

LAND & LEGACY

A PUBLICATION FOR LANDOWNERS
IN THE UPPER BIG BLUE
NATURAL RESOURCES DISTRICT



ISSUE 02 | AUGUST 2025

Hello, neighbor.

In my 15 years on the Board of Directors for the Upper Big Blue NRD, I've seen many things come and go, but one thing has remained: the importance of protecting natural resources for the future.

Nebraska is a vibrant and thriving place because of agriculture. We must protect our soil from erosion and depletion, and preserve our wa-

ter quality and quantity, if we want Nebraska to thrive for years to come. Generations of Nebraskans who will follow us are counting on people like you and me to ensure that our soil and water resources are safeguarded today and available tomorrow.

As a landowner, you have an essential responsibility to the land in your care, whether you operate the acres yourself or not. Good news--there are funds and programs available to help you do it. If you would like

more information on adding conservation practices to your land, I hope you'll reach out to the NRD. We are here to serve you as you serve the land. We welcome your collaboration in this important work.

~John Miller



John Miller
Board Chairperson
Upper Big Blue NRD



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COVER CROP FUNDS AVAILABLE

The Upper Big Blue Natural Resources District has increased the funding available in targeted areas of the district to offset the costs associated with adding cover crops as well as other practices. The goal of this program is to improve water quality in the Beaver Creek Watershed and in Wellhead Protection Areas.

The increased rates for the Water Quality Management Plan Cover Crop Program are \$75/acre up to a maximum of \$7,500 per landowner per year. For the land treatment portion of the program, the NRD will pay 90 percent of the project cost up to \$15,000. Additionally, the NRD is increasing rates for buffer strips in the target area

to provide 50 percent beyond the existing buffer strip rate available through NRCS/Nebraska Department of Agriculture. Landowners and operators are eligible to apply. Applications are available online or at the NRD office. The Upper Big Blue NRD recently completed a Water Quality Management Plan that serves as a map to improve the water resources and water quality within the district. District-wide and targeted implementation efforts to address sediment, nutrients, bacteria, and atrazine will be accomplished through existing programs. The Beaver Creek Watershed was selected as the initial target area for implementing new water quality measures. Learn more at www.upperbigblue.org/wqmp.

WATER LEVELS DECLINE, REMAIN ABOVE ALLOCATION TRIGGER

During March and April 2025, NRD staff measured roughly 500 observation wells throughout the district to determine the average water level change, based on a weighted change from each well. For spring 2025 water level measurements, the NRD has determined that the average groundwater level change shows a decline of 0.39 feet from last spring. The spring 2025 average groundwater level is now 3.21 feet above the “Allocation Trigger.”

Observation wells are measured in the spring of each year, allowing the water table to rebound from the previous irrigation season. The wells that are measured are uniformly distributed throughout the district to provide an accurate profile of the average groundwater level change. Each well measured is assigned an area of the district based on distances from other measured wells. This method gives the average groundwater level change a weighted average.

In spring 2024, the NRD reported an average groundwater decline of 3.08 feet. Spring 2023 showed a decline of 2.21 feet on average. Fluctuations from year to year are common throughout the district, however we have seen several dry years in the district with sustained declines. The Upper Big Blue NRD sits above the High Plains Aquifer, which stretches from South Dakota to Texas. This portion of the aquifer is dynamic and factors like rainfall and pumping affect how the aquifer reacts.

In addition to the average change, the NRD also provides a more detailed look at water levels across the district. Water levels declined most in Adams and Seward Counties, each with a drop of about 1 foot. On the other end of the spectrum, Butler County saw a groundwater level increase of 1.19 feet. Fillmore and Polk Counties also saw marginal increases.

Producers in the district continue to do an exceptional job of managing the use of district water resources and cooperating with the NRD on conservation activities and monitoring. Along with NRD staff measuring observation wells, all groundwater users are required to annually report their water use. This is how the NRD maintains records on historic groundwater usage. Groundwater use records are very important to the district for making informed management decisions. The 2024 district average groundwater usage was 5.65 inches/acre. The district average groundwater usage is 6.1 inches/year since 2007.

The district’s goal is to hold the average groundwater level at or above the 1978 level. In 2005, the district average groundwater level reached the “Reporting Trigger,” initiating mandatory reporting of annual groundwater use to the district and certification of irrigated acres. If the district average water level falls below the 1978 level (“Allocation Trigger”), groundwater allocation rules will be implemented.

Investing in Soil Health

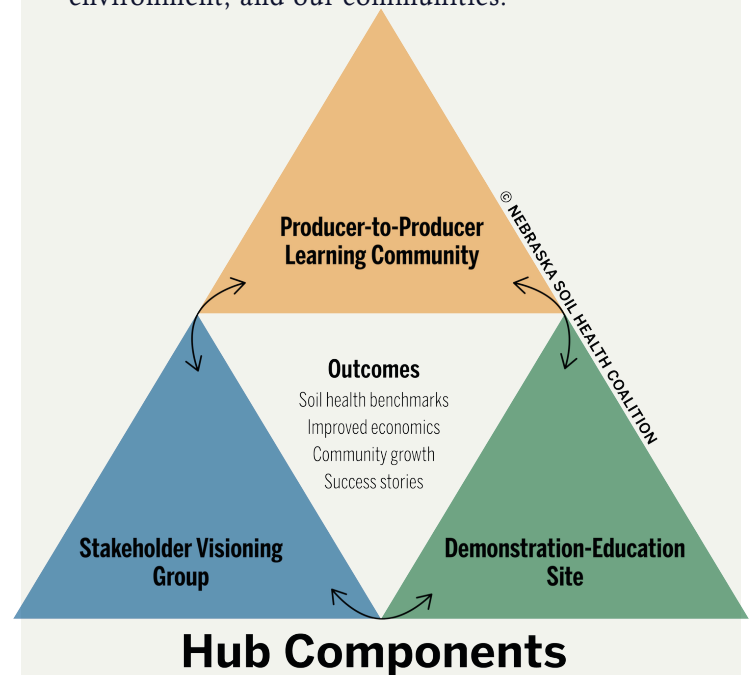
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Our regional, hub-based model offers localized assistance that connects producers with meaningful data and real-world examples.

Within our first two hubs, the Coalition is providing economic, social, and environmental analyses which are being conducted by state and national partners. This data is helping producers track the impact of their management decisions. These insights allow them to better understand their own operations and share lessons with others on the same path. By connecting farmers and ranchers through Producer Learning Communities, they can experience the necessary relational and technical support needed for the journey.

In addition, Stakeholder Visioning Groups (SVGs) are also connecting community leaders from various sectors - business, healthcare, education, and conservation, to name a few - to talk about the importance of soil health and how it impacts much more than agriculture. By taking on topics like water quality and creating new markets, the SVG is addressing opportunities for community health and growth that also help producers adopt soil health systems.

If you would like to hear more about the work of the Nebraska Soil Health Coalition, please visit our website at www.nesoilhealth.org. By working together to invest in soil health, we can generate significant positive returns to the land, the environment, and our communities.



FINDING THE BALANCE BETWEEN AG PRODUCTION & NATURAL RESOURCE CONSERVATION

By Dr. Andrew Little, Associate Professor and Wildlife Extension Specialist at the University of Nebraska-Lincoln

Nebraska's farms and ranches are the lifeblood of our state's economy—and with a few simple land management changes, landowners can benefit wildlife, improve soil health and water quality, and boost their bottom line. By implementing practices that keep working lands healthy and productive, landowners have the chance to leave a lasting legacy for future generations.

One of the easiest ways to improve wildlife habitat is to start with the least productive parts of your fields. You may already know where these areas are, or you can use yield monitor data to find consistently low-yielding or marginal acres. Converting these spots to prairie strips (CP-43), diverse cropping systems, grazing acres, or hunting leases can reduce input costs, improve profitability, and create habitat for pheasants, quail, meadowlarks, pollinators, and other wildlife.

Research shows planting just 10 percent of a field into 15- to 30-foot-wide prairie strips along contours can reduce soil erosion by up to 95 percent. Studies also show converting unproductive acres to lower-input options like perennial vegetation—often supported through conservation programs—can boost cropland profitability. This targeted conservation approach protects natural resources while strengthening your bottom line.

Today's precision agriculture tools offer more opportunities. Many farms already use yield maps to track productivity; those same maps can highlight areas better suited for conservation programs. Talk with your local Natural Resource Districts, the Nebraska Game and Parks Commission, Pheasants Forever & Quail Forever, or federal partners like

the USDA can help you plan and often provide cost-share funding to implement habitat projects.

Even small actions make a difference. Leaving grassy waterways unmowed, planting native shrubs along fence lines, or creating corridors with food, nesting cover, and overwinter habitat gives wildlife what they need throughout the year—think wildlife management 365 days a year, not just one season. These features are especially important in working landscapes, where high-quality habitat is often scattered.

Once you've established habitat on marginal acres, tools like prescribed fire or light disking can keep it healthy over time. Burning a 5- to 10-acre patch every few years rejuvenates native grasses and forbs, creating excellent nesting and brood cover for game birds. Prescribed fire can be done safely with help from local burn associations or conservation groups.

Conservation works best when neighbors work together across fence lines. Wildlife need connected habitat to move through our working landscapes, so remember to think beyond your own fenceline and coordinate with your neighbors. By taking a landscape-scale approach together, you can create a network of habitat that supports more wildlife than isolated patches alone—think stepping stones of habitat for wildlife. These partnerships can also help reduce erosion, improve water quality, and boost multi-farm profitability—because a rising tide lifts all boats.

Finally, don't underestimate the



Photos: a prairie strip planting in Iowa, from the Conservation Media Library, Soil and Water Conservation Society

power of peer-to-peer learning. A 2022 survey by my Applied Wildlife Ecology and Spatial Movement (AWESM) Lab found Nebraska farmers and landowners prefer to get precision agriculture and conservation information from friends, family, and peers. Connecting with others who've tried these practices offers practical insights to help you succeed. Peer networks can also inspire more neighbors to get involved, expanding conservation beyond your own farm and building momentum for landscape-scale habitat efforts that make a bigger impact.

By taking small, practical steps to improve habitat, you can help wildlife thrive, protect Nebraska's resources, and leave a lasting legacy. Reach out to your local NRD or wildlife biologist with Nebraska Game and Parks Commission, Pheasants Forever, or Quail Forever for guidance. Together, we can feed and fuel a growing world while ensuring the sustainability of our natural resources for future generations.



NITRATE MOVEMENT AND LOSS UNDER IRRIGATED CROP PRODUCTION

By Chuck Burr, Nebraska Extension Educator

Why Nitrate Loss is a Problem

Loss of nitrate-nitrogen because of leaching (washing) from the bottom of the crop root zone should concern farmers for at least two reasons:

- It contaminates groundwater that is used for individual and municipal water supplies.
- It represents a loss of money to the producer and may result in reduced yields or a need to apply more nitrogen fertilizer.

Today, many cities, small towns and rural residents have to deal with excess nitrate concentration in their water supplies. In Nebraska, much (but certainly not all) of the groundwater nitrate is non-point source contamination from intensive production of irrigated corn. Non-point source means that there is no identifiable single source of the contamination. Rather, it comes from a wide area like a field, farm, or an entire farming area.

The U.S. Environmental Protection Agency has set a maximum contaminant level (MCL) of 10 parts per million (ppm) of nitrate-nitrogen in public water supplies (see page 7). The need to find new supplies or to treat water to meet these standards is proving to be both difficult and costly for many small towns and villages. In some cases, local governments have established wellhead protection zones around municipal wells. This provides a legal means with the potential to control the management of agriculture within the zone to greatly limit the loss of nitrate from the

crop root zone. A major issue facing farmers and town residents is how to meet the need for low nitrate drinking water while meeting the farmer's need to manage production to assure a good yield and a reasonable profit. There are no simple answers.

Nitrate contamination of groundwater has been a problem for many years in some of Nebraska's river valleys where the subsoil is sandy and the water table is shallow (10 to 30 feet). Any nitrate leaving the crop root zone will reach the water table in a matter of weeks or at most a few months. While contamination problems may appear and then develop relatively rapidly, better management of water and nitrogen may begin to improve ground-water quality in a matter of two to three years. More recently nitrate is also beginning to be found in groundwater where the water table is much deeper and is overlain by 80 to 100 feet of fine textured material. Under such conditions there is a long delay between nitrogen loss from the root zone and arrival at the water table. Travel time from root zone to water table may be 20 to 30 years or more. Unfortunately, this means that management improvements on the surface may take many years to appear as an improvement in groundwater quality.

It is important for Natural Resource Districts and other agencies involved in natural resource management to closely monitor changes in groundwater quality and advise producers of increasing nitrate concentrations. A groundwater contamination problem may develop gradually for several years before

it becomes apparent. Part of the difficulty in seeing the problem early is the result of how water is usually sampled. Nitrate-nitrogen moving from the root zone to the groundwater arrives at the top of the water table and then very slowly mixes with the water below. However, a water sample taken from a pumping irrigation well is a mixture of water entering the well from many depths in the aquifer (see page 7). There can be substantial accumulation of nitrate in the upper groundwater, while the sample from the pumped well shows a much lower value that tends to represent an average over the aquifer depth. The thicker the aquifer, the longer it takes for the concentration in the irrigation water to arrive at the 10 ppm MCL.

Why Nitrate Loss Occurs

In the production of many crops, some nitrogen loss is almost unavoidable due to a combination of factors, including:

- In the root zone, most of the applied nitrogen fertilizer is converted eventually to the nitrate form through the action of soil microbes. Nitrate is readily dissolved in soil water and will move with water.
- The root zone is relatively porous and leaky. When irrigation or rainfall temporarily increases the water content of the root zone above field capacity, the excess will drain downward, carrying nitrate with it. In most cases, that nitrate will eventually reach the water table.

Even under ideal conditions, some nitrate-nitrogen will be leached from the root zone of most cultivated crop

land each year. With very careful management of nitrogen and water, nitrate leaching during the growing season may be quite limited (in absence of excessive rainfall); however, some part of the residual nitrate from both fertilizer nitrogen and that mineralized from organic matter will be subject to leaching by off-season precipitation. Significant losses also will occur during the growing season if rainfall or irrigation is excessive or if nitrogen applications are excessive or made long before crop uptake.

This information is reproduced with permission from the Plant and Soil Sciences eLibrary at the University of Nebraska Lincoln. For more on this topic, see <https://passel2.unl.edu>.



Questions about conservation funds? ...Call Jerod!

There are many cost-share and incentive payment programs available to help landowners and producers add practices to the land—practices like cover crops, wetland restoration, and irrigation management that improve the bottom line for an operation, as well as address water quality and quantity concerns. Navigating these programs can be confusing. If you are interested in getting started or you have questions about funding, call Jerod Fling, the NRD's integrated water programs specialist. He's here to help you access funds for conservation practices.



402-366-5272 | jfling@upperbigblue.org



IS IT AN OLD WELL?

Do you have an old well on your property? It's possible that you do and you don't know it!

Depending on condition, wells can be a direct conduit for contaminants to enter drinking water. Sealing or decommissioning wells is a simple way you can prevent contamination of the drinking water supply and protect the health of everyone who drinks water in that area. Unused wells that aren't properly sealed can provide an opportunity for pollutants such as fertilizer, animal waste, or agricultural chemicals to travel into the aquifer and endanger everyone who consumes water from nearby sources. These wells pose a double danger—children and animals can easily become trapped in them, leading to serious injury or death.

Not sure if you have an old well on your property? Here are some indicators that you might:

- A low spot in your yard
- A windmill tower
- Concrete pads where the legs of a windmill tower once stood
- Depressions where an old well pit or the walls of a hand-dug well may have collapsed
- An old stock tank in an over-grown area
- A small area that is fenced off, especially if there are also pipes sticking out of the ground
- Flat stones, a concrete slab, old boards, metal sheets, or other items that could be covering an old well shaft
- A pitless adapter
- A well pit inside a shed/pump house or crawl space

What should you do if you find an old well on your property or suspect one? Call the NRD. There are cost-share funds available to properly decommission wells.



ROI OF WETLANDS ON THE FARM

By Ron Seymour, Nebraska extension educator

Many farms have areas of land that vary in their ability to grow a crop or do not accommodate modern farm equipment. Farmers may attempt to adjust their inputs or production practices in these areas to increase yields, but these efforts may not increase the return on investment (ROI). These marginal areas could benefit from conversion to a conservation purpose, but it can be difficult to make this change if there is potential for a decrease in revenue. It is important for farmers to understand how they can adopt conservation practices and still realize reasonable profitability. Playa wetlands, found in the Rainwater Basin of south central Nebraska, are upland depressions with high clay content soils which hold water during wet years but may be dry through others. Farmers have filled these areas with soil, excavated concentration pits and/or dug surface drains to move excess

water from portions of their fields. However, the use of these techniques may not sufficiently reduce excess soil moisture, resulting in lower yields or a complete crop drown out. Yield inconsistency in these areas has led several farmers to seek a more permanent solution.

Two south central Nebraska farmers with adjacent fields containing a playa wetland area worked with staff from the Natural Resources Conservation Service, Upper Big Blue Natural Resources District, and Rainwater Basin Joint Venture to establish a long-term conservation easement. The agreement included an easement payment, wetland restoration, irrigation equipment improvements that include conversion of gravity irrigation to a center pivot irrigation system, and installation of livestock grazing infrastructure.

The farmers participated in an ROI study of pre- and post-easement crop production by recording their expenses and yields over a seven-year period. This period of time included one year of above average moisture that resulted in a lower yield in the wetland area. An economic analysis demonstrated that one of the farmers

increased ROI in their field from 48 percent to 51 percent. The second farmer saw a decrease in ROI in their field from 72 percent to 46 percent. When considered together, the ROI decreased by 15 percent. However, the analysis only captured the ROI of annual expense. Greater profitability was realized when the value of the easement payments, installation of new irrigation equipment, installation of new livestock grazing infrastructure, increased crop production efficiency, and increased livestock production were included.

Casual observations were also made regarding the effects of the renovation on wildlife and the environment. Significant increases in the number of migratory birds utilizing the wetlands was evident. In addition, the wetland held more water throughout the year that allowed slow but steady recharge into the aquifer. Additional data is being collected on ROI, farm profitability and the effects of the revitalized wetland on the ecosystem.

Interested in wetland restoration on your acres? The NRD can help! Contact Jerod Fling at jfling@upperbigblue.org / (402) 366-5272.

Photos courtesy of Rainwater Basin Joint Venture



PHASE III SAMPLING REQUIREMENTS

Every three years, producers in NRD Phase III management areas (zones where there is an average nitrate level of 10 ppm or above in monitoring wells sampled by staff) are required to submit a sample from each irrigation well they operate. The NRD analyzes the sample for nitrate level and provides the information back to the producer, so that the producer can take credit for the nitrogen already present in their irrigation water when they calculate their nitrogen needs for the following season. This information allows the producer to make a more informed management decision that can prevent over application of nitrogen, saving the individual on input costs and saving the community on long term costs associated with increased nitrogen in drinking water.

If you own land in a Phase III area of the district and you would like to know information about the nitrate levels of irrigation wells on your property, contact the NRD. Water Department Manager Terry Julesgard can answer your questions. Contact Terry at tjulesgard@upperbigblue.org or by calling (402) 362-6601.

WATER TESTING & RO SYSTEM FUNDS AVAILABLE

For private well owners, it's important to test drinking water annually, as results can change from year to year.

The NRD offers free water testing to determine if a well is providing safe drinking water. Anyone in the district can request a simple at-home test by emailing info@upperbigblue.org or calling the office at (402)362-6601. The at-home tests provide fast results but are not as sensitive and accurate as a lab test. For the best results, a sample should be brought to the office for free lab analysis. Instructions for how to collect a sample to bring in for analysis are at upperbigblue.org/water-testing.

If a lab test reveals that the water sample is above 10 PPM, funding is available for the homeowner through the NRD for the installation of a point-of-use reverse osmosis system. A properly installed and regularly maintained reverse osmosis system can remediate the risk associated with nitrates in water. *Learn more at upperbigblue.org/RO.*



CEASE & DESIST PROCESS EXPLAINED

In order to manage water quality and quantity in the district, the NRD has put in place rules and regulations that all district producers and landowners must follow. These rules vary depending on the needs of the management area (the district is broken into 12 zones with three levels of management for groundwater quality and 2 zones for groundwater quantity). Rules may include reporting of water and nitrogen use, use of soil moisture probes, attending nitrogen management training sessions, and soil and water sampling. When these rules are not followed, a regulatory process is initiated with the producer that ends with legal action if the producer does not come into compliance. These rules and actions are outlined in District Rules 4 and 5 (available online at upperbigblue.org/about/rules-regulations).

This process begins with a “complaint” and “investigation.” If a producer is not in compliance with any element of the rules implemented for the zone where they operate, the NRD looks into the matter and attempts to resolve the issue without consequence to the producer. If no resolution is available, the district will send a letter of intent to issue an order of cease and desist of irrigation, at which point the producer may request a hearing before the board of directors to explain the lapse in compliance and address the concerns. If that doesn't happen, the board of directors will issue an order of cease and desist of irrigation to the producer, which prevents them from irrigating until they come into compliance. If they continue to irrigate after receiving the cease and desist order, the matter will be turned over to the county courts and a fine may be issued.

The NRD works with producers and landowners to ensure compliance and uses the cease and desist process only when other options have been exhausted. If you have questions about the cease and desist process or how it might be impacting the productivity of your land, contact NRD Water Department Manager Terry Julesgard at tjulesgard@upperbigblue.org or call (402) 362-6601.



*NRD tree team
planting on a
York County
farm property in
spring 2025*

TREE PLANTING BENEFITS

Funds available to improve your land with windbreaks

The Upper Big Blue NRD is committed to helping district residents and landowners see the benefits available through windbreak planting. That's why we offer low-cost trees, planning and planting services. Orders are collected November 1 through March 30 and trees arrive in mid-April, just in time for spring.

There are cost-share funds available through the district's Land Treatment Program for qualifying landowners for the installation or improvement of a windbreak, as well as for the installation of weed barrier fabric mulch around a new planting.

So Many Reasons Why

According to the University of Nebraska Extension Office, there are plenty of reasons to plant trees. Here are just a few:

- Windbreaks are perfect for Nebraska, as they provide the greatest benefits in areas with high winds, large amounts of snow, extreme temperature fluctuations, or minimal natural forest cover. Well-designed windbreaks reduce the amount of energy needed to heat and cool your home by 20 to 40 percent. When winter winds are combined with low temps, the resulting wind chill may create dangerous conditions. The trees keep you warmer in winter by reducing windspeeds and cooler in summer by providing shade.
- A windbreak can be a natural air freshener. Trees and

**Multirow
windbreaks
provide essential
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for many birds
and animals.**

shrubs act as a natural filter, catching particles that carry odor.

- Multirow windbreaks provide essential nesting, feeding, singing and breeding habitat for many birds and animals. They also provide a safe travel corridor for wildlife between feeding, watering, and resting sites. By varying tree and shrub species, you can create a smorgasbord of seeds, nuts, and fruits for area wildlife. They also sustain birds that eat pests, improve hunting opportunities, and provide a place for family outdoor activities.

Old Windbreaks?

Many windbreaks planted in the 1930s and 40s are losing their effectiveness due to age, poor health, or neglect. All windbreaks, even well-designed ones, need regular maintenance in order to maintain their overall structure and to continue to function as effective wind barriers. Renovating a windbreak can be a difficult task. Help in assessing your windbreak and determining the best renovation techniques is available from the NRD.

Before you tear out an old windbreak, visit with the NRD to see what could be done to renovate it instead. Perhaps some rows could remain while others could be removed and replanted. New species could be introduced for new purposes. Even if the entire windbreak needs to be replaced, it is better to do it in stages, as the older trees will shelter the younger trees and help them get

established more quickly.

Older windbreaks have unique benefits, as they are more likely to be adopted as shelter by hawks, owls, and cavity-nesting birds. Snags are trees that have died and possibly lost limbs, but the tops are still standing. Snags are great for wildlife. If they are not where they pose a safety hazard, consider saving part of an older windbreak for wildlife. Owls, woodpeckers, and chickadees will thank you for the additional foraging and shelter.

For the best wildlife benefits, a shelterbelt should have a developed tree canopy and an understory that includes shrubs and herbaceous plants that provide both food and cover. Some plant species provide more wildlife benefits than others and a variety of species is necessary to provide the range of habitat needs of most wildlife. In general, greater windbreak width provides better winter protection. Including a variety of trees and shrubs in the windbreak planting gives a more naturalistic landscape appearance and improves wildlife values for more species. It also reduces the chances of disease or insect pest problems.

Getting started with NRD trees

Interested in adding a windbreak to your property? Reach out to NRD District Conservation Forester Raymond Asamoah (trees@upperbigblue.org) to get started. Tree plantings aren't a one-size-fits-all solution. That's why Asamoah meets with district landowners who want to add trees to create a customized plan. He asks many questions as part of this process: What are you hoping to accomplish with trees? Are you looking for a windbreak to protect a house or crops? Do you want to improve wildlife habitat? Do you want a living privacy fence or an ornamental enhancement? How quickly do you need results? The answers to these questions guide recommendations for the project. The NRD also works with communities on urban planting needs, such as improvements to city parks.

For large-scale plantings, Asamoah typically visits the property to look at geographic considerations including boundary lines, power lines, nearby roads and waterways, and trees that

are already present to make sure that any additional trees planted will be well set up for growing success. He then creates a proposal for the landowner that maps where trees could be installed, how many, and of which varieties. The plan includes a total cost for labor and trees as well as projected cost-share funds available.

The Upper Big Blue, like other NRDs across the state, offers financial assistance to qualifying landowners for large-scale planting projects, such as windbreak installations, renovations, or extensions, and wildlife conservation plantings. Cost-share funds are also available for communities for improvements, including trees, in public nature areas.

Once a tree plan is complete, Asamoah works with the landowner to fine tune the project and answer questions. Sometimes the landowner gets started with planting the following spring (NRD trees are planted each year from April to June) and other times they delay a year or two before enacting the plan. While pricing may vary slightly from one year to the next, a planting plan can easily be updated depending on when the trees will be installed. Collaborating on a tree plan with the NRD does not obligate a landowner to implement the plan, and since there is no cost to the landowner to consult on these types of projects, there is no risk involved in getting started.

For tree resources and programs offered through the NRD, online

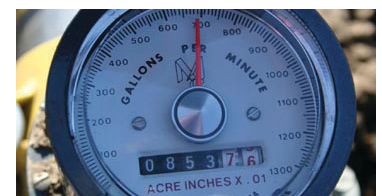


tree orders, or to contact Asamoah, visit www.upperbigblue.org/trees or call 402-362-6601.



Flowmeter Repair Cost-Share

A functioning flowmeter is essential to irrigation decisions. The NRD offers funding to offset the cost of flowmeter repair for district irrigators. The cost-share amount for repairs of district water flowmeters is 50 percent of total cost up to \$500 per flowmeter. The program will allow for the replacement of electronic flowmeters which are not repairable with new or refurbished mechanical flowmeters. The maximum cost-share per landowner for flowmeter repair is \$1,000 per fiscal year.





“TRY SOMETHING”

On a hot and breezy late summer afternoon, a fleet of pickup trucks lines the side of a gravel road one mile south of Milligan. Golden, ripening corn and soybean fields stretch into the distance on all sides as about 40 people follow local farmer Jordan Uldrich into the one section of farmland that looks different from all that surrounds it. Here, a lush growth of cover crops fills the wide space between the rows of corn.

When it comes to cover crops and other soil health practices, “it’s worth trying,” Uldrich tells the audience gathered in his field. This season, Uldrich was trying some things for the first time. With a goal of using less inputs and suppressing weeds, Uldrich used a five-acre patch of dryland corn to experiment.

Uldrich invited producers to view his test plots during a 2024 field day event hosted by the Upper Big Blue Natural Resources District and The Nature Conservancy. The event drew area growers who were curious about getting started with cover crops on their acres, as well as those who are already implementing soil health practices and are enthusiastic about the results. The field day was an opportunity to see the results of Uldrich’s experiments up close and to ask questions of the grower as well as a handful of staff members from

agencies including USDA-NRCS, UNL Extension, Pheasants Forever, the NRD, Nature Conservancy, and the Department of Natural Resources. Participants mostly came from the Upper Big Blue district area, but some came from as far as Sioux City, Iowa. Part of the draw of the event was the chance to network and learn what other producers are doing in the area.

When discussing his motivation for the summer’s experimentation, Uldrich says he “wasn’t trying to win a yield contest,” but rather, he was interested in testing strategies for weed suppression, especially for palmer amaranth, and seeing if there was an economical way to use less chemical inputs while maintaining a profitable yield.

“Nitrogen management is essential to weed management,” said Uldrich, explaining that where you have excess nitrogen, you’ll have more weeds. “I’m getting serious about judicious use of nitrogen when we are trying to control weeds.” Each plot had 30 lbs. of nitrogen applied in the spring. On four of the test plots, Uldrich applied 55 lbs. of nitrogen and 20 lbs. of sulfur in-season. The fifth plot had no additional fertilizer applied after the 30 lbs. in the spring.

None of the plots had fungicides or insecticides applied, except for what

was on the pretreated, conventional seed. Uldrich added a few different biological products and all five plots were planted into a rye cover crop that had been chemically terminated six days before planting. One plot included a conventional herbicide program in 30” rows with no cover crops. The other four all included an 8-way cover crop mix interseeded at V3-V4, with varied row spacing and nutrient application. The Upper Big Blue NRD assisted Uldrich in planting his cover crop with an interseeder. The land had been no-till for 20 years, however, this was the first season Uldrich had experimented with cover crops.

The cover crop mix on the test plots included forage peas, mung beans, berseem clover, oats, turnips, impact forage collards, buckwheat, and pie pumpkins. It had been fairly dry for the last six weeks prior to the field day, however when Extension Educator Jenny Brhel lifted a spade of soil from between the rows among the cover crops, she noted subsurface moisture present, as well as good soil structure.

When it came to pest control, Uldrich noted the grasshoppers were “in the covers, not the corn,” as were the Japanese beetles. “They’d rather chew on the covers. Give them something succulent to chew,” if you want them to leave your primary crop

alone, he told his fellow farmers. “The healthier the soil, the more likely you are to have the bugs that will help you.”

Field day participant Don Hilger grows organic popcorn and does custom seeding and seed cleaning. He’s a fan of cover crops for a few reasons. “If you get your nutrients right, it attracts the beneficial bugs, and the bad bugs don’t like the sugar content of your healthy plants,” he said. “If you have nitrogen and phosphorus in the soil but don’t have the biological activity, you can’t access the nutrients.” Hilger says he tests regularly through the season to determine which nutrients to add and in what quantity on his acres.

Uldrich’s test plots revealed varying levels of success. Uldrich plans to analyze results after harvest and expand on the most successful practices in the next growing season. He’s also considering carbon market influences, including how much carbon the various practices would capture and whether that will offset the cost of some yield loss. He plans to do more acres of cover crops and continue to reduce inputs, utilizing SAP testing to provide a road map for nutrient application in-season.

When it came to the various row spacing, Uldrich suggested there is no one size fits all approach, but that spacing should depend on what you’re trying to do. If you have cows that you want to graze on the cover crop, 60-inch rows are ideal. “Cows are the perfect bioreactor on the fields. Buffalo built the soil. The closest we’ve got now is grazing cattle,” he explained.

If you are looking for weed suppression, 30-inch rows work best. Why is he so concerned about weed control? He predicts that in 10 years we will not be able to control aggressive weeds with chemical means due to herbicide resistance. “I’m trying to get ahead of that curve. Biology has a lot more to do with it than chemicals,” he said. Uldrich plans to plant a rye cover crop this year after harvest as well.

“Have something green out there year-round,” he told his audience. When you do, you’ll continue pumping exudates into the soil where the plants can access it, creating an exchange of nutrients.

Uldrich suggested that everyone, “find the back four acres and try something.”

“It’s a worthwhile endeavor. If everyone can take one step in the right direction, we don’t all have to sprint to the finish line,” he said.

Interested in funding for cover crops and other soil health practices? The NRD can help! Contact Jerod Fling at jfling@upperbigblue.org / (402) 366-5272.



Don’t send your soil & water to Kansas!

Your soil and water are some of the most valuable assets of your land, so why would you allow even one ounce of it to end up in Kansas due to poor management? There are many things you can do to protect your natural resources and keep them on your land, where they belong. The NRD can help.

If you have an aging dam structure on your property, it may no longer be functioning at its intended capacity due to rust, rodent damage, or tree roots. The NRD can assist you with restoration through the Private Dams Program, which offers a cost share rate of 75 percent of the project up to \$75,000. The NRD recently assisted with a private dam restoration near Beaver Crossing utilizing cured-in-place pipe technology. This process is much cheaper and faster than earlier methods of dam structure improvements.

Your land isn’t worth as much if the soil is blowing or washing away. Since the topsoil layer is essential for maintaining fertility, keep your soil in place with erosion prevention measures such as cover crops. Keeping a growing root in the ground year-round adds carbon to your soil and holds the soil in place. The Upper Big Blue NRD has several programs available to offset the cost of cover crops. Similarly, grassed water ways and buffer strips are an easy way to keep soil and agrochemicals from entering streams and rivers. This is important for water quality, as well as erosion prevention. The NRD also has increased funding available for these practices.

INVESTING IN SOIL HEALTH

By Davis Behle, Nebraska Soil Health Coalition Network Director

What does it mean to “invest?” Whether it’s in a context of finance, relationships, or health, I would define investing as committing resources to generate a positive return.

Within the realm of soil health, investing is often referred to as conservation. To keep an asset working for us - in this case, the land - we must conserve it, protecting and nurturing the value it holds. Most would agree that conservation is important and noble, but it’s not always viewed as a financial strategy. “Conservation” can sound like an expense. “Investment,” on the other hand, implies growth and positive returns.

Many conservation practices deserve to be reconsidered as investments. Practices like reducing tillage,

planting cover crops, or extending crop rotations are not just

conservation ideas - they are strategic decisions with the potential for positive returns, often even in the first year. That said, they can also present short-term risks or variability. So why do producers take the leap, and more importantly, why do they stick with it?

Picture a graph of the S&P 500 over the last 60 years. It’s a jagged line with many ups and downs, but the long-term trend is undeniable: up and to the right. Soil health follows a similar trajectory. The first year might be unpredictable, but the long-term benefits - based on well-established principles - make it worthwhile.

The principles of soil health include keeping the soil covered, minimizing disturbance, maximizing diversity, and maintaining a living root as much as possible. As producers apply these practices, it may feel

like a bumpy ride, but over time, the benefits accumulate: better profits, increased resilience, time savings, improved quality of life, and positive environmental outcomes.

To support this long-term approach, the Nebraska Soil Health Coalition provides tools and support designed to help producers make and maintain soil health investments. *Continued pg 2...*

Concordia University student Jessie Ciezki collects a soil sample in a field of alfalfa in a rotational cropping system demonstration field in York. Her senior project evaluated soil health benefits of regenerative agriculture practices.



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