



Winter 2022

Volume 36, Issue 1

# Tri-Basin Topics

A quarterly publication of Tri-Basin Natural Resources District

## South Central Water Conference February 1st

The 2022 South-Central Water Conference will be held Tuesday, February 1st at the Phelps County Ag Center and virtually through Zoom. Join us for coffee and donuts at 9:30 a.m. Sessions will begin at 10:00 a.m. The conference is free of charge and a lunch will be provided for those attending. The program should conclude by 3 p.m. A full agenda for the event will be posted at [www.tribasinnrd.org](http://www.tribasinnrd.org) as soon as it is available as well as how to access the Zoom link.

The conference is sponsored by Tri-Basin Natural Resources District, Lower Republican Natural Resources District, Central Nebraska Public Power and Irrigation District, UNL Extension, and Holdrege Area Chamber of Commerce. It is a joint effort to increase the public's understanding of water-related issues in Nebraska.

Area agri-businesses will display their products and services at the water conference and will have representatives on hand to visit with conference participants.

Tri-Basin NRD's Phase II or Phase III Groundwater Quality Management Area producers who attend the conference are eligible to receive nitrogen management recertification credit if they sign-up when they enter.



### Agenda

#### 2021-2022 Climate Outlook and Drought Monitor Update

Al Dutcher, Associate Nebraska State Climatologist

- UNL On-Farm Research 50/50 Challenge
- 2022 Economic Nitrogen Application Rates
- Dawson Public Power District & Central Nebraska Public Power and Irrigation District Merger
- Nitrogen Application Timing
- Water Resources Updates

## Order Conservation Trees and Shrubs Today!

(See enclosed information.)

Contact Tri-Basin NRD or your local NRCS office for information about planting a windbreak or shelterbelt.



## Nitrogen Reports

Nitrogen Management Reports for the 2021 crop year were due December 31, 2021. If you have fields in the Phase II or Phase III areas of the Groundwater Quality Management Area and have not turned in your reports, please do so as soon as possible. If you need forms or help filling them out, contact the TBNRD office.

## Chemigation Renewals

Renewal forms will go out to producers who had active chemigation permits last year. Producers whose chemigation certification has expired will need to attend one of the chemigation training sessions held in February and March or complete the online course. For dates and locations for classes go to [www.tribasinnrd.org](http://www.tribasinnrd.org).

Chemigation renewal permits are due in the Tri-Basin NRD office before **June 1, 2022**.

*"Dedicated to Conservation of our Natural Resources"*

<http://www.tribasinnrd.org>



## Manager's Message

by John Thorburn

Nitrates, a form of the element nitrogen, are valuable as a source of fertilizer for corn and other crops. Nitrates are a by-product of the decomposition of plants and animal waste into organic matter, but they are also readily available from ammonia, urea and

other nitrogen-rich substances. These products are applied as fertilizers on crop fields.

Nitrogen fertilizers provide farmers the benefit of increased productivity and are necessary to sustain the productivity of any soil that is used for row crop production. They also benefit consumers by reducing the cost of food production. Man-made fertilizers made the "Green Revolution" of the 1960s possible.

The nitrates are water soluble, which helps it leach down through the soil into crop roots to feed plants. Unfortunately, this useful property of solubility can lead to a detrimental side-effect, because nitrates can move with water through the soil beyond the crop root zone. Once nitrate-laden water seeps below the root zone, gravity can carry those nitrates down to the water table, where they contaminate groundwater.

This problem first became evident in the late '70s and early '80s when researchers from the University of Nebraska conducted widespread tests of groundwater quality in Central Nebraska. These tests showed small amounts of nitrates, measured in parts per million (ppm), in groundwater. Nitrate contamination is typically associated with areas where there is widespread irrigated crop production. This widespread nitrogen contamination is known as "non-point source" pollution, because small amounts of nitrate are seeping into groundwater from many sources, as opposed to "point source pollution,

such as a large spill of a chemical in one place, due to an accident.

Natural resources districts (NRDs) are responsible for protecting groundwater quality and quantity. When the nitrate contamination problem became evident, NRDs like Central Platte and Tri-Basin took action to address the problem. Tri-Basin NRD has had a groundwater quality management area in effect since 1989. Our rules limit the timing of fertilizer application to minimize leaching. They also require farmers to test their soil and water for nitrates and encourage them to give credit for this "free" fertilizer that is available for their crops. We also require farmers to attend educational programs that provide information about best management practices once every four years.

Regulations are necessary to deal with a widespread problem like non-point source pollution, but nitrate contamination is not a problem that can be solved with regulation alone. We are very fortunate that most Central Nebraska farmers strive to farm more efficiently and want to protect the environment. They have become much more efficient irrigators over the past two decades, converting most furrow-irrigated cropland to center pivot irrigation. They have also learned how to produce record corn crops with smaller amounts of fertilizer applied in a timelier fashion, often through center pivots, so that fertilizer is used by crops instead of leaching into groundwater.

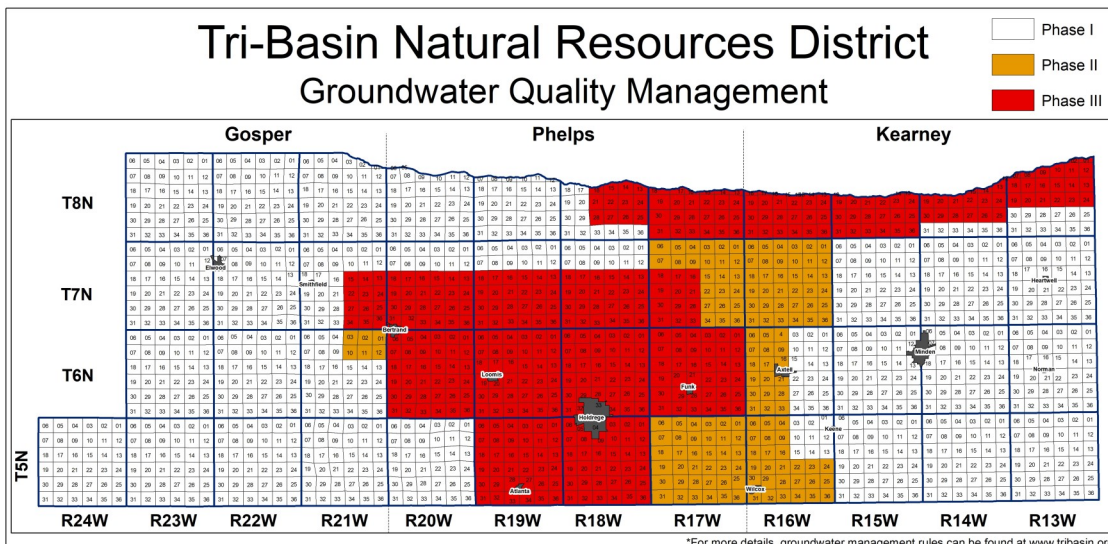
These efforts are paying off. Data from Tri-Basin's extensive groundwater quality sampling program indicates that nitrate levels in groundwater in most of Kearney, Phelps and Gosper counties plateaued about ten years ago and are starting to decline. Nonetheless, some areas are still at risk of nitrate contamination, so our rules will remain in place. More importantly, farmers will continue to improve the efficiency and effectiveness of their fertilizer and irrigation water use, which is the most certain protection for our groundwater supplies.

## Nitrogen Management Certification Reminders

The Groundwater Quality Management Areas established by Tri-Basin NRD have allowed district staff to work cooperatively with farmers and agronomists for more than 25 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 in much of the district, safeguarding the quality of our groundwater.

Producers in Phase II and Phase III areas of the Groundwater Quality Management Area need to take soil samples this winter and water samples in

Summer 2022. Current Nitrogen Management Certification is required. Producers whose certification has expired will receive notification in January by mail. Training dates have been set and can be found on Tri-Basin's website at [www.tribasinnr.org](http://www.tribasinnr.org). Attendance at the South-Central Water Conference on February 1st also qualifies for Nitrogen Management Certification. (You must sign-in to receive credit.)







## Playa Wetlands – Habitat & Groundwater Recharge

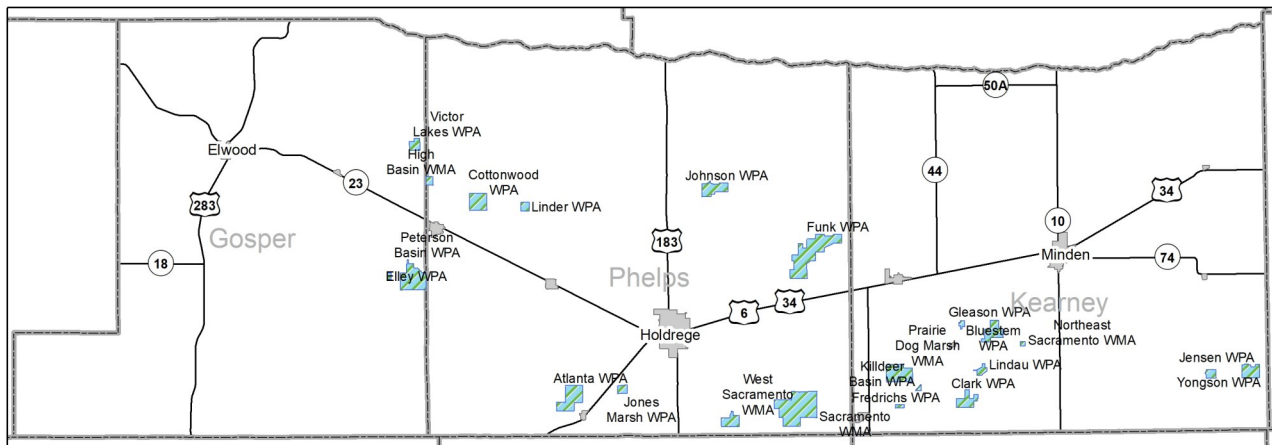
The name Playa (“ply-ah”) originates from the Spanish word for beach. In Nebraska, playas are shallow depressions that cycle through wet and dry periods. In the past, these were referred to as buffalo wallows, mud puddles, or wasteland. The Rainwater Basin Wetland Complex is a unique cluster of these wetlands. This landscape is located north of the Republican River and South of the Platte River extending from Seward west to Elwood. Historically over 11,000 wetlands covered over 200,000 acres in this region. Each of these wetlands has a unique watershed that funnels water to the wetland. Fertile soils and abundant groundwater resources makes this landscape one of the most agriculturally productive regions in Nebraska.

To maximize ag production, many wetlands were drained. Today only 10% of Rainwater Basin’s wetlands are fully functional. This is problematic since 8.6 million waterfowl rely on these wetlands each year. When large congregations of waterfowl are forced into limited habitat, birds become stressed and diseases spread more easily, resulting in die-offs from avian cholera. Stressed birds cannot forage effectively, which impacts populations since waterfowl need to put on as much as 20% of their body mass during spring migration in preparation for nesting. Healthy birds initiate nesting earlier, lay larger clutches, and are more apt to re-nest if an initial nest is lost. All these traits contribute to population sustainability.

In addition to providing important habitat, these wetlands provide significant groundwater recharge to the underlying aquifers. Groundwater monitoring suggests that one acre of playa ponding water for 35 days can recharge 1.14 million gallons of water. This is sufficient water for 100 residents for a full year based on the average municipal water use of Lincoln households.

Within Tri-Basin NRD there are several wetland areas that are used for intentional groundwater recharge. The map below shows many in the area that are used for recharge within the district. The NRD monitors and supplements them when needed or water is available.

*Rainwater Basin Joint Venture is a public/private partnership that works with federal and state agencies, local Natural Resources Districts, non-government organizations, and private landowners to develop “win-win” opportunities to protect, restore, and enhance wetlands in the Rainwater Basin. For more information on playa wetlands visit [www.rwbjv.org](http://www.rwbjv.org).*



## TBNRD Trees Honor District Newborns

Tri-Basin NRD offers parents of newborns in the district the gift of a seedling tree. These trees are available to the family of any child born in Gosper, Phelps or Kearney Counties since the previous tree season (March 2021). You can reserve a baby tree by calling our office at 308-995-6688 or 1-877-995-6688 or by emailing the baby’s name, birthdate, parents’ names, address and phone number to [nmunter@tribasinncrd.org](mailto:nmunter@tribasinncrd.org). We will send you a postcard in April letting you know when and where to pick up your tree. If you have any questions, please call our office and ask for Nate.



Winter 2022

# Tri-Basin Topics

## Tri-Basin Natural Resources District

1723 Burlington St. Holdrege, NE 68949

(308) 995-6688

email: [tribasin@tribasinncrd.org](mailto:tribasin@tribasinncrd.org)

[www.tribasinncrd.org](http://www.tribasinncrd.org)

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Holdrege, NE 68949  
Permit No. 220

**RETURN SERVICE REQUESTED**

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

## Calendar

January 11.....NRD Board Meeting, 1:30 p.m.\*  
January 17.....NRD Closed for Martin Luther King, Jr. Day  
February 1.....South Central Water Conference, Holdrege  
February 8.....NRD Board Meeting, 1:30 p.m.\*  
February 21.....NRD Closed for Presidents' Day  
March 8.....NRD Board Meeting, 1:30 p.m.\*  
April 12.....NRD Board Meeting, 7:30 p.m.\*  
April 26-27.....Water Jamboree, Republican City

\* 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  
G. 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 request an electronic version of this newsletter, send an email to [shahn@tribasinncrd.org](mailto:shahn@tribasinncrd.org).

# TRI-BASIN NATURAL RESOURCES DISTRICT 2022 HAND PLANT ORDER FORM

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY/STATE/ZIP: \_\_\_\_\_ PHONE: \_\_\_\_\_

ORDERS MUST BE IN MULTIPLES OF 25.

**Tree Order Deadline is April 1, 2022.**

QUANTITY	SPECIES
	<b>CONIFERS</b>
	AUSTRIAN PINE
	COLORADO BLUE SPRUCE
	PONDEROSA PINE
	RED CEDAR (Eastern)
	NORWAY SPRUCE
	<b>BROADLEAFS</b>
	BLACK WALNUT
	BUR OAK
	HACKBERRY
	RED OAK
	SWAMP WHITE OAK
	HONEYLOCUST
	<b>SHRUBS</b>
	AMERICAN PLUM
	COTONEASTER
	CHOKECHERRY
	ELDERBERRY
	GOLDEN CURRANT
	LILAC
	SAND CHERRY
	SKUNKBUSH SUMAC
	<b>Total # of Trees</b>
	<b>Multiply total # of trees x .90</b>
	<b>Mulch x .35/foot</b>
	<b>Staples x .15</b>
	<b>Subtotal</b>
	<b>Tax (Holdrege 7%, Minden 7.5%, Elwood 6.5%)</b>
	<b>TOTAL AMOUNT DUE/PAID</b>

### TREES PROTECT LIVESTOCK

- Increase calf survival by 12%
- Minimize winter stress
- Increase feed efficiency

### TREES IMPROVE PROPERTY

- Reduce heating/cooling costs
- Increase property value
- Reduce noise and dust

### TREES IMPROVE COMMUNITY

- Lower stress & increase wellbeing
- Improve air & water quality
- Stimulate economic development

### TREES PROTECT WILDLIFE

- Provide habitat and food
- Shelter from bad weather
- Cover from predators

### TREES IMPROVE WATER QUALITY

- Reduce soil erosion
- Stabilize stream banks
- Filter pollutants

### TREES PROTECT CROPS

- Can Increase yields
- Conserve plant moisture
- Reduce wind damage

Tree Pickup will be at: \_\_\_\_\_ Tri-Basin NRD \_\_\_\_\_ Minden NRCS \_\_\_\_\_ Elwood NRCS

# WHY PLANT A WINDBREAK?

Windbreaks and shelterbelts provide many benefits. Windbreaks planted along field boundaries reduce soil erosion by reducing wind velocity. Shelterbelts planted around farmsteads reduce heating costs in homes and shop buildings. Shelterbelts can protect livestock from blizzards and serve as "living snow fences." Trees and shrubs also provide food, shelter and nesting habitat for many species of birds and mammals.

## NRD TREE & SHRUB PLANTINGS

Contact the NRD Office or your county NRCS for help with determining the type and number of trees and shrubs you need. The technician will make arrangements for the tree order and planting service. The NRD will plant the trees according to the plan.

Trees are planted in the spring as soon as conditions are suitable. The NRD tree planting crew will notify landowners of the approximate date and time of planting.

## SITE PREPARATION

Good site preparation is a key to rapid tree growth and survival. The best site preparation begins the year before the trees are planted. On heavier soils, working the ground to kill competing vegetation is an excellent method of preparing the site. The technician assisting in planning a windbreak or habitat plot can advise you about the type of site preparation needed. The technician can also help you determine if herbicide carryover will be a problem.

## WEED CONTROL

Weed control in the form of plastic mulch is available through the district. This woven material is installed over the trees after planting. Slots are then cut for the trees. Plastic mulch not only eliminates weeds but also helps to preserve soil moisture.

## PRICES

Trees & Shrubs.....	\$0.90 each/multiples of 25
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## PLANTING SERVICE

Tree planting (no mulch) .....	\$0.50/ft
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Trees, tree planting, mulch and mulch installation .....	\$1.80/ft
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Drip tape .....	\$0.25/ft
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Drip tape set-up .....	Minimum \$35.00
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Pull-in Charge .....	\$50.00
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Renovations* .....	\$250.00
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Shrub thickets* .....	\$300.00
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Minimum 550 foot per planting

Plastic Mulch (Material Only).....	\$0.35 per ft
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Stakes.....	\$0.15 each
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Seedling Tubes.....	\$1.10 each
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**Prices are subject to change.**

\*Contact Tri-Basin NRD for site review.

## PLANTING YOUR OWN TREES

You can order trees and shrubs at the NRD or your local NRCS Office. Orders must be in multiples of 25 per species. We will send you a postcard when your trees arrive. We also have tree spades available to rent.

## DRIP TAPE

Tri-Basin has subsurface "drip tape" available for watering trees planted by the District. The water source could be a portable tank or a hydrant. Check with the TBNRD Land Resource Coordinator for more information.

## COST-SHARE

Tri-Basin NRD offers cost-share funds for tree plantings and plastic mulch installation. You should apply at your county NRCS office before March 1.

All sites must be properly prepared before planting to qualify for cost-share. Reimbursement is made only after full payment is received. The minimum total cost of plantings eligible for cost-share is \$500.

Cost-share may also be available from your county USDA office. Pheasants Forever and Nebraska Game & Parks Commission also offer programs for wildlife habitat improvement. NRCS staff can help you determine which programs have funds available and best suit your needs.

## BILLING ON NRD PLANTINGS

Tri-Basin NRD bills for trees/tree planting service after completion. Full payment is due upon receipt of the billing. Cost-share payments will not be made until payment is received at the Tri-Basin or NRCS office.