallons of water). This is equal to about 25 years of the state's average annual stream-flow or about 700 times the average amount of water in its surface water reservoirs. If all the water stored as groundwater in Nebraska were removed, it would cover the state with approximately 40 feet of water. On average in Nebraska, we are using about 8.3 million acre feet of groundwater for irrigation each year.

The surface water picture in Nebraska is even more interesting. Nebraska has nearly 2,000 natural lakes in the Sandhills and Nebraska has more than 5,000 wetlands, including many Saline sites, and over 1,000 reservoirs and sandpit lakes. Nebraska ranks 10th nationally in number of stream miles, including its major river systems, and ranks 16th nationally in total wetland acres.

On average, we receive 90 million acre feet of water as precipitation. Surface water inflows to this state are 2 million acre feet but outflows average 8 million acre feet. Nebraska is a net exporter of surface water by 6 million acre feet a year. In agriculture, we are using 1.5 million acre feet for irrigation from surface water.

Nebraska producers, on average, apply 15 inches of water a year to irrigated crops. I really believe continued improvements such as reduced tillage, no-till, conversion to more efficient irrigation methods such as pivot irrigation, will decrease this number even further. New irrigation management technology, such as local ET gauges and watermark sensors have the potential to save another 1.5 to 2 inches of water on average as proved by 60 producers in the Upper Big Blue NRD this past year.

Agriculture's share of the water pie in Nebraska is significant. When looking at groundwater use with crops, we use 93 percent. Surface water use for crops is 73 percent. Real differences in water savings in Nebraska will need to come from the agricultural sector and is at the forefront during drought years.

As Ben Nelson once said, "Water is the lifeblood of Nebraska," a phrase that is often overused but that's because it is true. In Nebraska, it is water that hangs in the balance. In 2001, 73 of the 85 townships within Chase, Dundy, and Perkins Counties in Nebraska, were designated as "critical." This meant that groundwater levels had dropped so low that special rules were implemented with irrigators. Beginning in the summer of 2003, federal, state, and local scientists began a comprehensive modeling, monitoring, and data collection effort to help decision makers comply with a Supreme Court settlement on water rights between Nebraska and Kansas. Now Nebraska is wrestling with how to balance municipal water needs, irrigation demand, the growth of cattle feedlots and ethanol plants, and requirements for flow regimes in the Platte River to maintain populations of federally listed endangered species.



As suggested at the sorghum meeting at Saline Center, maybe the biggest challenge this spring will be shallower stream beds with additional plant material, meaning ice jams could cause more damage to adjacent agricultural land. The unintended consequence of drought, with more vegetative growth in stream beds, means some rivers are more apt to flood easier now.

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