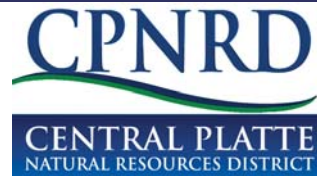


# KNOW YOUR NRD



Nebraska's Natural Resources Districts  
Making the Good Life Better Since 1972

Summer 2016

## NRD QUICK FACTS:

Central Platte NRD manages natural resources for all or parts of 11 counties along the Platte River.

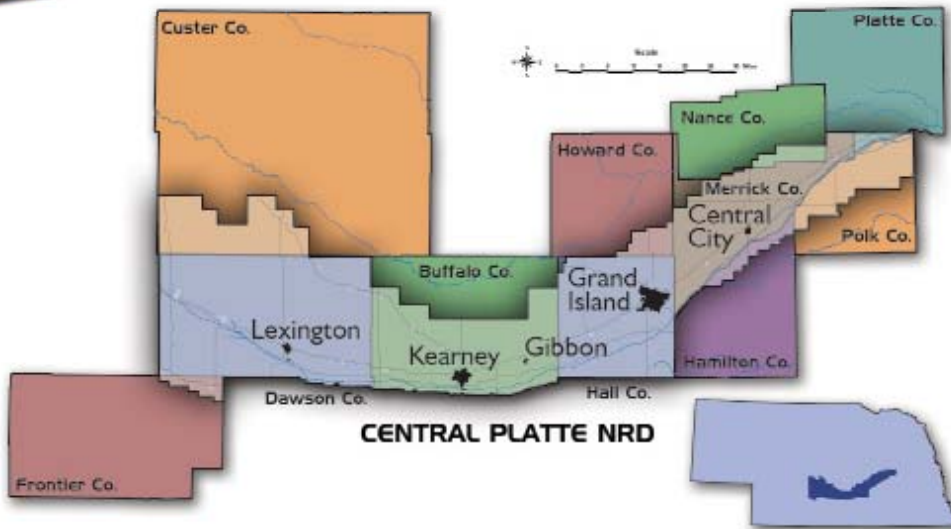
### RIVER SYSTEM

- Platte River: 205 miles
- North Channel: 49.9 mile
- Wood River: 173 miles

### GROUNDWATER MANAGEMENT

- 1,028,044 irrigated acres
- 936,544 groundwater only
- 14,315 surface water only
- 77,175 co-mingled use

- 575 wells monitored each spring & fall for water levels.
- 1/3 of those wells monitored for nitrates for water quality.



Protecting Lives

Protecting Property

Protecting the Future

### Groundwater Exchange Debut

 CPNRD's Groundwater Exchange is the first of its kind to allow temporary leasing of groundwater. The Exchange allows producers to buy or sell water, on a temporary leasing basis, for the upcoming irrigation season. CPNRD's Rules & Regs regarding transfers of groundwater irrigated acres are built into the computer program. Bids are based on consumptive use and stream-flow depletion to the Platte River. Pre-approved buyers/sellers go online to place their asking price to temporarily lease their water or place bids to buy water. The first transactions were approved in April 2016. Sellers placed 30 locations online for leasing, with six buyers placing bids- three for irrigation and three for streamflow rights. The computer program matched the three irrigation bids with sellers. A second exchange will held in 2016-2017 and will include the area of the Loup Basin influence. For more information, visit: [www.market4water.com](http://www.market4water.com).

### Phragmites Control Successful

The Central Valley Phragmites Project; which began in 2008, has been successful in clearing phragmites along the Platte River.

As of April 2016, there had been 32,300 acres cleared successfully. Recent funding acquired will allow a maintenance program to continue to treat the Eurasian invasive species.

The project includes 700 landowners who participate in herbicide spraying by helicopter and/or manual spraying of property along the Platte River from Kingsley Dam in Keith County east to Columbus, NE in the Platte and Central Valley Weed Management Areas.

Central Platte NRD has provided over \$400,000 towards the project since it began. Other sponsors include the Nebraska Environmental Trust, Platte River Recovery Implementation Program, Nebraska Department of Agriculture, Tri-Basin NRD, and Central Nebraska Public Power and Irrigation District.

### Protecting Water Quality

In 2016, parts of southern Hall and northern Hamilton counties, south of the Platte River, were transferred from Phase I to Phase II Groundwater Management Area due to increasing nitrate levels. CPNRD's Groundwater Quality Rules & Regs require areas with nitrate level concentrations of 7.6 to 15 ppm to be placed in a Phase II area; requiring landowners to submit annual reports including water and soil tests.

Additional nitrate testing is being conducted with UNL to revisit 27 vadose zone core sites originally collected in the 1990s. Additional cores will characterize nitrate storage and estimated transport rates to the water table. Determination of water retention properties and hydraulic conductivity of undisturbed cores will help estimate the rate of travel of nitrate concentration at new sites; and ultimately evaluate land use practices on nitrate movement to the water table.

### Online Reporting Forms Helpful for Producers

GIS Workshop developed a new system for producers to fill out their annual Groundwater Management forms online. Producers benefit by having all past information in one location. Upon logging in, producers use their User ID and may log in throughout the year to record their water and soil test results, and their actual yields prior to submitting the form. The system significantly reduces the amount of administrative time it took staff to manually enter the 6,000-7,000 forms submitted each year, and streamlines the process of generating letters and reports. Meetings were held across the District to show producers how to use the new online form.

This new site also provides public access to scanned documents that show the number of irrigated acres for all landowners in the District, infrared imagery taken by the NRD and all registered wells. Users may search information for specific parcels of land by using the clickable map interface or by searching the site by landowner or tenant name, legal description or field ID number. The site also allows landowners to view and print aerial photos taken by the District to show how their land has developed since 2003 and view any improvements that have been made. New search options, drawing tools for landowners to create their own proposed transfer maps and printable maps were added in 2015. The public and staff sites are linked, so all information is simultaneously updated and reduces the time it takes to complete water transfers and other changes. Website is located at: [cpnrd.gisworkshop.com](http://cpnrd.gisworkshop.com).

### Conjunctive Water Management

The rehabilitation of three surface water canals in Dawson County were completed in 2015. The Cozad, Thirty Mile, and Southside canals will continue to be used for surface water irrigation delivery; as well as for retiming Platte River flows to enhance target flows for endangered species. Water rights for diverting excess flow for recharge were granted to the canal systems by the Nebraska Department of Natural Resources and temporary transfer permits for returning surface water to the river for in stream use have been approved. Excess Platte River was diverted in 2011, 2013, 2014, 2015 and 2016. The total diverted in 2015 by the three canals was 37,359 acre/feet and the computed recharge was 23,883 acre/feet. The return to the River is computed to will be 80-90 acre/feet per month.



Photo: Attendees view headgates during the Southside Rededication tour in August 2015.

### Lake Helen Completed

CPNRD provided \$75,000 towards the restoration of Lake Helen in Gothenburg, NE to improve water quality and habitat conditions. The lake was drained to excavate 171,773 cubic yards of sediment and stabilize 3,391 linear feet of shoreline. Underwater shoals were developed and a circulation system was installed. Sediment and nutrient loading from outside the lake boundary were addressed by treating the lake with aluminum sulfate to precipitate phosphorus, installing a deeper well to access lower phosphorus water and stocking recreational fish. Recreational improvements included dam repair, installation of a pier and boat ramp.

The total cost of the project was nearly \$1.8 million. A ribbon cutting ceremony (photo on right) was held in May 2016.



## PROJECT SENSE

CPNRD participates in UNL's Project SENSE: Sensors for Efficient Nitrogen Use & Stewardship of Environment. This pilot program promotes in-season nitrogen fertilization for corn to improve the efficiency of nitrogen fertilizer applications through the use of canopy sensors. Results from 2015 plots showed that the crop canopy sensor management saved 40 pounds of N per acre, saving producers \$10.35 per acre on average. Annual field days are held to update the public and producers. Other participants include Upper Big Blue, Lower Platte South, Lower Platte North, and Lower Loup NRDs; NRCS & Nebraska Corn Board.

## COVER CROPS

Producers in the CPNRD are working with the UNL Extension to research the effects of cover crops on soil health. Field days are held annually to show crop mixes planted on different dates and to compare aboveground biomass with below ground.

Research includes:

- If compaction and infiltration are impacted.
- How biological activity & organic matter are affected.
- Which mixes provide highest quality forage for grazing.
- How much crop usable nitrogen can be expected.

Partners include UNL, USDA-NRCS, CPNRD, Arrow Seed, Green Cover Seed and O'Hanlon Seed Inc.

## EDUCATION

CPNRD provides staff and/or funding for over a dozen youth and adult educational programs annually.