

**ANNUAL REPORT OF WATER USE ACTIVITIES
IN THE PLATTE BASIN WITHIN TRI-BASIN NRD
TO MEET THE REQUIREMENTS OF THE JOINT INTEGRATED MANAGEMENT PLAN
FOR THE 2011 BASIN-WIDE MEETING**

I. SUMMARY

The purpose of this report is to convey information that Tri-Basin Natural Resources District (TBNRD) agreed to supply to the State of Nebraska as part of a joint Integrated Management Plan for the fully and overappropriated portions of the Platte River Basin.

II. INTRODUCTION

TBNRD encompasses portions of the Republican, Platte and Little Blue River Basins (see map #1, Appendix A). The district also contains an area commonly referred to as the "Groundwater Mound," a large area spanning portions of all three basins that is characterized by groundwater levels that are higher than historic "pre-development" groundwater elevations.

More than 100,000 acres of cropland within the Platte Basin portion of TBNRD are irrigated with water diverted from the Platte River and distributed through the canals of the Central Nebraska Public Power and Irrigation District (CNPPID). Surface irrigation water and the canals that distribute it enhance recharge of groundwater supplies within the district. In addition to helping sustain groundwater supplies, this incidental recharge has increased streamflows in the Platte and Republican tributaries. High groundwater levels have also saturated soil and sub-soil in parts of northern Phelps and Kearney counties, requiring the TBNRD to construct drainage ditches (Improvement Project Areas or IPAs) in an attempt to stabilize groundwater levels below the crop root zone. The TBNRD has designated portions of the Platte Basin as a "High Groundwater Management Area" pursuant to TBNRD rule 8.6 for purposes of groundwater quantity management.

III. CERTIFIED IRRIGATED ACRES

The district began certifying irrigated acres in the Platte Basin in 2004. The initial certification process in the Platte Basin ended on June 15, 2005. Since that time corrections and revisions to the certified acre database have occurred with a net result as of December 31, 2010, of 297,635.7 certified acres. Detailed data regarding the location and number of certified irrigated acres can be found in Appendix B.

IV. APPROVED CERTIFIED ACRE AND GROUNDWATER TRANSFERS

A. TBNRD allows certified irrigated acres to be transferred from one parcel to another within the Platte Basin portion of the district, with some limitations. These limitations include a prohibition on transfers from the fully appropriated portion of the district to the overappropriated area. Certified irrigated acres also cannot be transferred from parcels with surface water or commingled water resources to parcels that have groundwater

wells as their only water source. Between January 1, 2010 and December 31, 2010 the district approved 4 transfers. A total of 75.72 certified irrigated acres were involved in these transfers. Detailed data regarding the location, amount and conditions associated with each transfer can be found in Appendix C.

B. TBNRD regulates groundwater pumping off of overlying land by requiring landowners to secure groundwater transfer permits before they can pump groundwater to adjoining properties that are not under the same ownership. Groundwater transfer permits can only be used to supply groundwater for irrigation of certified irrigated acres. Landowners are required to install flowmeters on wells that are permitted for transfers and to report pumping from these wells annually to the TBNRD. TBNRD issued one groundwater transfer permit in the Platte Basin between January 1, 2010 and December 31, 2010 (see Appendix D).

V. WELL CONSTRUCTION PERMITS

A. Since 1989, TBNRD has required landowners to secure well construction permits before they drill new, replacement or conditional replacement wells capable of pumping more than 50 gallons per minute. The district issues three categories of well permits: new well permits, conditional replacement well permits, and replacement well permits. New well permits are issued to irrigators only in situations where certified irrigated acres are transferred to parcels that do not have a previous history of irrigation.

TBNRD requires landowners to agree to several conditions on the operation of new wells and conditional replacement wells before permits are issued. These conditions are listed in an agreement that is signed by landowners when they apply for these types of well permits. A copy of that agreement is attached to this report as Appendix F.

B. Following is a breakdown of well permits that TBNRD has issued in the Platte Basin between January 1, 2010 and December 31, 2010. A detailed listing of well permits is included in Appendix E.

1. New well permits (variances)=1
 - a. irrigation=0
 - b. municipal=0
 - c. industrial, commercial=1(associated w/ Cert. Ac. Transfers)
2. Replacement well permits=19
 - a. irrigation=19
 - b. municipal=0
 - c. industrial=0
3. Conditional replacement well permits=3
 - a. irrigation=3
 1. Supplemental to surface water=1
 2. Supplemental to groundwater=2
 - b. municipal=0
 - c. industrial=0

VI. VARIANCES

TBNRD issues new well permits to landowners only after they have transferred sufficient certified irrigated acres for the intended new use. The TBNRD Board must also approve a variance to the rule prohibiting new well construction before new well permits can be issued. One new well construction permit variance was issued in the Platte Basin between January 1, 2010 and December 31, 2010, as shown in Appendix G.

Tri-Basin NRD also conditionally certified 144.7 acres of irrigated land in the Platte basin within Kearney County in 2010. The land was irrigated in the 1970s and 1980s, but since then had been enrolled in the USDA Conservation Reserve Program. The landowner's request for certification of the irrigated acres was approved on the condition that they agree to offset any depletions to streamflows that may result from adding these acres to the NRD's irrigated acre base.

Tri-Basin NRD also corrected the district's certified acre database by certifying 80.21 acres in two parcels that had a history of irrigation between 1997 and 2005. These acres weren't previously included in the district's database, because they hadn't been classified as irrigated cropland by county assessors.

VII. MUNICIPAL AND INDUSTRIAL ACCOUNTING

TBNRD collects water use data annually from all municipalities and industries within the district. Municipal and industrial water use data for communities and industries located in the Platte Basin reported to TBNRD in 2010 is included in Appendix H. Monthly amounts used and more detailed Municipality information can be found in Appendix I.

VIII. FLOWMETER DATA

TBNRD requires flowmeters be installed and annual water use to be reported to the TBNRD whenever landowners drill new wells, conditional replacement wells, receive irrigation-related cost-share funds or when groundwater is transferred from one property to another. In 2010 Landowners reported data from 312 flowmeters in the Platte Basin. The metered wells reported irrigating 34,140.76 certified irrigated acres. This is 1171.86 fewer acres than were reported irrigated with groundwater in 2009. Twenty five metered wells weren't used, because they supplement surface water. District flowmeter data is reported annually to the Department of Natural Resources (DNR) for purposes of Republican River Basin Compact Administration accounting. Platte Basin flowmeter data is included in Appendix J.

IX. OTHER WATER BANKING ACTIVITIES

TBNRD is considering establishing a water bank of some sort, but no policy has yet been agreed upon by the TBNRD Board of Directors.

X. RETIRED ACRES AND OTHER STREAMFLOW ACCRETION ACTIVITIES

Tri-Basin NRD paid CNPPID to divert 2906 acre-feet of water from the Platte River into Elwood Reservoir in Gosper County. Tri-Basin NRD accrued 484 acre-feet credit in 2010 in the Platte Basin as a result of diversions into Elwood Reservoir in

2008 and 2009. These diversions were made from the Platte when streamflows exceeded target flows, or when irrigation deliveries were suspended due to heavy rainfall in the CNPPID irrigated area. They were above and beyond normal diversions into the reservoir for irrigation deliveries.

Tri-Basin NRD has completed construction of a streamflow augmentation well along North Dry Creek in Kearney County. This augmentation well will be able to pump water to reduce shortages to USFWS target flows when needed. The well could pump as much as 1250 gallons per minute. We anticipate that, on average, it will operate 240 days per year, pumping as much as 1325 acre-feet per year.

Tri-Basin NRD also accrued credit for 248.75 acre-feet of water pumped into the Platte River near Kearney in 2010 through a wastewater pipeline from the KAAPA ethanol plant near Axtell. This pipeline was constructed in 2007.

TBNRD cooperated with Ducks Unlimited to permanently retire 73.12 certified irrigated acres in one parcel in the Platte Basin. TBNRD landowners also signed contracts to temporarily cease irrigation on 1159.5 certified irrigated acres in the Platte Basin, through USDA CREP, EQIP and related programs through 2009.

More irrigated land was temporarily retired in TBNRD during 2010. One landowner signed a new contract for the Pheasants Forever Corners for Habitat Program and 16 contracts totaling 246.4 irrigated acres were signed up for USDA-EQIP Dry land Corners in 2010 (see Appendix K).

Landowners reported to TBNRD on district Groundwater Quality Management Area crop reports that conservation tillage practices have been adopted or continue to be utilized on 58,920.88 certified irrigated acres in the Platte Basin portion of the district during 2010 (see Appendix L). It is estimated that no-till or minimum tillage practices have been adopted on at least 120,000 irrigated acres in the Platte Basin portion of the district. Recent university research (Klocke, et al, 2009) indicates that evapotranspiration (ET) is reduced by as much as 3 inches per acre on irrigated cropland, as compared to conventional tillage systems, so if the estimates of no-till acres are accurate, as much as 30,000 acre-feet of water was conserved in the Platte Basin in TBNRD in 2010 through this conservation practice.

Finally, Tri-Basin NRD has a contract to lease irrigation water rights from CNPPID. It is anticipated that, beginning in 2012, 1633 acre-feet of irrigation water will be delivered to the Platte to offset depletions due to post-1997 groundwater uses as a result of this lease agreement.

XI. GROUNDWATER LEVELS

TBNRD has an extensive network of 107 dedicated groundwater observation wells and 91 irrigation wells that are used to measure groundwater levels (see Map #2, Appendix M). TBNRD also works cooperatively with CNPPID to gather groundwater level data. Data from 160 wells measured by CNPPID are included in TBNRD's groundwater observation well database. District water level data is reported bi-annually to U.S. Geological Survey and UNL-Conservation and Survey Division. Groundwater level data for the district is attached on a CD (Appendix N).