



University of Nebraska

Nebraska's Natural Resources Districts and Groundwater Governance

A Unique Example of Stakeholders Successfully Managing a Shared Resource

Groundwater is a shared resource, and many aquifers face problems with governance and challenges to sustainability including over pumping, transboundary, endangered species, surface water-groundwater interaction, and water quality and quantity impacts on drinking water supplies.

Water is vital to Nebraska's economy; the state has more irrigated land than any other state in the United States. To support the extensive high-productivity agriculture in Nebraska, almost 100,000 irrigation wells are in use. This possibly represents the largest private investment in irrigation infrastructure in the world, and is supported by several of the largest irrigation companies, equipment dealers, well drillers, irrigation advisors, and other consultants. In parallel, Nebraska has strong regulatory and technical capacity at state and local levels.



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Daugherty Water for Food Global Institute Faculty Fellow and University of Nebraska-Lincoln irrigation engineer Derek Heeren leads a center pivot lab with UNESCO-IHE students at UNL's Agricultural Research and Development Center near Mead, Nebraska.

Most of Nebraska's water comes from the High Plains Aquifer, one of the largest groundwater systems in the world. To meet groundwater management challenges, the state of Nebraska has developed a unique governance system with its Natural Resources Districts (NRDs). Although other states have components of collective groundwater management systems, no similar system currently exists. The University of Nebraska has played an important role in providing the data and training to support this unique system that governs a critical shared resource.

The NRDs, founded in 1972, integrate several key features. They are governed through locally elected boards with the support of technical staff, many trained by the University of Nebraska system and assisted by university-sourced analysis and data. NRDs have the legal authority and willingness to set and enforce rules, including large fines for severe cases of noncompliance. They are provided appropriate funding for their mandate (approximately \$250 million a year across 23 NRDs) and are accountable at the state level.

The public university system provides support for both public and private water management needs in the state. The Conservation and Survey Division of UNL collects and maintains key hydrologic and geologic data, hundreds of university researchers as well as the Nebraska Water Center and Daugherty Water for Food Global Institute provide technical and analytical expertise for the State and for other water stakeholders, and the UNL Extension system provides education and outreach programming statewide that support sustainable water use. Collectively, this complex ecosystem serves to help to maintain food and water security in Nebraska.

Learn more: <http://waterforfood.nebraska.edu/>