

Fall 2020

Volume 34, Issue 4

Tri-Basin Topics

A quarterly publication of Tri-Basin Natural Resources District

2020 Annual Report

and Long-Range Plan

2020 Groundwater Levels

Rainfall last year was one for the record books. Big storms in March and July, with numerous smaller rains in between, resulted in large rises in groundwater levels across Tri-Basin NRD. This year is almost a complete opposite-little rainfall with much summer heat. Irrigators were forced to run their pumps regularly to sustain their crops. These climatic extremes are not unusual in Nebraska. For instance, wet weather in 2010 and 2011 was followed by extreme drought in 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.

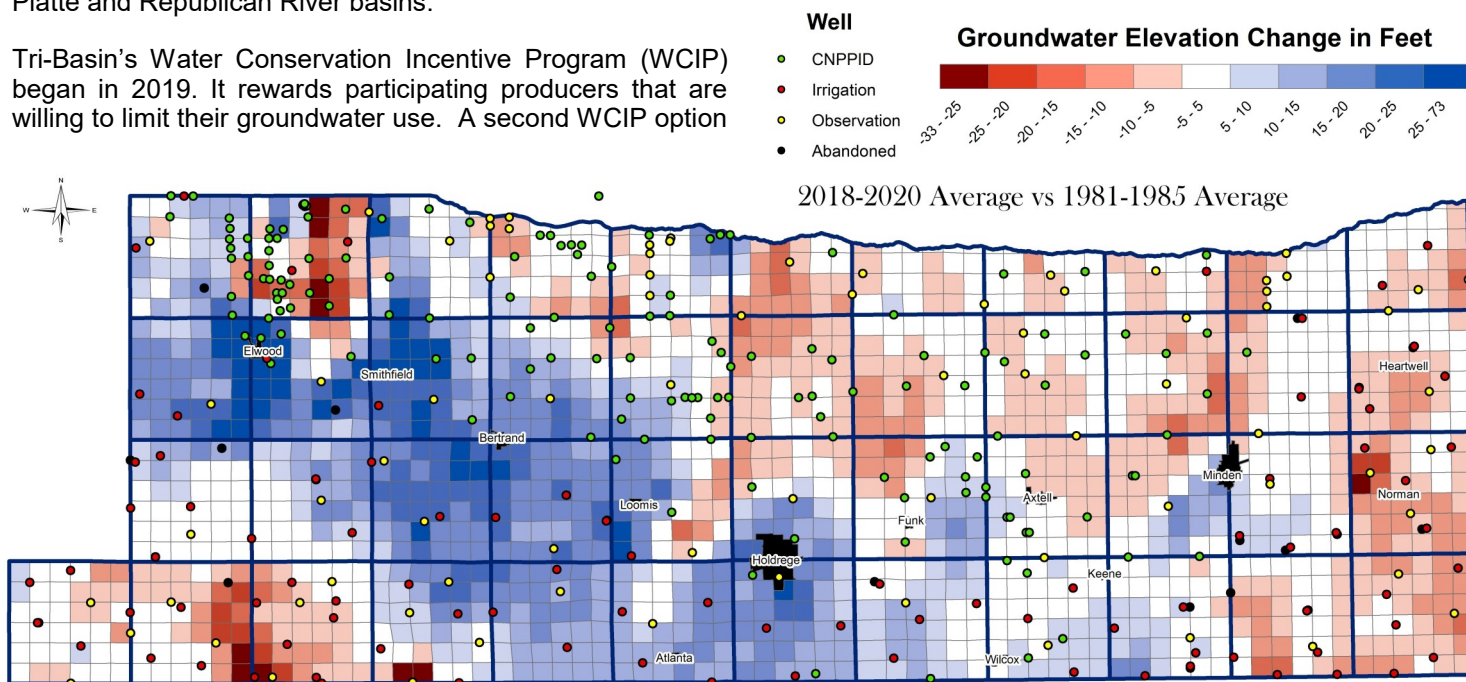
Tri-Basin is also required to replace groundwater that gets pumped by our irrigators, to the extent that it reduces streamflows in the Platte and Republican Rivers and their tributaries. The district currently operates three augmentation wells when needed to help sustain streamflows in the Platte and Republican River basins.

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 determine which WCIP applications will provide the greatest benefit.

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.

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.



2020 Irrigation Water Management Forms

If you would like to have your reports mailed to you, call our office at 1-877-995-6688.

(All forms will be by November 1st.)

Reports due November 17, 2020.

Protecting groundwater supplies

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 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.

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, with the hope that associated restrictions 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.

- 260 irrigation wells tested for nitrate levels in 2019



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

Nolan Little, Tri-Basin NRD Water Resources Manager, inspecting a chemigation injection site.

to their crops as it is needed and reduces nitrogen leaching below the crop root zone into the aquifer.

- 132 new chemigation permits
- 2,189 renewal permits
- 878 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, along with Phelps, Gosper and Kearney Counties, developed and regularly update a district-wide Hazard Mitigation Plan. The plan outlines steps that would be taken in an emergency. The Federal Emergency Management Agency (FEMA) requires local governments to have a Hazard Mitigation Plan before it will provide federal disaster relief funding.

- Residents protected: 17,721

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								
	2012	2013	2014	2015	2016	2017	2018	2019
Contractor-Planted	2,199	2,824	6,644	3,826	4,361	5,726	3,205	1,581
Hand-Plant	2,266	3,017	1,804	2,064	2,080	2,225	3,853	2,307

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 2019-2020 cost-share paid:

- \$13,313.88 locally-funded conservation tree planting
- \$28,039.51 state-funded NSWCP for conservation practices
- \$7,073.50 well decommissioning cost-share using state and local funds

Managing Financial Resources Wisely

- Total operating expense budget: \$1,505,365.44 (July 1, 2020 to June 30, 2021)
- Tax levy set at .022042 per \$100 valuation

An owner of a house valued at \$100,000 will pay just \$22.05 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 2019-2020: 5

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. In 2020 many of these events were cancelled due to safety concerns related to COVID-19. We are looking forward to our upcoming events and are planning to implement precautions to help ensure public safety. Activities with an asterisk were cancelled in 2020.

- South Central Water Conference: Presented in cooperation with CNPPID and Lower Republican NRD. Over 100 agricultural producers and agri-business professionals meet to discuss current water issues in February at the Phelps County Ag Center.
- 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 cooperates with other agencies to hold the annual land evaluation contest for FFA students.

- * In person Nitrogen Management Classes for producers

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



- * Water Jamboree is a collaborative event for over 500 area fifth grade students at Harlan County Lake.
- * Adventure Camp about the Environment is an NRD sponsored natural resources camp.

About Tri-Basin NRD

Nebraska's Natural Resources Districts (NRDs) were established in 1972 to protect our natural resources through locally elected officials. It is unique to Nebraska.

Tri-Basin NRD:

- Serves three counties: Gosper, Phelps, and Kearney
- Includes parts of three river basins: Republican, Platte, and Little Blue
- Governed by thirteen local directors.

2019 Active Irrigation Wells

County	Total Irrigation Wells	Certified Irrigated Acres
Kearney County	2,117	228,614.64
Phelps County	2,176	258,505.17
Gosper County	758	93,346.15
Total	5,051	580,465.96
Basin	Total Irrigation Wells	Certified Irrigated Acres
Republican Basin	1,616	190,299.74
Platte Basin	2,611	298,529.82
Little Blue Basin	824	91,636.40
Total	5,051	580,465.96

Republican Basin Water Use*

	Pivot	Gravity	Pivot & Gravity	Drip Tape	Weighted Average
2010	5.05	8.62	5.31		5.82
2011	6.63	10.86	7.20		7.57
2012	13.88	21.33	14.28		15.36
2013	12.46	22.84	15.05		14.25
2014	6.11	11.34	6.54	7.60	6.72
2015	8.28	15.79	9.39	12.17	9.3
2016	9.85	18.42	10.96	10.15	10.88
2017	7.18	14.16	8.11	8.34	7.88
2018	5.07	11.29	5.29	5.69	5.52
2019	4.62	10.06	5.05	5.76	5.05

*All Republican Basin irrigation wells are metered. Metered water use is also reported from wells in the Platte and Little Blue Basins. Data updated February 18, 2020.

TBNRD Staff to Inspect Meters

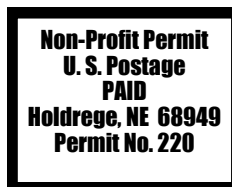
Each year, NRD staff inspect and take readings from meters in about one-third of the townships in the District. This year we will be doing inspections in Ranges 13W, 17W, and 21W, and in 5-22 of Gosper County (Union Township).

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.



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Tri-Basin Natural Resources District
1723 Burlington St. Holdrege, NE 68949
(308) 995-6688
email: tribasin@tribasinncrd.org
www.tribasinncrd.org

RETURN SERVICE REQUESTED

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

CALENDAR

November 10..... NRD Board Meeting, 7:30 p.m.*
November 11..... NRD Closed for Veteran's Day
November 26-27.....NRD Closed for Thanksgiving
December 8..... NRD Board Meeting, 1:30 p.m.*
December 25..... NRD Closed for Christmas
January 1 NRD Closed for New Year's
January 12 NRD Board Meeting, 1:30 p.m.*
TBD.....South Central Water Conference
February 9 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
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@tribasinncrd.org.