

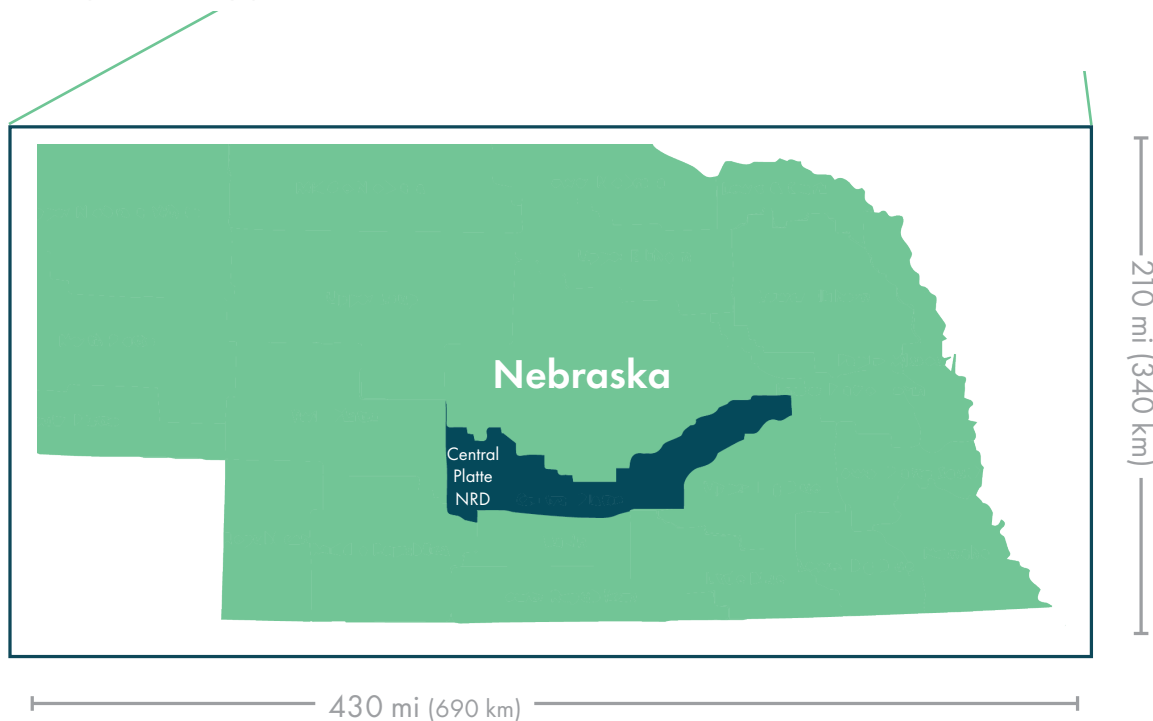
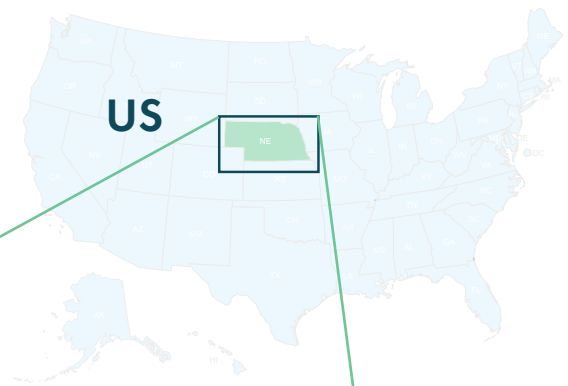
TRANSFERRING GROUNDWATER IN THE HIGH PLAINS

Central Platte Natural Resources District, Nebraska



THE DAUGHERTY
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- ▶ The Central Platte Natural Resources District (CPNRD) manages groundwater use for crop irrigation to ensure the long-term sustainability of its supply. The CPNRD is accountable for the impacts of groundwater pumping on streamflow governed by a large-scale endangered species program. The district also seeks to prevent long-term groundwater depletion.
- ▶ CPNRD restricts groundwater use for irrigation by imposing a well drilling moratorium and measuring static water levels. Groundwater allocation and metering systems are not currently enforced in the district. Groundwater pumping rights must be obtained via transfer before new land can be irrigated.
- ▶ Growers can formally transfer their groundwater pumping rights separately to land ownership. To be approved, groundwater transfers must be determined to have no net negative impacts on streamflow. Some change to the amount of groundwater pumping rights transferred is needed to adjust for expected net impact resulting from the transfer.
- ▶ The frequency and size of formal groundwater transfers vary greatly. Transaction costs include fees associated with the formal transfer application and, if a transfer is higher than a specified threshold, a property title search. Transaction size can depend on the irrigation technology used (e.g., a transition to full center pivot). Groundwater transfer activity appears to be positively correlated with crop commodity prices.





BACKGROUND

CPNRD, in central Nebraska, receives an average of 18-26 inches of rainfall per year. There are 1,029,213 irrigated agricultural acres. Of these, 937,674 acres are irrigated solely with groundwater, 14,359 acres use surface water, and the rest use a mix of surface water and groundwater. The main crops grown in the area are corn, soybeans, and alfalfa. There are approximately 19,000 active wells in the district, of which about 600 are measured for static water levels in spring and fall. CPNRD requires to obtain groundwater pumping rights via transfer before starting to irrigate new agricultural land, and there is a well drilling moratorium. The district helps meet the streamflow goals set by the Platte River Recovery Implementation Program.



GROUNDWATER TRANSFERS

The groundwater transfer process in CPNRD begins with a discussion between an applicant and CPNRD staff to determine whether a proposed transfer would meet the district's key requirements. If they are met, an applicant can submit a groundwater transfer request which requires a \$200 payment to cover administrative costs. Transfers must be at least one acre. All transfers that exceed 4 acres require a property title search with the Registrar of Deeds and consent of any lienholder. When transfer filing involves multiple counties, transaction costs increase by an additional \$50. Transfer size in CPNRD varies between 7 and 140 acres, which corresponds to the sizes of a corner lot that a center pivot can't reach and a full center pivot. Transfer activity in CPNRD fluctuates between 5 and 200 transfers per year, but there are typically more than 100 transfers each year. The higher number of transfers corresponds to higher corn and soybean prices. Most of those transfers are between irrigators. Groundwater transfers for cattle feedlots and industry also happen on occasion. Groundwater transfers in the district are approved by CPNRD staff.



TRANSFER DIRECTION & BOUNDARIES

In CPNRD, groundwater can't be transferred between river basins, and the transfer can't have an impact on another river basin. Within the Platte River Basin, there are restrictions on the purchase of water rights based on an assessment of sustainable irrigated area and transfers aren't allowed to some areas (e.g., over-appropriated area above Elm Creek). If the transfer doesn't lead to lower or higher streamflow depletion based on CPNRD's data, no adjustment is made to the amount of water transferred. Generally, based on CPNRD's hydrogeology, to protect streamflow, groundwater pumping rights can be transferred westward from an originating well if the distance doesn't exceed one mile. The distance is not limited when transferring groundwater in any other direction. The amount of groundwater pumping rights that are transferred is adjusted so that no net change in impact on streamflow occurs. The exact adjustment is determined on a case-by-case basis. Due to the adjustments, it is less expensive to transfer groundwater away from the stream (from higher to lower streamflow depletion areas) than to transfer groundwater towards the stream (from lower to higher streamflow depletion areas).



OTHER POINTS OF INTEREST

(i) CPNRD was the first NRD in Nebraska to create a water bank system to address sustainability challenges in some of their Platte River watershed areas, which helps protect species dependent on river flows as well as municipal and agricultural well fields. It is done through regulation and acquisition of groundwater and surface water rights from willing sellers within the district. (ii) Growers who can legally irrigate with both groundwater and surface water ("commingled") on their property are able to transfer their water, but these transfers are very infrequent. They would need to be co-administered by the State of Nebraska Department of Natural Resources (NeDNR) and relevant irrigation districts, because surface water is not overseen by the Natural Resources Districts. (iii) In 2015, CPNRD partnered with private irrigation canal companies and NeDNR to rehabilitate four surface water canals, which resulted in better surface water irrigation, excess flows management, and groundwater recharge.

Transfer means a change in the groundwater use location, purpose, or point of withdrawal.

A **formal transfer** is a transfer of a property right. In CPNRD, formal transfers of groundwater rights between wells are called "transfers."

An **informal transfer** is a reallocation of water across space/time without transfer of a property right. Informal transfers, often called "pooling," allow joint operation of two or more irrigated tracts. In CPNRD, there are no such informal transfers.

Transfer direction must be considered when there are concerns about impacts of groundwater pumping on streamflow.

Transfer boundaries define the area within which groundwater can be transferred.

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