

Fall 2011

Volume 25, Issue 4

# Tri-Basin Topics

A quarterly publication of Tri-Basin Natural Resources District

## 2011 *In Review* Annual Report

### **About Tri-Basin Natural Resources District**

Tri-Basin Natural Resources District is the local government agency which is responsible for protection of natural resources in Gosper, Phelps and Kearney Counties in South Central Nebraska. Tri-Basin NRD is unique among Nebraska's 23 NRDs because it includes portions of three different river basins: the Republican, the Platte, and the Little Blue Basin. There are 13 members of TBNRD's Board of Directors, 12 of whom are elected from designated sub-districts and one at-large member. The vision of Tri-Basin NRD, as set forth by these directors, is to work cooperatively with District residents and others to promote good stewardship of land and water resources.

Tri-Basin NRD operates a district-wide Groundwater Management Area to protect groundwater quality and quantity. The NRD has regulated fertilizer application to protect groundwater quality since 1989. District staff have worked cooperatively with farmers and agronomists for more than 20 years to help improve the timeliness, efficiency and effectiveness of fertilizer application. These efforts have resulted in stable or declining nitrate-nitrogen levels in groundwater supplies throughout the district.

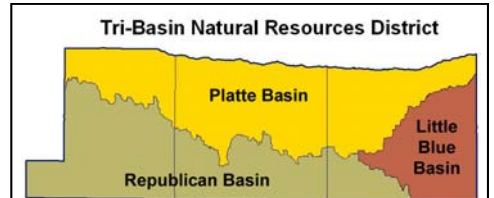


*Tri-Basin NRD Staff and Equipment, August 2011*

Tri-Basin NRD is also committed to sustaining groundwater supplies at levels equal to or greater than average groundwater levels in the period 1981-85. This commitment is also the objective of the Joint Action Plan for the Republican Basin portion of the district agreed to by the NRD and the Nebraska Department of Natural Resources in July 2004. This commitment to protect existing groundwater supplies also protects Nebraska's credit for "imported water" in the Republican River Basin.

The NRD operates 25 miles of drainage ditches and associated works. The NRD cooperates with local irrigation and drainage districts to maintain an additional 12 miles of drainageways.

District personnel also serve our constituents in other ways. NRD personnel and our USDA-Natural Resources Conservation Service colleagues survey and design terraces, dams and other conservation practices for local farmers. We monitor and map groundwater and surface water quality and quantity. We create and present informational and educational programs about natural resources for adults and schoolchildren. Tri-Basin NRD also employs college students as interns every summer. These students learn "hands on" about natural resources management.



### **Vital Statistics**

**Counties:** Gosper, Phelps, Kearney

**Elevation Above Mean Sea Level**

High = 2,741 (Gosper County)

Low = 1,985 (Kearney County)

**River Basins**

Little Blue (25% of land area)

Platte (35% of land area)

Republican (40% of land area)

**Population:** 17,721 (2010 census)

**Property Valuation:** \$2,745,253,931  
(2011 property tax assessment)

**Land Area:** 1920 square miles  
(1,228,800 acres)

### **Vision Statement**

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

### **Mission Statement**

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 potential for 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 Our Groundwater***



The district continually monitors groundwater quantity throughout the three counties by measuring water levels in irrigation wells and dedicated observation wells. The NRD has installed at least one dedicated observation well in each township in the district. Dataloggers in the observation wells automatically measure water levels at regular intervals. Regularly measuring our aquifers helps Tri-Basin NRD directors to make better informed decisions about our groundwater supplies and to discern trends in the water levels. Those trends are what prompted Tri-Basin NRD directors to enforce groundwa-

ter pumping limits in Union Township in Gosper County in 2009 in an effort to protect the declining groundwater supply there. The 2011 data from dedicated observation wells in Union Township shows that groundwater levels have been steadily increasing since the pumping limits were enforced.

In 2011, Tri-Basin NRD directors took the first steps necessary to construct a groundwater recharge reservoir on Sand Creek in Kearney County. A geologic study was conducted to determine the feasibility and effectiveness of constructing such a reservoir. The study indicated that if a reservoir is built at the proposed site, five miles east of Minden, groundwater recharge rates could be as high as three feet per acre per day. Adequate amounts of fine grained soil for constructing a dam are also available nearby. Directors have budgeted funds to proceed with the next steps of the project, a dam and reservoir design.

Tri-Basin NRD launched the first phase of a streamflow augmentation project on North Dry Creek, a tributary of the Platte River, in Kearney County in 2011. The overall project involves acquiring or leasing land at up to three sites for the construction of groundwater wellfields that will be used to augment streamflows into North Dry Creek. The purpose of the project is to help the State of Nebraska fulfill its commitment to the Platte River Recovery Implementation Program to reduce shortages to Platte River flow targets by offsetting impacts to Platte streamflows resulting from post-July 1, 1997 water uses within Tri-Basin NRD.

Staff at Tri-Basin NRD also monitor the quality of groundwater in the district. In 2011, TBNRD staff took 241 samples from irrigation wells, which were tested for nitrates and pesticides.

Chemigation, the process of applying chemicals through irrigation systems, is permitted and overseen by Tri-Basin NRD staff to assure proper application of the chemicals. The district issued 208 new chemigation permits and 1331

renewals in 2011.

Rural residents in Gosper, Phelps and Kearney Counties need to know whether they have safe drinking water. The district offers a program that allows rural residents to have their household drinking water tested for nitrates and bacteria free of charge once a year.

### ***Conservation Cost-Share Assistance***

Tri-Basin NRD provides or administers cost-share funds for well decommissioning, soil moisture sensors, irrigation well flowmeters, conservation tree plantings and conversion of irrigated cropland to dryland cropland and grassland. In fiscal year 2010-2011, Tri-Basin NRD approved \$30,020.31 in funding for conservation tree planting cost-share and \$93,981.06 in NSWCP cost-share funds for other conservation practices.

### ***Managing Financial Resources Wisely***

TBNRD's total operating expense budget for July 1, 2011 to June 30, 2012 is \$1,127,350.75 with the levy set at 0.036044 per \$100 valuation. An owner of a house valued at \$100,000 will pay just \$36.04 in 2011 to protect this area's natural resources. This year's levy is lower than the FY 2010-11 levy, which was 3.8 cents per \$100 of valuation.

### ***Planting Trees for Future Generations***

Each year, Tri-Basin NRD offers conservation trees and shrubs for sale for windbreak and habitat plantings. In 2011, 4,191 trees and shrubs were planted and 2,550 trees and shrubs were sold for hand-planting. Tri-Basin NRD also pro-



vides free tree seedlings for several educational events and for local Arbor Day celebrations. The district distributed nearly 1000 free trees to district residents in 2011. Tri-Basin staff also help landowners diagnose tree diseases and fungal blights and decide on treatment methods.

### ***Educating and Informing Local Residents***

Tri-Basin NRD sponsors several educational events, for both youth and adults. Each February, Tri-Basin NRD joins Central Nebraska Public Power & Irrigation District, Holdrege Area Chamber of Commerce and UNL Extension to

host the Holdrege Water Conference. At this event, agricultural producers and agri-business professionals gather to discuss current water issues relevant to the TBNRD area.

Other adult information and education programs include Nitrogen Management classes for agricultural producers and the weekly Natural Resources Report on KRVN 880 radio station.



In September, Tri-Basin NRD holds the Rainwater Basin Conservation Day for eighth grade students at Sacramento-Wilcox Wildlife Management Area. About 200 students attend this event each year to learn about geology, wetlands, soils, trees and wildlife. Tri-Basin also helps sponsor the Water Jamboree for area fifth grade students, held every April at Harlan County Reservoir. All aspects of water conservation are presented in hands-on sessions to the approximately 500 students who attend this event.

### 2010 Active Irrigation Wells

County	Total Number of Irrigation Wells	Certified Irrigated Acres
Kearney County	2,100	227,168.73
Phelps County	2,156	257,115.51
Gosper County	739	93,652.23
Total	4,995	577,936.47
Basin	Total Number of Irrigation Wells	Certified Irrigated Acres
Republican Basin	1,597	189,367.36
Platte Basin	2,572	297,732.82
Little Blue Basin	826	90,836.29
Total	4,995	577,936.47

### Republican Basin Water Use\*

Irrigation System	2008	2009	2010
Pivots	6.88	7.11	5.05
Gravity	11.79	12.42	8.62
Pivot/Gravity	8.06	7.79	5.31
Overall Average	8.26	8.36	5.82

\*All Republican Basin irrigation wells are metered. Metered water use is also reported from 442 wells in the Platte and Little Blue Basins. Data updated February 8, 2011.

## Fall is Best Time for Spraying Canada Thistle

Over the past few years, we have seen an increase in Canada thistle infestations in Tri-Basin NRD. While the plants are most noticeable when they are blooming in the summer, now is the most optimal time for spraying Canada thistle, according to Charles Brooks, Phelps County Weed Superintendent.

Canada thistle is a perennial plant that reproduces in two ways: by seeds and by vegetative buds on its rhizomes, or underground roots that creep outward from the main plant, forming a very extensive root system. Shoots from the rhizomes develop into plants, enlarging the infestation. Horizontal roots may extend 15 feet or more and vertical roots may grow 6 to 15 feet deep.

In the spring, the thistles are pulling nutrients stored in the roots to sustain the green plant, so herbicides kill the green plant, but not the root system. In the fall, the thistle is not trying to maintain a green plant and nutrients are being drawn down into the root system to store for the next reproductive season. A herbicide application at this time enters with other nutrients into the roots, killing off more of the roots than a spring or summer application. A Canada thistle infestation should be monitored for two or three years to insure that all the roots have been killed and new plants from seed eliminated.



## Reminder to 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.**

***Thank you for your cooperation!***



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RETURN SERVICE REQUESTED

**TRI-BASIN NRD BOARD OF DIRECTORS**

- David Nickel, Chairman ..... Kearney, NE
- David Olsen, Vice Chairman.....Minden, NE
- Todd Garrelts, Treasurer ..... Holdrege, NE
- Bradley Lundeen, Secretary ..... Wilcox, NE
- Brian Bergstrom.....Axtell, NE
- Ed Harris ..... Loomis, NE
- Dick Helms.....Arapahoe, NE
- Phyllis Johnson.....Bertrand, NE
- Joe Larson ..... Loomis, NE
- David Nelson ..... Upland, NE
- David Raffety ..... Kearney, NE
- Larry Reynolds.....Lexington, NE
- Ray Winz ..... Holdrege, NE

**TRI-BASIN NRD STAFF**

- John Thorburn ..... General Manager
- Richard Holloway.....Assistant Manager
- Charles Brooks ..... Land Resources Coordinator
- Carie Lynch..... Administrative Secretary
- Nolan Little..... Water Resources Technician
- Alex Hasenauer ..... Land Resources Technician
- Tammy Fahrenbruch ..... Office Manager
- Esther Smith ..... Office Clerk
- Nicole Salisbury..... Information & Education Coordinator
- Destinee Steinke..... Data Entry Clerk
- Ruth Nielsen .....Minden Office Secretary
- Lori Hagan .....Elwood Office Secretary
- Tami Reese ..... Holdrege Office Secretary

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.

**CALENDAR**

- Oct. 10 ..... Columbus Day (office closed)
- Oct. 11 ....NRD Board Meeting, 7:30 p.m.\*
- Nov. 8 ....NRD Board Meeting, 7:30 p.m.\*
- Nov. 24-25 ..NRD closed for Thanksgiving
- Dec. 13 ...NRD Board Meeting, 1:30 p.m.\*
- Dec. 26 .....NRD closed for Christmas
- Jan. 2 .....NRD closed for New Year's

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

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

**TBNRD Staff to Inspect Meters**

With irrigation season winding down, Tri-Basin NRD staff are getting ready to begin annual irrigation meter inspections. Each year, NRD staff inspects and takes readings from meters in about one-third of the townships in the District.

This year we will be doing inspections in the following townships:  
 Kearney County: Oneida (5N-16W), Mirage (6N-16W) and Blaine (7N-16W) Phelps County: Rock Falls (5N-20W), Union (6N-20W), Garfield (7N-20W) and Westside (8N-20W) Gosper County: Union (5N-22W), Elm Creek (5N-23W), East Muddy (6N-23W), Elwood West (7N-23W) and Brace (8N-23W).

If you have irrigation wells in these townships and you put your meters in storage for the winter, please keep your meters in the field through the fall so they can be inspected. If you are ready to pick up meters for the season, you can call the Tri-Basin NRD office 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.

