

Niobrara River Basin Study

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Reclamation and the State of Nebraska Department of Natural Resources will partner to conduct a Basin Study in the Niobrara watershed in northern Nebraska. The study will develop sound scientific information for use in the management of hydrologically connected ground and surface water resources that are currently fully appropriated. The basin currently supports about 600,000 irrigated acres, including Reclamation's Mirage Flats Project and the Ainsworth Unit, municipal use for 20,000 people, a hydropower facility, the Fort Niobrara National Wildlife Refuge and the 76-mile Niobrara National Scenic River.

The Niobrara River Basin and the underlying High Plains Aquifer are the primary water resources in the watershed. Water shortages in the basin include an 83% reduction in surface water flows to the Mirage Flats Project irrigation deliveries due to periodic droughts and groundwater depletions to streamflow. Shortages to the Spencer Hydropower facility results in junior surface water appropriators being closed. And recent drought conditions impacted water use on the Scenic River that supports recreation activities that are a key component of local economies. These conflicts may be intensified by the impacts of climate change.

The study will:

- characterize and quantify the ground and surface water resources of the basin;
- determine current and future water needs;
- develop a hydrologic model of the hydrologically connected ground and surface water system;
- evaluate opportunities for meeting needs through structural and nonstructural means, including surface and aquifer storage and retiming, and water banking;
- model the potential effects of climate change on future water supplies; and
- provide information for the State to identify adaptation / mitigation strategies and develop Integrated Resource Plans for the basin.

The study partners will engage basin stakeholders in the study process.

The total cost of the study is \$850,000 (59% State-41% Federal cost share).

