

Natural Resources News

Summer 2002 A Newsletter of the Twin Platte Natural Resources District Vol. 14

Come visit our web page to find out more about what we can do for you: <http://www.tpnrd.org>

July is the TIME!

July is the time to take your irrigation water samples. Irrigation water can be one important source of nitrogen for the crop. To determine nitrogen in irrigation water, wells should be pumped for at least 24 hours before the water sample is taken. It is best to take the sample during the peak irrigation season and then have the sample tested at a reliable laboratory. Some examples are: irrigation water with 5



parts per million will calculate out to 14 lbs/ac; 8 ppm will calculate out to 22 lbs/ac; 12 ppm will calculate out to 33 lbs/ac; or 15 ppm will calculate out to 41 lbs/ac. These calculations are based on application of 12" of irrigation water, which is the amount of water applied during the time the plant is able to use the nitrogen from the water that is applied. This is just a portion of the process to figure the nitrogen that may be available in the soil or water for your crop. To take advantage of the full process, we encourage you to go on line or call our office (see article below "Free Nitrogen Management Forms Online"). Using "these" nitrogen management forms can mean an **economic savings**.

FREE NITROGEN MANAGEMENT FORMS ONLINE

For anyone interested in figuring their own nitrogen needs, now you can go on to our web page at www.tpnrd.org and click on the Nitrogen and Water Reports button and download a simple spreadsheet that will help you do just that. The great thing about this form is that you fill in the information for each field, and it figures the nitrogen needs for that specific field. No more number crunching and endless hours of figuring lbs/Ac. Just answer the 7 questions and it figures the nitrogen based on those questions. Currently these forms are being used in the Target Areas, and have helped producers like yourself.

Flow Meter

The Twin Platte Natural Resources District owns a portable ultrasonic flow meter. The District uses this tool to aid producers in saving water and money. The meter provides flow rates for irrigation systems, whether it is a center pivot or gated pipe. The only requirement for the meter is that where the meter is used to measure the flow, it should be a straight pipe at least 10 pipe diameters in length from any elbow or fitting that changes the direction of the flow of water. Air in the pipe causes the reading to be incorrect. A flow meter can be hooked up, and give a reading in about 15 minutes or less. This is a valuable tool when figuring the amount of water applied at the end of an irrigation season.

Ground Water and Surface Water in Nebraska

Understanding Nebraska's Water Resources

Most of Nebraska was once called the "Great American Desert." Its scorching summers, harsh winters and seeming lack of water made this part of the Great Plains unfit in the eyes of many for settlement, not to mention agriculture.

However, one of Nebraska's greatest treasures **is** water. Subsequent growth of agriculture and economic development in Nebraska can be traced to the ingenuity and tenacity of early Nebraskans who were able to develop ways to compensate for the semi-arid climate. Nebraska's location in this "desert" was a fundamental factor in the development of the state's water resources.

Historian Walter Prescott Webb wrote of the importance of understanding the physical nature of the land. In *The Great Plains* (1931), Webb wrote: "If the Great Plains forced man to make radical changes, sweeping innovations in his ways of living, the cause lies almost wholly in the physical aspects of the land., A study of these physical aspects not only illuminates the later historical development, but in large measure serves to explain it."

One of Nebraska's foremost physical aspects is the Platte River, which is often labeled one of the most complex river systems in America. Understanding, managing, and regulating the Platte are made difficult by the river's extreme variations in flows, changing characteristics, and the many demands placed upon it.

Cooperative Hydrology Study

The Cooperative Hydrology Study (COHYST: pronounced "co-heist") is an effort to improve understanding of the hydrological and geological conditions in the Platte Basin. The study's goal is to provide scientifically supportable databases, analyses, and detailed computer ground water models to more accurately identify and quantify the relationship between Platte River flows and the ground water within the Platte and adjacent river basins.

Several entities: public power districts, natural resources districts, state agencies, water user organizations, environmental groups and agricultural interests in Nebraska have joined together as sponsors and partners to conduct the study, which:

- Provides Nebraskans with a basis to develop policy and procedure related to ground water and surface water;
- Assists Nebraska in meeting its obligations under a three state/U.S. Department of the Interior Platte River Cooperative Agreement;
- Helps Nebraskans analyze proposed water management activities of the Cooperative Agreement and /or other programs in the state; and
- Assist Natural Resources Districts along the Platte River in providing appropriate regulation and management.

Sponsors

Central Nebraska Public Power and Irrigation District
Central Platte Natural Resources District
Little Blue Natural Resources District
Nebraska Department of Natural Resources
Nebraska Game and Parks Commission
Nebraska Public Power District
North Platte Natural Resources District
South Platte Natural Resources District
Tri-Basin Natural Resources District
Twin Platte Natural Resources District
Upper Big Blue Natural Resources District

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Databases and Computer Models

COHYST develops computer databases, which are collections of information organized in such a way that a computer program can quickly select desired pieces of data. The databases quantify existing water use and flow data in the Platte River Basin. This includes ground water as well as surface water flowing in streams and rivers.

The databases are used to develop regional computer models to provide a better understanding of the ground water flow system, the interrelationship between ground water and surface water, the geology of the region, and other characteristics of the ground water aquifer. Computer models enable researchers to represent real-world features rivers, streams, ground water aquifers, floods or droughts, as a set of mathematical equations which reproduce observed water levels and stream flows.

The models can be used as tools to predict how changes to or “stresses” on the ground water system may impact flows in the Platte River. Stresses are additions and subtractions of water from the ground water system, including pumping from wells, evapotranspiration by vegetation, aquifer storage and recovery, flow to drains, ground water recharge from precipitation, deep percolation from irrigation, enhanced recharge due to certain land uses, recharge from canal and lateral leakage, and recharge from lakes and reservoirs.

Partners

City of Grand Island
City of North Platte
City of Scottsbluff
Nebraska Audubon Society
Nebraska Farm Bureau
Nebraska Water Resources Association
Nebraska Water Users, Inc.
Platte River Whooping Crane Trust

with additional funding from the Nebraska Environmental Trust

The models can be used to predict, for example, what might happen to ground water levels and flows in the river if irrigation development increases, declines, or continues at its present level. The models can also help predict how water supply or conservation projects proposed as part of the Platte River Cooperative Agreement would affect ground water levels and river flows.

COHYST flow models may be used in support to regulatory and management decisions, so they must be defensible in both scientific and legal arenas. Careful, detailed data collection will help technicians define complex flow systems as accurately as possible.

In addition to providing valuable information for the Cooperative Agreement process, COHYST is an important tool as Natural Resources Districts revise management plans, analysis ground water quality problems, and undertake other projects that may affect ground water use or recharge. The databases and models are also useful for other individuals and agencies throughout the state.

Products and data produced by the study are available on the COHYST web site at <http://cohyrst.nrc.state.ne.us/>

COHYST and the Platte River Cooperative Agreement

The Platte River Cooperative Agreement was signed by the Governors of Nebraska, Wyoming, and Colorado, and by the Secretary of the Interior, to address the needs of three threatened and endangered species (whooping crane, least tern, and piping plover) that use the Central Platte River region, and the pallid sturgeon in the lower Platte River. The goal of the Cooperative Agreement is to develop a basinwide, long-term program to improve habitat for these species.



The relationship between COHYST and the Cooperative Agreement is indirect. Information developed by the COHYST study is available to the Governance Committee that oversees the Cooperative Agreement. Many of the same people and entities are involved in both efforts.

COHYST will provide valuable information necessary to develop a plan to address “new depletions” to flow in the central stretch of the Platte River. Protection target flows is one goal of the Cooperative Agreement.

Twin Platte Natural Resources District

| | |
|---|---------------------|
| Board of Directors..... | Sub-District |
| Jim Rubenthaler.....(H)584-3578..... | At-large |
| (Chairperson) | |
| Doug Stack.....(W)535-8308..... | 3 |
| (Vice-Chairperson) | |
| Jerry Weaver.....(W)534-9240..... | 3 |
| (Secretary) | |
| Jim Meisner.....(H)284-6509..... | 5 |
| (Treasurer) | |
| Bob Peterson.....(H)532-2689..... | 2 |
| Joe Wahlgren.....(H)537-3136..... | 2 |
| Todd Kramer.....(H)764-2421..... | 1 |
| Jeff Baldrige.....(H)534-7780..... | 4 |
| Bob Wiseman.....(H)368-5866..... | 4 |
| Eric Hansen.....(W)532-6244..... | 1 |
| Dennis Schilz.....(W)287-2341..... | 5 |

| | |
|----------------------------|--|
| Staff Members..... | Position |
| Kent O. Miller..... | General Manager |
| Dave Slattery..... | Conservation Programs Coordinator |
| Bill Carhart..... | Range Programs Coordinator |
| Glen Bowers..... | Water Programs Coordinator |
| Ann Fisher..... | Water Programs Technician |
| Amy Mapes..... | Administrative Assistant |
| Kathy Clark..... | Field Office Secretary, North Platte NRCS |

Natural Resources News is the official publication of the Twin Platte Natural Resources District. This quarterly publication is partially funded by a 319 Grant from the U.S. Environmental Protection Agency through the Nebraska Department of Environmental Quality. If you have any questions, comments, suggestions, or would like to be placed on our mailing list, please feel free to submit them to:

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 P.O. Box 1347
 North Platte, NE 69103-1347
 Phone: (308)535-8080
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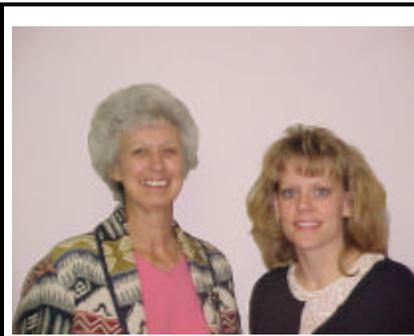
“Corners for Wildlife” / “WILD Nebraska”

These two District programs have funding available for the remainder of this year and through next year’s tree and shrub planting season to enhance wildlife habitat on private land. Contact Bill Carhart for more information on how one or both of these programs can help you accomplish your wildlife habitat goals.

Corners for Wildlife (CFW) provides attractive cost-share on materials to convert cropland next to center pivots into habitat. A \$75 per acre annual payment is offered for the 5 years that sites are enrolled in this program.

WILD Nebraska (WILD) is more versatile than CFW as it can apply to virtually any land type, not just pivot corners. WILD can be used to enhance wetlands, grasslands, woody areas, and to establish buffer strips along streams or draws. WILD provides cost-share on habitat materials, and annual payments are available depending on the type of site and where it is located. There are bonus payments if the landowner allows public access. However, public access is NOT a requirement for participation in either of these programs.

Twin Platte Natural Resources District Board Meetings are held in the United Nebraska Bank Center in North Platte, at 7:30 pm on the second Thursday of the Month.



On May 20th, we welcomed a new Administrative Assistant, Amy Mapes (right) to our office. After 25 years of service to the Twin Platte Natural Resources District, we bid a farewell to Ardis Lehmkuhler (left) in June.

Twin Platte

NATURAL RESOURCES DISTRICT

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Postal Patron