

LLNRD Irrigation Nitrogen Credit Calculator Now Available

The Lower Loup NRD is excited to announce a tool at LLNRD.org to help producers with their nitrogen budget. The new Irrigation Nitrogen Credit Calculator is now available. Producers who have wells tested by the LLNRD can use their readings, along with their estimate for next season's water application, to calculate their estimated nitrogen credit from irrigation water.

Use the QR Code or go to the 'I Want To' menu at LLNRD.org and select 'Calculate Irrigation Nitrogen Credit' to try it out.



Sampled Water PPM * Water Applied * Your Nitrogen Cost *

10 12 (ac/in.) \$.70 per lb

Calculate

NO3 Pounds Per Acre: 27.24
Estimated Savings: \$19.07 Per Acre

Use Satellite Imagery to Boost Nitrogen Use Efficiency

A growing body of scientific findings show that the most efficient way to utilize nitrogen fertilizer in a cornfield is to apply it when the corn plants are in the field and ready to utilize it. Ongoing research shows that applying fertilizer in the fall – and/or heavy amounts of fertilizer applied in early spring before crops have emerged – often results in inputs being leached beyond the root zone. Those chemicals continue through the soil profile toward groundwater resources without providing any return on the dollars invested.

Applying fertilizer only when plants need it is also the most cost-effective way to achieve yield goals. But considering variations in soil types from field to field, and the influence of weather and other uncontrollable factors, how can producers determine optimal nitrogen application timing?

A new management practice being refined in Nebraska uses multispectral satellite imagery to help producers decide the best time to apply in-season nitrogen, either by ground equipment or chemigation, to boost their nitrogen use efficiency.

The system works by establishing low, medium, and high rate of application plots next to each other at the beginning of the season. These plots represent the "trial" in each field that later management decisions will be based on.

After the trial plots are established, the system will begin looking at the multispectral satellite imagery that is highly sensitive to the growing crop's nitrogen status. This imagery is captured on a near-daily basis. The system's algorithms analyze each image to determine and isolate areas that are stressed and in need of nitrogen and generate a 7-day outlook for that crop's demand. The system then provides recommendations for nitrogen applications that can be sent to the producer via text message, email, or a push notification through a proprietary app. Producers can also generate recommendations on demand.

The final management decisions are ultimately in the hands of each individual producer, but this technology can be a powerful tool for reducing each season's nitrogen application without sacrificing yield, therefore boosting profits for each growing season.

Not only does a calculated in-season application make sense to each producer's bottom line, but any nitrogen taken in by a growing plant is no longer a leaching risk. A high nitrogen use efficiency is the best way to keep nitrate pollution out of our groundwater and help keep producers' finances in the black.

The LLNRD Photo Contest is open now. Enter by May 15, 2026. Learn more at LLNRD.org.



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LLNRD.org

Nebraska's NRDs . . .

Protecting Lives, Protecting Property, Protecting the Future.



IN THE LOUP is a publication of the Lower Loup Natural Resources District. It is published quarterly by the LLNRD and is distributed to the residents of the 16 counties that make up the District. IN THE LOUP is edited by Alan J. Bartels, Information & Education Coordinator.

A Message from the Manager



LLNRD General Manager
Russell Callan

On any given day at the Lower Loup NRD we are administering LLNRD cost-share programs and working with partner organizations to administer state and federal cost-share programs. These innovative programs allow agricultural producers to increase the efficiency of their operations while also providing environmental benefits to water resources, wildlife, and other natural resources.

An alphabet soup of acronyms gets tossed around when LLNRD mentions conservation programs. EQIP stands for the Environmental Quality Incentives Program. This program is through the NRCS (Natural Resources Conservation Service). The goal of this program is to help farmers and ranchers integrate conservation practices onto working lands. Assistance comes in the form of cost-share payments, but also through technical assistance provided by experts.

Examples of EQIP practices applicable within the Lower Loup NRD include the construction of manure storage facilities, establishing filter or buffer strips, soil and manure testing, nutrient management, use of cover crops, brush management, installation of livestock pipeline, prescribed grazing, prescribed burning, and conversion of gravity irrigation to pivot irrigation, to name only a few of the nearly 200 unique conservation practices designed to benefit farms, ranches, and managed forest lands.

From 2017 through 2024, all 93 of Nebraska's counties received financial assistance through EQIP. When ranked by the level of financial assistance received, only one county within the Lower Loup NRD made the top 10. The potential to improve on that is immense.

The Nebraska Soil and Water Conservation Program (NSWCP) is a state-funded initiative often administered through NRDs that provides cost-share assistance to landowners for implementing approved conservation practices. Through NSWCP, the Lower Loup NRD cost-shares 50% for irrigation water management projects, installation

of windbreaks, windbreak renovation, installation of drip irrigation, pasture/range seeding, creation of grassed waterways, development of water and sediment control basins, and many other conservation practices. Cost-share for decommissioning wells is set at 70% (up to \$500) per application.

LLNRD also cost-shares on flow meter installation and installation of telemetry equipment, and we have cost-share programs for Variable Rate Irrigation and Advanced Soil Sampling.

There is more to these beneficial programs, much more than we can fit into this newsletter. Contact your nearest NRCS office to learn more about their programs, and you are always welcome to reach out to us at the Lower Loup NRD.

Cost-share programs are important tools for conservation. They are also critically important to ag producers working hard to keep their operations afloat during these tough economic times. Funds and technical guidance are readily available, but it is up to ag producers and land managers to start the conservation conversation.



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IN THE LOUP

Certification Always Required Prior to Chemigating

Nebraska Law Aims to Protect Citizen Health, Groundwater



The goal of the Nebraska Chemigation Act is to protect the groundwater and surface waters of Nebraska from contamination by fertilizers and pesticides. Nitrate levels in groundwater resources are on the rise in many parts of Nebraska. Pollution from commercial fertilizers is a major contributor to this contamination. This contamination presents a health risk to people, livestock, and wildlife.

Research from the University of Nebraska Medical Center has found a link between areas with high brain cancer rates and elevated nitrate concentrations in groundwater. Also, Nebraska has the seventh-highest pediatric cancer rate in the United States and the highest of any state west of Pennsylvania. Many cancers and other diseases are associated with nitrate exposure.

Chemigation – the injection of agricultural chemicals into water flowing through an irrigation distribution system for application to cropland – allows ag producers to apply chemicals, including fertilizer, at the exact time that plants need it. When chemigation is used, nitrate-leaching losses are reduced along with the possibility for nitrate contamination of groundwater. Chemigation includes the added benefit of increased safety for farmers from the standpoint that the actual handling of chemicals is reduced in the chemigation process, so operator exposure is minimized and the chance for spills is diminished.

When utilizing a chemigation system, care must be taken to prevent accidental groundwater contamination through backflow into the irrigation well. To avoid this contamination, the appropriate chemigation equipment and system must be set up, operational, and properly maintained. The lack of properly installed and serviceable equipment will result in a chemigation permit application being denied. According to Nebraska law, a permit is required by anyone who plans to chemigate. But why?



Research shows that overapplication of fertilizer can actually harm crop productivity. Therefore it makes no sense for producers to intentionally spend more to apply excess inputs that will reduce their yield!



LLNRD.org

Visit LLNRD.org to opt-in for SMS (text) alerts from Lower Loup NRD.

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This year, hundreds of irrigators across the Lower Loup Natural Resources District (LLNRD) will use chemigation to apply fertilizers and pesticides to their fields. In 2025, LLNRD issued 3,618 chemigation permits. The farmers who received those permits reported applying nearly 17 million pounds of in-season nitrogen fertilizer within the District.

That is an increase of more than 10 million pounds over what was applied in the Lower Loup NRD in 2006. (16,749,389 pounds of nitrogen fertilizer in 2025 vs. 6,519,000 pounds in 2006).

Before an irrigator can begin chemigation, state law requires that a permit be obtained from their local Natural Resources District. Permit applications are available at the Lower Loup NRD District Headquarters in Ord, online at LLNRD.org, and

at Natural Resources Conservation Service offices in Albion, Broken Bow, Burwell, Columbus, Fullerton, Ord, Spalding, and St. Paul.

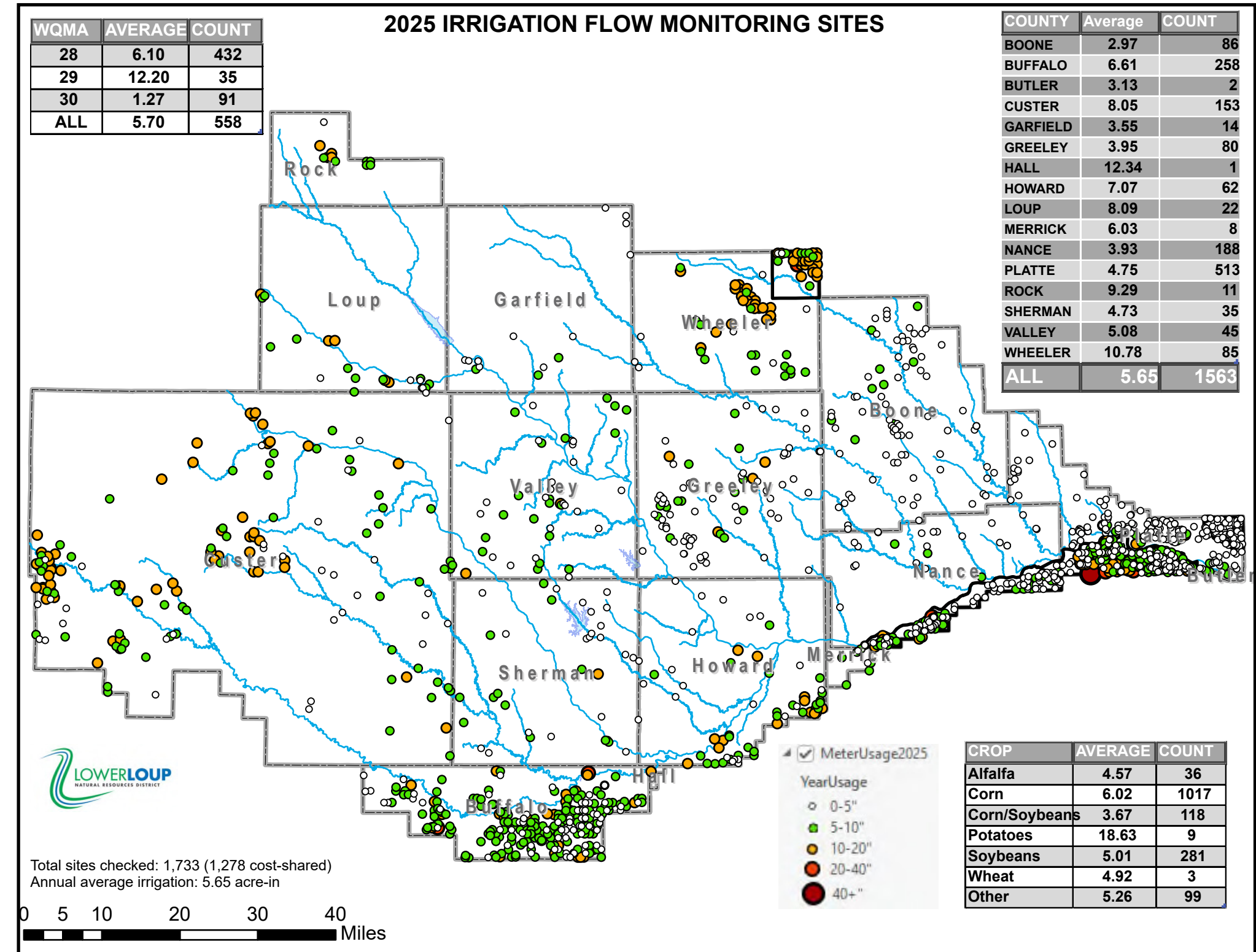
University of Nebraska-Extension has scheduled chemigation training courses across Nebraska in the coming weeks and months. Producers planning to chemigate must be certified. To gain certification, producers must complete a training course and pass a written exam. Certification is good for four years.

Learn about online certification and see a list of in-person training events at pested.unl.edu/training-and-certification/

Regardless of the price of inputs (they continue to climb) it only makes sense to always apply agricultural chemicals as efficiently as possible. In the case of fertilizer application, too much of a good thing can be deadly.



2025 Irrigation Readings Lowest in Five Years



Davis Creek Recreation Area Reservation Website and other Updates

The Lower Loup NRD's Davis Creek Recreation Area (DCRA) is one of the most popular recreation areas in Nebraska. The two campground loops at DCRA are in high demand for much of the year. Half of those RV campsites are available on a first-come, first-served basis. The other half can be reserved at reserveamerica.com.



RV campers who stay at Davis Creek Recreation Area often might have already noticed that the reservations website has a slightly new look. Those minor changes are due to the site now using an improved operating system that will result in a more user-friendly experience. One improvement includes the ability for website users to see what sites are available in two ways.

List View allows users to actually see a photo of each campsite that is available. LLNRD plans to update every photo in Spring 2026 once the trees and other vegetation greens up.

Map View shows what campsites are available and which are already reserved. The Map View also allows website users to see which sites are ADA compliant, and

which ones are walkup sites available on a first-come, first-served basis. Locations of water hydrants and other amenities are also shown.

The fee to cover lodging tax has increased to \$10. This is charged per transaction, not per night or per reservation. A patron could reserve multiple campsites under one transaction and that fee would still only be \$10. The lodging rate per night remains \$30 per campsite. Only one RV/camper is allowed per site. Leaving a car, pickup, or other belongings in a walk-up site in an effort to prevent someone else from claiming the spot is prohibited. Fires are permitted in provided fire rings only.

An RV camping spot may be reserved for a maximum of 14 consecutive days per 30-day period.

The Lower Loup Natural Resources District is seeking volunteer camp hosts for Davis Creek Recreation Area. Besides getting to enjoy the outdoors at one of Nebraska's premier recreation areas, Camp Host volunteers enjoy the benefits of a free, reserved RV camper pad.

Camp Hosts must be 18 years old or older and perform in a professional manner as a steward and the Lower Loup NRD's public relations contact at DCRA. Responsibilities include greeting campers and answering questions, assisting in campground registration and reservations when needed,

understanding and explaining recreation area rules and regulations, and notifying LLNRD staff and appropriate authorities in the case of emergency. All interested volunteers will be required to complete a campground host supplemental application and return it to the Lower Loup Natural Resources District.

The LLNRD's Camp Host program operates from May to September each year. Approved Camp Host volunteers will coordinate with LLNRD regarding the dates available for Camp Host assignment at Davis Creek Recreation Area.

Visitation at DCRA is expected to be as busy as ever this spring and summer on the heels of a recently completed road paving project through a portion of the recreation area. Individuals interested in applying to be a Camp Host should contact the Lower Loup NRD at (308) 728-3221. Individuals with questions should call that same number.

We hope everyone in the District enjoys a safe recreation season in 2026.



LLNRD field staff has completed 2025 irrigation readings and discovered that, thanks to timely rains across the Loup Basin, some wells have recorded the lowest irrigation totals when compared to the last five years of record. Anyone who spent a significant amount of time outside last summer is aware of the timely rains that started in June of 2025 and continued through to the middle of August. This reduced the need for irrigation during the crucial summer growing season. There was still a need to irrigate in some areas.

LLNRD Assistant General Manager Tylr Naprstek stated that in mid to late May, following planting and after emergence of the crop, the area was extremely dry. "The NRD had just finished collecting spring water levels and taking spring meter readings from irrigation systems, and most of the basin was in either a Severe or Extreme drought. The area across northern and eastern portions of the District were especially bad," according to Naprstek. "We saw a lot of early irrigation, just to ensure the emerging crops had some moisture to work with in the topsoil, as we were coming out of a very dry winter."

The 2025 LLNRD average was approximately 5.7 inches of irrigation per acre, which is down compared to 8.5" (2024), 11.17" (2023), and 12.66" (2022). The LLNRD is now collecting readings from nearly 1,800 meters and has required meters on irrigation wells in both designated Water Quality Management Areas 28, 29, 30, and Water Quantity Areas 18, 19, 20. In addition, all newly permitted high-capacity wells require a meter before operating and any transfers also require the installation of a functional flow meter prior to use. The NRD offers 50% cost-share for the installation of an approved meter, which also includes necessary equipment associated with meter installation. Individual meter results are sent out to owners of all meters read across the LLNRD with the average irrigation broken down by both county and crop. Naprstek reiterated that "water measuring is a key component to water management."