



NRD Water Resource Technicians Erin Lee and Jaden Groff led Centennial Public Schools students in testing water quality at a Farm Safety Day, reminding them of the importance of annual water testing.

Program for Point-of-Use Reverse Osmosis Systems Announced

The Upper Big Blue NRD is launching a pilot program to address drinking water quality concerns in the district. The program will provide up to \$500 per home for a point-of-use reverse osmosis (RO) system on properties where the drinking water well exceeds the level of nitrate deemed safe by the Environmental Protection Agency (EPA), which is 10 PPM.

The State of Nebraska also has a reverse osmosis funding program for private well owners. A key difference for the NRD's program is that it does not require that the well be registered. Additionally, the water samples will be tested locally for free in the NRD lab, rather than having to be shipped to a state lab. These changes should remove some of the main barriers to access that have been reported by district residents.

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American White Pelicans at Recharge Lake

RO Systems Program *(Continued from Page 1)*

Another important difference in the state funded program and the NRD program is the amount available. The state program provides up to \$4,000 per application, while the NRD funds provide a smaller amount.

Once installed, yearly maintenance and operation costs of a point-of-use reverse osmosis system run between \$50 and \$100 a year for filter membranes which must be regularly replaced. Maintenance of the system including replacement filters will be the responsibility of the well owner, not the NRD.

A reverse osmosis system is one of the safest and most effective forms of water filtration available. Using pressure, water is forced through semi-permeable filters, resulting in a high degree of filtration and contaminant reduction. Contaminants bind to the filter media, allowing clean water to pass through. Reverse osmosis water filtration systems connect to existing water lines under a sink or refrigerator water dispenser. Properly maintained reverse osmosis water filtration systems will remove drinking water nitrate, whereas many other home filtration methods cannot.

Nitrogen is a naturally occurring element. However, elevated levels of nitrogen are present in Nebraska due to the use of fertilizer. Excess fertilizer moves through the soil profile and eventually ends up in the groundwater that most Nebraskans use for drinking. On the way to the water table, it also activates other elements and compounds such as arsenic, selenium, and uranium, which are naturally found in the soil, but become a health hazard for humans when they end up in the water supply. According to research from the University of Nebraska Medical Center, poor water quality due to these contaminants has been linked to a number of adverse health outcomes, including pediatric cancers and birth defects.

While municipal water systems in Nebraska communities are required to provide water that meets EPA standards for these contaminants, private well users in Nebraska are responsible for maintaining the integrity of their own water supply. They should have it tested annually for contaminants—a process that residents of the Upper Big Blue NRD can do for free through its walk-in water testing program (which tests for nitrates and bacteria) and at-home test kits (which test for nitrate, nitrite, and phosphorus).

For full details on the NRD's Point of Use Reverse Osmosis Water Filtration System Pilot Program as well as application materials, visit www.upperbigblue.org/RO. ♦♦♦

Save the Date!

REGENERATIVE AG CONFERENCE

- February 28, 2024
- Concordia University Campus (Seward)
- Keynote: Mitchell Hora, Farmer & CEO of Continuum Ag
- Event for producers and crop consultants to learn about regenerative ag practices & available funding



Register now at www.upperbigblue.org/regenerative-ag



Geneva Continues Community Enhancements with help from NRD programs

Trees offer numerous benefits to a community, from increasing property values, to decreasing summer temps, to controlling wind and snow in the colder months, to reducing noise and air pollution. That's why the City of Geneva has added more than 200 trees along its new walking trail. In the future these trees will add beauty and shade to the community amenity, as well as habitat for wildlife.

Species planted include red cedar, Norway spruce, hackberry, silver maple, bur oak, and chokecherry. Some of the trees were machine planted by Upper Big Blue NRD staff, while others were planted by city employees.

The city made use of the Community Tree Resources Program from the Upper Big Blue NRD to fund part of this improvement. This program offers financial assistance to communities for the development or improvement of city or village tree resources. Two levels of participation are offered. The first level encourages cities and villages to develop a new tree improvement program, which qualifies them for the Tree City USA designation. A higher level of district assistance is available to communities that make such a commitment. The second level of assistance is available to cities, villages and other public entities that have developed a specific plan for tree replacement or new plantings.

Related to the Community Tree Resources Program but with a slightly different emphasis, the NRD also offers a Community Native Grass Resource Program. This program offers financial assistance to communities to develop or improve city or village properties where the establishment of native grass would be beneficial. Such areas may include, but are not limited to, lands surrounding wastewater treatment lagoons, lands within a Wellhead Protection Area and areas suitable for wildlife habitat improvement.

The tree planting project in Geneva is just the latest in a series of public land improvements that have been made in partnership with the NRD. In 2021, the NRD was involved with the expansion and improvement of Geneva Boys Pond, providing \$10,000 as well as technical expertise. In 2022, The NRD provided \$25,000 toward Phase I of the community walking trail project. Organized by the community group Geneva In Motion, this ¾-mile trail connects to a loop around the Fillmore County Hospital grounds, runs parallel to highway 81 along the edge of town, then turns west to end near Fillmore Central High School. The paved walking trail will eventually extend further west toward the city park as funds continue to be raised.

The goal is that the path will make the community a more walkable, healthy, and enjoyable place to live. The plan is to create greater access to safe walking routes to schools as well as to improve sidewalk connectivity for pedestrians and cyclists.

“We are so grateful for the support and funding that the NRD provided,” said Jenni Hoarty, wellness coordinator for Fillmore County Hospital and one of the lead organizers with Geneva In Motion. “After spending years in the planning stage, the funding from the NRD helped propel our project into motion. With the connection of our new trail, we are able to provide approximately 1.25 miles of safe trail for pedestrians from the high school to the city park.”

For the Boys Pond project, Geneva utilized funding through the NRD's Parks Program. This program allows district cities and villages to access planning and financial assistance for the development or improvement of natural resources in nature areas, campgrounds, and park facilities that encourage tree planting, creation of wildlife habitat, and open spaces. ♦♦♦

Water, Water Everywhere...

Board & Guests Tour District Projects

From monitoring wells to recreation areas, dam sites, and a water treatment plant, members of the board of directors for the Upper Big Blue Natural Resources District viewed a variety of water related projects on their annual district tour, held on August 25. Each year, directors tour a different quadrant of the district to view completed projects or sites for proposed improvements. This tour is a vital educational event for directors, who might not regularly have a reason to visit parts of the district beyond the borders of their sub district.

The event was attended by seven directors and a handful of NRD staff, as well as Senator Bruce Bostelman and Matt Howe, a representative from the office of Senator Jana Hughes. The day afforded opportunities for local and state elected officials to discuss the natural resource challenges facing the people of the district, including the problem of nitrate in drinking water supplies.

The first stop was a demonstration of sampling of monitoring wells located at the Fairmont Airpark. The monitoring wells at the location are tested regularly for nitrates and other contaminants. These wells are part of a network of 20 monitoring wells spread across nine sites in the district which are routinely sampled to track water quality trends over time. The wells vary in depth, allowing for data collection from shallow, medium, and deep sites to capture a more accurate picture of the quality of the district's groundwater. The Upper Big Blue NRD has been tracking this data consistently since 1997 to look at trends in non-point source contamination in the groundwater supply. There are plans to expand the monitoring well network to include more sites soon.

Geneva was the next tour stop, where the group viewed improvements to Boys Pond, the community walking trail, and a nearby tree planting site. The Upper Big Blue NRD has been involved in several community enhancements in Geneva in the last few years (*see page 2*).

The tour then continued on to Lone Star Recreation Area, which is operated by the Little Blue NRD. Though the stop is outside of the district, it was an opportunity for directors to see how a different NRD manages recreation facilities. The lake at Lone Star covers approximately 75-acre feet, roughly twice the size of any of the lakes managed by the

Upper Big Blue NRD. The recreation area also features 19 camper pads and is a popular spot for camping throughout the season.

After lunch, the group visited dam sites in Dorchester and Seward. The Dorchester dam is on private property but is maintained by the NRD. The structure provides valuable flood control, sediment and erosion control, groundwater recharge, and fish and wildlife benefits. In the past year, the dam face was reinforced with rock to prevent further erosion of the aging structure, for a total cost to the district of \$22,822.96.

The Seward site featured construction on a large dam structure, which will provide recreation opportunities at a privately owned campground facility under development near the I-80 exchange. The district's private dams program offers a 75 percent cost-share (up to \$50,000) for the design and construction of dams that will meet a number of the required resource concerns, including flood control, sediment and erosion control, water conservation, groundwater recharge, and fish and wildlife enhancement.

The group then toured the reverse osmosis water treatment facility in Seward. The almost 20-year-old facility remediates high nitrates in the community's drinking water. The plant treats up to 1.4 million gallons of water per day and serves approximately 7,100 residents. In 2017, the NRD provided \$37,475 to the City of Seward through the municipal assistance program to replace the filter membranes in the system. The total cost to replace the membranes was \$135,000. There are plans to expand and update the facility in the future. ◆◆◆





Programs abound at the NRD to improve habitat on private acres

By: Amanda McLeod and Jaden Groff

Did you know more than 75 percent of the world's flowering plants depend on pollinators to reproduce? Additionally, about 35 percent of global food crops depend on animal pollinators like birds, bats, and insects. A couple of examples of agriculturally significant insects in Nebraska are leafcutter bees, which are instrumental in alfalfa seed production, and parasitic wasps, which prey on soybean aphids. We also have several species that were introduced as parasitoids of European corn borer larvae-- ichneumonid wasps, braconid wasps, and tachinid flies. Furthermore, we have an abundance of generalist beneficial insects, such as ground beetles, flower flies, phytoseiid mites, and lady beetles, that help by preying on agricultural pests.

Unfortunately, pollinating insect populations have declined significantly in recent decades because of habitat loss, invasive species, disease, and pollution. Pollinators and other insects hold great value for our economy. Pollinators provide \$200 billion each year of economic revenue, according to the USDA. An interconnected network plays a vital role in balancing and maintaining our ecosystems. By providing more native habitat for wildlife—including pollinators--we help maintain species populations, diversity, and the ecosystem services they provide for our community.

The Upper Big Blue NRD area is made up of 1.8 million acres, 1.2 million of which are irrigated agricultural land that, while productive, do little for Nebraska's wildlife. The Corners for Wildlife program, created through a partnership between the Upper Big Blue NRD, Pheasants Forever, Nebraska Game and Parks Commission, and the Nebraska Environmental Trust, develops rich pieces of habitat from field corners traditionally missed by center pivots. Acres enrolled in the Corners for Wildlife program provide diverse habitat for quail, pheasants, prairie songbirds, insects, and pollinators. Cooperators involved in grass cover practices are offered \$60 per acre

with an additional 75 percent cost-share rate for seeds and equipment, and cooperators involved in tree or shrub cover practices are offered \$75-\$100 per acre with cost-share opportunities for grasses, trees, and fabric weed barrier to improve new plantings.

Want to help? Here are a few tips from the National Pesticide Information Center:

- Include a variety of native plants (including flowering varieties) in and around crops. This will provide food and shelter for a variety of beneficial insects. In small-scale agricultural settings, it may be possible to break up your plantings. Consider inter-planting a variety of crops to attract and shelter a variety of natural enemies.
- After harvesting field crops, consider planting the area with a variety of cover crops to provide habitat for some types of beneficial insects. (The Upper Big Blue NRD has programs for this as well!)
- If you choose to use a pesticide, consider selecting one that will target your pest specifically, rather than using a broad-spectrum product. Biological pesticides, for example, often target a specific insect or group of insects.
- Avoid treating plants that are in bloom. Pollinators and other beneficial insects may be visiting flowers. Don't forget, this includes flowering "weeds" (e.g. milkweed).
- If possible, avoid applying pesticides to plants when natural enemies are present and active in the area.



photos: (above) Leafcutter Bee, source Wikimedia; (left) NRD Water Resources Technician Erinn Wilkins and Director Teresa Otte.



Butzke (center) and one of the four benches he built for his Eagle Project. Other scouts who were involved with the installation of the benches included Elden Butzke, Devon Slawnyk, Matthew Hoops, Levi Jorgensen, Paul Dale, Nick Grantski, and Tyler Toovey.

Scout Project Improves Rec Area

Boy Scout Jayden Butzke has enjoyed camping, fishing, sledding, and kayaking at Smith Creek Recreation Area near Utica for years, but on one recent visit, he realized something was missing from the park: a place to sit.

Other than pulling up a patch of grass or bringing a lawn chair, the only seating was at picnic tables. Butzke thought benches around the trail at the lake's edge would be a great enhancement for the facility. He began fundraising and planning in the summer of 2022, then built four benches in the summer of 2023 and installed them at Smith Creek in September, with the help of Utica Scout Troup 180.

This act of service will help him achieve the highest rank attainable

in scouting, Eagle Scout, which he hopes to be awarded in 2024 after completing his remaining merit badge requirements.

Butzke has been part of the Boy Scouts of America since 2020. He says he appreciates the group and the Eagle Scout project requirement as, "It pushes you to be a better person and to learn responsibility."

Other scouts who were involved with the installation of the benches included Elden Butzke, Devon Slawnyk, Matthew Hoops, Levi Jorgensen, Paul Dale, Nick Grantski, and Tyler Toovey. Butzke recognized he could not have accomplished this project on his own. "Thanks to my parents, for pushing me to get this completed," he said. "Thanks also to all the local businesses that

contributed materials for my project," such as Hughes Brothers, Volzke's, Beaver Hardware, and Interstate Welding.

Butzke estimates that with materials and labor costs, the total value of his project was about \$3,500.

Butzke lives in Beaver Crossing with his parents Chris and Robin Butzke and is a junior at Centennial Public Schools. In addition to Scouting, he is involved in football, baseball, track, choir, show choir, and one-act. His long-term plans include pursuing a degree from Southeast Community College and a career as a welder. ♦♦♦

Contest Winner: *Jessica Lott of Benedict was the second runner up in the Nebraska's Natural Resources Districts Recreation Exploration contest. She won a \$300 gift card to Scheels for documenting visits to NRD parks, including Smith Creek (her daughter is pictured here kayaking at the rec area). Congrats, Jessica! Thank you for visiting our recreation areas this summer and for submitting your photos. The contest will resume in spring 2024! ♦♦♦*



Outstanding Service

In July, Lead Engineering Technician Jeff Ball (right) was recognized by the Board of Directors for his 45 years of service to the people of the Upper Big Blue Natural Resources District. Board Chairperson Lynn Yates (left) had this to say upon the occasion: “This custom benchmark is a very appropriate gift for Jeff. For those that don’t know, a surveyor’s benchmark is a permanent mark established at a known elevation that is used as the basis for measuring the elevation of other topographical points. It provides a reference point for accuracy and consistency. It is essential for ensuring that measurements are accurate. In the same way, Jeff has been a diligent



and dependable part of the NRD team for 45 years. His integrity, worth ethic, and superior knowledge and skills have made him an essential reference point for the Projects Department. You can always count on Jeff to do an outstanding job no matter what the task, doing work that is often tedious or physically challenging. He is always willing to help others and to ensure that NRD projects are of the highest quality. We celebrate Jeff for the contribution he has made through the years and thank him for his dedicated service.”



Former Upper Big Blue NRD Director Linda Luebbe was recognized in September with a service award from the Groundwater Management Districts Association. Luebbe served four terms as president of this national organization. Her leadership and willingness to serve are greatly appreciated! ♦♦♦

BLUEPRINT



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Nebraska, The Tree Planter's State

(This article originally appeared in the National Association of Conservation Districts' Forestry Notes e-newsletter)

Nebraska's Natural Resources Districts (NRDs) are government entities with a unique responsibility to protect the state's natural resources. The boundaries of the 23 NRDs are based on the major river basins in Nebraska, which allows them to respond to local conservation and resource management needs. NRDs throughout the state work with landowners and partners to construct projects, implement programs, and enact regulations to safeguard natural resources. Although they share similar responsibilities, each NRD has its own priorities and programs tailored to protect Nebraska's natural resources.

Groundwater management, flood protection, and conservation trees are some of the recognizable NRD programs. To achieve their mission of protecting lives, property, and the future, several NRDs collaborate with the Nebraska Forest Service, which provides full-time, co-funded foresters to help landowners establish windbreaks and offer forestry programs to surrounding communities. Every year, NRDs help communities and landowners plant more than 700,000 trees, which provide numerous benefits including soil erosion reduction, crop and livestock protection, food and cover for wildlife, noise buffering, valuable products, and aesthetic beauty. Last spring, the NRD Conservation Tree Program celebrated a major milestone by planting their 100 millionth tree — that's approximately 50 trees for each Nebraskan. "Nebraska has a proud history of planting trees and putting the 100 millionth tree in the ground reflects Nebraskans' willingness to invest in the future," said Dr.



Orval Gigstad, Nebraska Association of Resources Districts president. "Our tree planting success is owed to the forward-thinking vision of landowners."

Every fall, the NRDs recognize a Tree Planter of the Year, landowners that embody the spirit of the program and the importance of tree planting in the state. In 2022, this distinction was awarded to Dennis and Teri Taylor of Newport, Nebraska. During an average year they plant around 1,000 trees whether replacing lost trees or adding along a creek for additional livestock protection. More than 20 shelter belts have been added over the past 50 years, which are now an important part of their cow/calf and yearling operation. The trees are critical to their calving season survival rate and provide shelter. The primary reason for the windbreaks is livestock protection, but the Taylors have noticed the windbreaks shield the sandy soil greatly reducing erosion. The windbreaks also offer an excellent place for wildlife to find food and protection. The Taylors are passing on the importance of trees and how to properly plant and care for them to their grandchildren, who are sixth generation on the ranch.

The Natural Resources Districts in Nebraska, along with their partners, have been working for more than 50 years to protect the state's natural resources, including planting millions of trees. Through these efforts, Nebraska remains a state with a proud history of tree planting and investing in the future. ◆◆◆

Photos: Jacob Mitchell and Kaleb Fritz give away trees at Husker Harvest Days (above); the NRD tree planting team in action (left).

**Plant Trees...
Protect the Future**

**2024 NRD Tree Sales Open December 1
www.upperbigblue.org/trees**

