



Fall 2021

Volume 35, Issue 4

# Tri-Basin Topics

A quarterly publication of Tri-Basin Natural Resources District

## 2021 Annual Report

## and Long-Range Plan

### Tri-Basin NRD Vision

The vision (overall goal) for Tri-Basin NRD is to "work cooperatively with District residents to promote good stewardship of land and water resources."

### Tri-Basin NRD Mission

Tri-Basin NRD's mission is to "manage, conserve and protect the District's land and water resources." This mission will be accomplished by protecting the quality and quantity of surface water and groundwater, reducing soil erosion and flooding, promoting agricultural best management practices, forestry and wildlife habitat preservation. These tasks can only be accomplished by working cooperatively with local residents and agencies of local, state and federal government.

### Protecting Groundwater Supplies

Protecting and managing groundwater supplies is one of the most important jobs we do at Tri-Basin NRD. Our groundwater management goal is to ensure that "all groundwater supplies within the Tri-Basin NRD will be used in a beneficial manner, efficiently managed and properly utilized to preserve this vital resource forever." Achieving that lofty goal is made more difficult by the variability of weather on the Great Plains. Just in the past decade we have seen extremely wet (2019) and dry years (2012).

Because our climate is so unpredictable, the Tri-Basin NRD Board of Directors started working with the State of Nebraska and Central Nebraska Public Power and Irrigation District (CNPPID) back in 2006 to divert excess flows from the Platte when they occur and allow that water to soak into the ground. It seeps down into our aquifers, stored until irrigators need it during a drought. We have diverted nearly 121,000 acre-feet of water in the past fifteen years to ensure that our groundwater supplies remain viable, even during extreme drought.

Tri-Basin is also required to replace groundwater that gets pumped by our irrigators, to the extent that it reduces streamflows in the Platte and Republican Rivers and their tributaries. The district currently operates three augmentation wells when needed to help sustain streamflows in the Platte and Republican River basins. We are also working cooperatively with Lower Republican NRD and Central NE Public Power and Irrigation District (CNPPID) to develop the Platte-Republican diversion. This project will enable us to divert water from the Platte when there are high flows that exceed levels necessary for all other water users. We want to transport that water through CNPPID's canal system to Turkey Creek, a tributary of the Republican River. Platte flows diverted into the Republican basin are counted as "imported water" in the Republican River Compact calculations, so water that would otherwise flow down the Platte unused will help Nebraska fulfill our obligation to provide water to the state of Kansas.

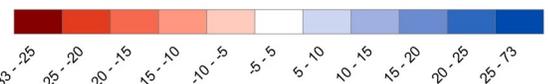
Tri-Basin NRD is always looking for ways to help our irrigators improve their efficiency, so our agricultural economy and our drinking water supplies will be assured for the foreseeable future.

Tri-Basin's Water Conservation Incentive Program (WCIP) began in 2019. It rewards participating producers that are willing to limit their groundwater use. A second WCIP option is targeted at CNPPID customers, encouraging them to use canal water to the extent possible, even when they also have groundwater wells. The NRD board uses a ranking system to

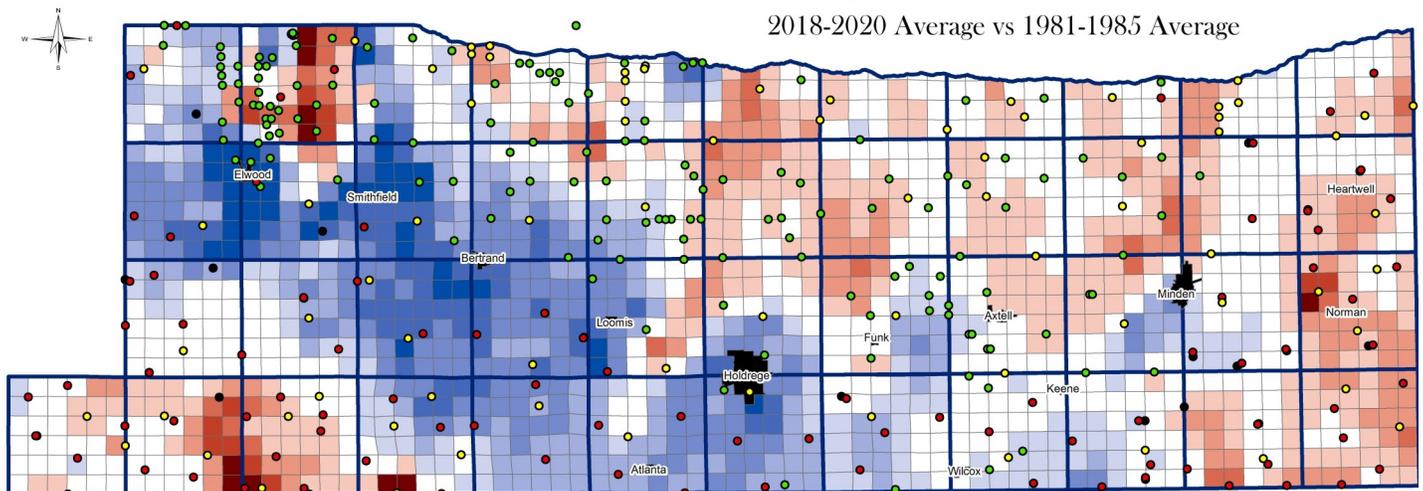
#### Well

- CNPPID
- Irrigation
- Observation
- Abandoned

#### Groundwater Elevation Change in Feet



2018-2020 Average vs 1981-1985 Average



determine which WCIP applications will provide the greatest benefit. Landowners have enrolled 1836.96 groundwater acres and 3071.20 commingled acres in WCIP through the 2021 crop year.

Tri-Basin's board needs data to make timely and accurate decisions about groundwater management. The district started measuring groundwater levels in 1977, building on groundwater data collected by CNPPID and the University of Nebraska as far back as 1939. We now have a network of more than 200 irrigation wells and 120 dedicated observation wells that are measured at least twice yearly by NRD staff. Most dedicated observation wells also have automated sensors that record groundwater levels twice a day. This vast amount of water level data enables us to create detailed groundwater level change maps like the one shown below.

Making sure future generations have an adequate supply of water is an important part of the mission of Tri-Basin NRD. We regularly measure our aquifers in order to track trends in our groundwater supplies. Tri-Basin NRD monitors groundwater levels through an extensive network of dedicated observation wells, with at least one well in each township in the



New observation well being drilled in the district.

district. These wells have automated sensors that measure groundwater levels twice a day. Detailed data on groundwater level trends is vital to NRD directors as they consider how to manage groundwater supplies to ensure their sustainability.

Groundwater levels district-wide declined 0.54' on average from Spring 2020 to Spring 2021. These declines came after a 1.84' average groundwater level rise between 2019 and 2020.

Local groundwater declines prompted Tri-Basin NRD directors to enforce groundwater pumping limits in Union Township (5N-

22W), Gosper County in 2009 to protect the declining groundwater supply there. More recently, directors became concerned about declining groundwater levels in May Township in Kearney County (6N-13W), Elk Creek Township in Gosper County (5N-23W), and Grant Township in Kearney County (5N-13W). These townships are designated as Phase Two for groundwater quantity management. Tri-Basin NRD takes a proactive approach to groundwater management. It is our expectation that taking action now will arrest groundwater declines and preclude the need for additional restrictions.

### Protecting the Quality of Groundwater

TBNRD has regulated fertilizer application to protect groundwater quality since 1989. District staff work cooperatively

with farmers and agronomists to help improve the timeliness, efficiency, and effectiveness of fertilizer application. This has resulted in stable or declining nitrate-nitrogen levels in groundwater supplies throughout the district.

- 257 irrigation wells tested for nitrate levels in 2021

### 2021 Irrigation Water Management Forms

If you would like to have your reports mailed to you, call Tri-Basin NRD at 308-995-6688.

Reports due November 17, 2021.

Tri-Basin NRD staff protects groundwater supplies from contamination by permitting chemigation, the process of applying fertilizer and ag chemicals through irrigation systems. This process allows farmers to "spoon feed" fertilizer to their crops as it is needed and reduces nitrogen leaching below the crop root zone into the aquifer. In 2021, Tri-Basin NRD issued:

- 112 new chemigation permits
- 2,273 renewal permits
- 782 inspections of chemigation safety devices

### Attention Chemigators:

*Remember to drain your main line check valve to prevent freezing. This will extend the life of the check valve and may help prevent check valve failure.*

### Preparing for Disasters

Tri-Basin NRD has assisted Two Rivers Public Health Department by receiving, storing, sorting and distributing over 125,000 pounds of Personal Protective Equipment (PPE) during the COVID-19 Pandemic. This essential job helps get medical supplies where these are needed. PPE is distributed to nursing homes, doctor's offices, dentists, hospitals, fire and police departments, etc. who need these supplies to keep their personnel and patients safe during this pandemic.

- Residents protected: 17,549

### Planting Trees for Future Generations

Tri-Basin NRD sells conservation trees and shrubs for windbreak and habitat plantings. The district also provides hundreds of free tree seedlings for educational events and local Arbor Day celebrations. Tri-Basin staff help landowners diagnose tree diseases and fungal blights and decide on treatment methods.



| Tri-Basin NRD Conservation Tree Sales |       |       |       |       |       |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                       | 2014  | 2015  | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  |
| Contractor-Planted                    | 2,824 | 6,644 | 3,826 | 4,361 | 5,726 | 3,205 | 1,581 | 2,825 |
| Hand-Plant                            | 3,017 | 1,804 | 2,064 | 2,080 | 2,225 | 3,853 | 2,307 | 2,890 |

## Providing Conservation Cost-share

Tri-Basin NRD provides and administers cost-share funds for many soil and water conservation practices, including well decommissioning, soil moisture sensors, irrigation well flowmeters, conservation tree plantings and conversion of irrigated cropland to dryland cropland and grassland.

Fiscal year 2020-2021 cost-share paid:

- \$26,484.52 for locally-funded conservation tree plantings
- \$30,241.48 state-funded NSWCP for conservation practices
- \$19,813.80 well decommissioning cost-share using state and local funds

## Managing Financial Resources Wisely

- Total operating expense budget: \$4,080,304.52 (July 1, 2020 to June 30, 2021)
- Tax levy set at .022353 per \$100 valuation

**An owner of a house valued at \$100,000 will pay just \$22.36 in 2021 to protect this area's natural resources.**

## Ensuring Rural Domestic Water Quality



Tri-Basin NRD wants rural residents in Gosper, Phelps, and Kearney Counties to have drinking water that is as safe as public water supplies. Any district resident who uses a rural household water well can ask NRD staff to sample their well once per year at no charge; the sample will be tested for nitrates and bacteria. For more information on this program, contact Tri-Basin NRD at (308) 995-6688.

- Domestic wells tested in 2020-2021: 11

## Educating about Natural Resources

It is important to inform students as well as adults about the need to conserve and protect our natural resources. Tri-Basin holds many events during the year. We are looking forward to our upcoming events and we will implement precautions to help ensure public safety.

- South Central Water Conference: Presented in cooperation with CNPPID and Lower Republican NRD. Agricultural producers and agri-business professionals met to discuss current water issues in February at the Phelps County Ag Center and also virtually.

- Natural Resources Report: A weekly update on natural resources issues every Wednesday at 4:17 p.m. on KRVN 880 AM radio.

- Land Judging Contest: Tri-Basin hosted the State contest with cooperation from other agencies to hold the land evaluation contest for FFA students.

- In person Nitrogen Management Classes for producers

- Rainwater Basin Conservation Day at Sacramento WMA for eighth grade students

- Tri-Basin, with cooperation from other agen-



cies, hosted the land evaluation contest for FFA students.

- Water Jamboree is a collaborative event for fifth and sixth grade students. Hosted 8 schools at Harlan County Lake
- Adventure Camp about the Environment is an NRD sponsored natural resources camp. Six scholarships were awarded and 12 attended from the district

## About Tri-Basin Natural Resources District

Tri-Basin Natural Resources District (NRD) protects lives, property, and the future of Gosper, Phelps, and Kearney counties through a wide-range of stewardship, management, and education programs—from tree planting to groundwater quality and quantity monitoring, from irrigation management to outdoor recreation and more. Activities and projects of Tri-Basin NRD are reviewed and approved by a locally elected board of directors. Tri-Basin NRD is one of 23 Natural Resource Districts across the state. For more information, visit [tribasinrd.org](http://tribasinrd.org) or call (308) 995-6688.

### 2020 Active Irrigation Wells

| County            | Total Irrigation Wells | Certified Irrigated Acres |
|-------------------|------------------------|---------------------------|
| Kearney County    | 2,117                  | 228,647.64                |
| Phelps County     | 2,176                  | 258,473.58                |
| Gosper County     | 758                    | 93,453.71                 |
| Total             | 5,051                  | 580,574.93                |
| Basin             | Total Irrigation Wells | Certified Irrigated Acres |
| Republican Basin  | 1,616                  | 190,134.46                |
| Platte Basin      | 2,611                  | 298,804.07                |
| Little Blue Basin | 824                    | 91,636.40                 |
| Total             | 5,051                  | 580,574.93                |

### Average Irrigation Water Use in the Republican Basin\* Portion of TBNRD

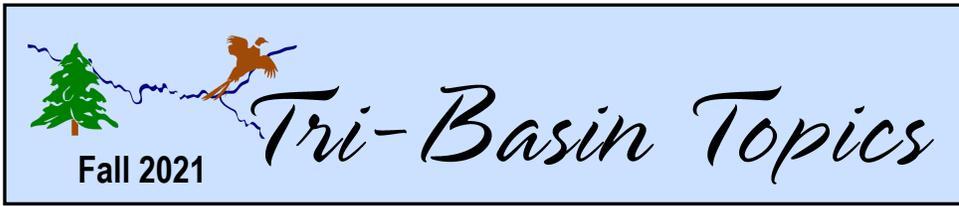


\*All Republican Basin irrigation wells are metered. Metered water use is also reported from a limited number of wells in the Platte and Little Blue Basins. Data updated February 8, 2021.

## TBNRD Staff to Inspect Flow Meters

Each year, NRD staff inspect and take readings from meters in about one-third of the townships in the District. This year we will be doing inspections in Ranges 14W, 18W, and 22W, and in 5-22 of Gosper County (Union Township).

If you have irrigation wells in these townships and you put your meters in storage for the winter, you can call Tri-Basin NRD at 1-877-995-6688 to schedule an inspection. If there is no meter at the site when TBNRD staff come to inspect, you will receive a letter requesting access to the meter for inspection.



**Tri-Basin Natural Resources District**  
 1723 Burlington St. Holdrege, NE 68949  
 (308) 995-6688  
 email: [tribasin@tribasinprd.org](mailto:tribasin@tribasinprd.org)  
[www.tribasinprd.org](http://www.tribasinprd.org)

**RETURN SERVICE REQUESTED**

*Nebraska's NRDs: Protecting Lives, Protecting Property, Protecting the Future*

# Calendar

November 9 .....NRD Board Meeting, 7:30 p.m.\*  
 November 11 ..... NRD Closed for Veteran's Day  
 November 25-26 .....NRD Closed for Thanksgiving  
 December 14 .....NRD Board Meeting, 1:30 p.m.\*  
 December 24 .....NRD Closed for Christmas  
 December 31 ..... NRD Closed for New Year's  
 January 11 .....NRD Board Meeting, 1:30 p.m.\*  
 January 17...NRD Closed for Martin Luther King Jr Day  
 TBD..... South Central Water Conference  
 February 8.....NRD Board Meeting, 1:30 p.m.\*

\* Times are tentative. All meetings are at TBNRD office in Holdrege unless otherwise noted.

**TRI-BASIN NRD BOARD OF DIRECTORS**

Bradley Lundeen, Chairman ..... Wilcox  
 Todd Garrelts, Vice Chairman ..... Holdrege  
 Robin Hinrichs, Treasurer ..... Axtell  
 Joe Bilka, Secretary ..... Holdrege  
 Brian Bergstrom ..... Axtell  
 Mike Cavanaugh ..... Minden  
 David Grimes ..... Minden  
 Ed Harris ..... Loomis  
 Joe Larson ..... Loomis  
 Reed Phillips ..... Bertrand  
 David Raffety ..... Kearney  
 Larry Reynolds ..... Lexington  
 Jeff Ryan ..... Heartwell

**TRI-BASIN NRD STAFF**

Amy Dutton ..... Minden Office Secretary  
 Tammy Fahrenbruch ..... Water Programs Coordinator  
 Lori Hagan ..... Office Clerk  
 Sasha Hahn ..... Information & Education Coordinator  
 Nolan Little ..... Water Resources Manager  
 Carie Lynch ..... Administrative Secretary  
 Nate Munter ..... Land Resources Coordinator  
 Patrick Nott ..... Water Resources Technician  
 Nancy Pemberton ..... Elwood Office Secretary  
 Tami Reese ..... Holdrege Office Secretary  
 Dalton Refior ..... Land Resources Technician  
 Esther Smith ..... Office Assistant  
 John Thorburn ..... General Manager  
 Jeff VanEperen ..... Water Resources Technician

A mailing list is maintained and requests to be placed on the list should be sent to the above address. Comments and suggestions may be addressed to the General Manager.

***Get Tri-Basin Topics in your inbox instead of your mailbox!***  
 To receive the electronic version of this newsletter, request by email to [shahn@tribasinprd.org](mailto:shahn@tribasinprd.org).