

Cover Crops: Boosting Profits and Protecting Soil

In the heart of Nebraska, where agriculture drives our economy and sustains our communities, farmers are always looking for ways to work smarter, not harder. Enter cover crops—a practice gaining traction for its ability to improve soil health, increase profitability and shield the land from the elements. One farmer leading the charge is Gabe Brown, a North Dakota innovator whose journey offers valuable lessons for Central Platte NRD producers.

The Power of Cover Crops: More Than Meets the Eye

Cover crops—like rye, clover or hairy vetch—aren't just placeholders between cash crops. They're hardworking partners in the field. By keeping living roots in the soil, they feed the underground ecosystem, boosting microbial activity that cycles nutrients naturally. This reduces the need for synthetic fertilizers, a cost-saving win for farmers. Gabe Brown, who operates a 5,000-acre diversified farm near Bismarck, North Dakota, saw this firsthand. After years of integrating cover crops into his no-till system, he eliminated purchased fertilizers entirely, relying instead on the natural fertility unlocked by his soil biology.

Beyond nutrients, cover crops act as "soil armor." Their residue blankets the ground, protecting it from erosion caused by wind and water—challenges all too familiar in our region. Brown emphasizes this principle, noting that bare soil is a lost opportunity. "Nature always keeps the soil covered," he says. "Leaving it exposed is like leaving money on the table." His fields, once degraded, now infiltrate water at rates far exceeding those of his neighbors, thanks to the protective layer cover crops provide.

The ROI Reality: Investing in the Future

The upfront costs of cover crop seed and planting can make farmers hesitate, but the return on investment tells a compelling story. Studies show that cover crops can increase yields over time by improving soil structure and water retention. For CPNRD farmers facing variable rainfall, this resilience is a game-changer. Brown's experience backs this up—his corn yields average 127 bushels/acre, well above his county's 100-bushel norm, all while slashing input costs.

"We grow a bushel of corn for under \$1.50," he says, a figure that highlights how cover crops can turn a profit by cutting expenses on fertilizers, pesticides, and fuel. Plus, there are several cost-share opportunities available through programs like the NRD and USDA to help shoulder the burden for producers, making that initial investment even more manageable.

The benefits compound over years. Organic matter climbs, holding more moisture and nutrients for future crops. In North Dakota, Brown transformed soils with less than 2% organic matter to over 6% in two decades, a feat that translates to real dollars during dry spells. Closer to home, Central Platte farmers adopting cover crops report similar gains—less runoff, healthier soils, and steadier yields, even in tough seasons.

Building Soil Armor: A Legacy for Tomorrow

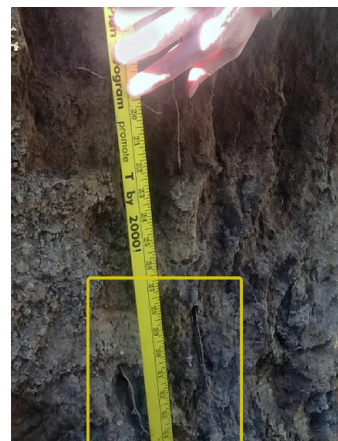
Brown's approach isn't just about today's bottom line; it's about building a legacy. By using diverse cover crop mixes—sometimes dozens of species—he mimics nature's playbook, creating a robust armor that protects soil from degradation. This diversity feeds a thriving underground workforce of microbes and earthworms, which build aggregates that make soil porous and resilient.

"It's about working with nature, not against it," Brown explains. His ranch, once battered by hail and drought, now stands as a testament to this philosophy, drawing thousands of visitors eager to see soil health in action. This means cover crops aren't just a tool—they're a strategy. They shield our sandy soils from blowing away, keep precious water where crops can use it, and set the stage for sustainable farming that benefits us and the generations to come. Whether it's a simple rye cover or a multi-species cocktail, the message is clear: investing in soil armor pays off.

Taking the Next Step

Ready to explore cover crops on your land? Contact the CPNRD for resources, cost-share opportunities, or to connect with local farmers already reaping the rewards. Brown's story shows what's possible—higher profits, healthier soils, and a landscape-armored for the future. Let's grow that vision right here in Nebraska! To watch an interview with Gabe Brown on regenerative ag visit <https://youtu.be/TLwsn8snsMc>

Your CPNRD Contact: Jerod Fling (402) 366-5272 | jfling@upperbigblue.org



See the white roots from rye grass within the square—helping to improve soil structure and reduce resistance for next year's crop!



Gabe Brown shows how regenerative ag has been highly successful on his 5,000 acre ranch, with crop yields 20% to 25% higher than the average yields in his county. Photo courtesy: NRCS

Upcoming To Do's

- Nitrogen Crop Report:** Reports are due March 31st for all crops in Phase II/III Nitrogen Management areas. Producer packets were mailed in early January.
Your Contact: Tricia Dudley
- Place Tree Orders:** Place tree, shrub and weed barrier orders for spring planting. Over 30 species available. **COST** \$31.25/bundle of 25. Visit cpnrd.org for details.
Your Contact: Kelly Cole
- Volunteer:** See the Nebraska Children's Groundwater Festival Volunteer insert to see how you can volunteer. The Festival will be held Tuesday, May 13th at CCC/College Park in Grand Island.
Your Contacts: Marcia Lee, Brody Vorderstrasse
- Chemigation Permits:** Certified applicators license is valid for 4 years. Current renewal permits expire June 1 of each year. Chemigation applicator's license renewal testing is available at: <https://pested.unl.edu/training-and-certification/chemigation/>
Your Contact: Courtney Olson

To Do

1. **Submit Nitrogen Management Report**
(by March 31)
2. **Place Order for Tree & Shrub Seedlings**
(by April 1)
3. **Volunteer! May 13 at Children's Groundwater Festival**
(Sign Up by April 28)
4. **Submit Chemigation Renewal Permits**
(by June 1)

Prepare for the Growing Season

ANNUAL CROP REPORTS

Crop Report Forms are due March 31st for all crops in Phases II and III of CPNRD's Nitrogen Management areas. Penalties for violations are fines ranging from \$1,000 to \$5,000 per violation per day and/or loss of irrigated acres, ineligibility for cost-share and restriction from transferring irrigated acres.

Your CPNRD Contact: Tricia Dudley
308-395-7213 | dudley@cpnrd.org

CHEMIGATION PERMITS

Annual Renewal \$20.00

New Application \$60.00 for each new permit. Inspection required before permit is issued.

Special Permit \$60.00 for systems that don't need all safety equipment specified in the regulations, if CPNRD determines by inspection and NDEE concurs.

Emergency Permit \$500.00 when chemigation is necessary on short notice.

CROP REPORTS DUE MARCH 31

CHEMIGATION RENEWAL PERMITS DUE JUNE 1

Important Dates

- | | |
|--------------------------------|---|
| January 1 | Nitrogen certification test due |
| March 31 | Crop Report, water and soil samples due |
| June 1 | Chemigation renewal permits due |
| June 15 | CPNRD-Ron Bishop scholarship apps due |
| July 4 | Office closed |
| July 27 | 2025 Budget Hearing & Board Meeting |
| Sept 1 - March 1 | Irrigation transfer apps accepted |
| Sept 15 | Chemigation reinspection deadline |
| November 1 - April 1 | Order trees and shrubs |
| December 25 - January 1 | Office closed |

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215 Kaufman Ave Grand Island NE (308) 385-6282 cpnrd.org

Will Your Corn Talk to You?

For decades, the University of Nebraska has conducted research across the state to determine the recommended rate of nitrogen for corn. This calculation has traditionally factored in variables such as yield goals, soil residual nitrogen, nitrogen credits from irrigation water, organic matter, manure, and previous crops. Based on years of research, the UNL nitrogen rate algorithm for corn was developed as follows:

$$[35 + (1.2 \times \text{Expected Yield}) - (8 \times \text{NO}_3\text{-N ppm}) - (0.14 \times \text{Expected Yield} \times \text{Organic Matter}) - \text{Other N Credits}] \times \text{Price} \times \text{Timing}$$

While this predictive approach has generally been effective, researchers have continuously sought ways to improve nitrogen management strategies. Methods such as preplant applications with inhibitors, split applications, sidedress, and fertigation have been explored to optimize efficiency.

A key takeaway has been to minimize nitrogen application before the rapid uptake period, which begins at the V6 growth stage and continues through the R2 stage.

Project SENSE: Using Crop Sensors to Improve Nitrogen Use Efficiency

In response to this ongoing need for improvement, the Nebraska On-Farm Research Network launched Project SENSE, focusing on crop canopy sensors to enable variable-rate, in-season nitrogen application in corn.

Since 1988, the nitrate concentration in Nebraska's Central Platte River Valley groundwater has steadily declined, largely due to the shift from furrow to center-pivot irrigation. However, fertilizer nitrogen use efficiency (NUE) remained static, highlighting the need for technology-driven improvements. Project SENSE aimed to demonstrate how crop canopy sensors—mounted on high-clearance sprayers—could enhance nitrogen efficiency and reduce nitrate loss to groundwater.



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INSERTS: [South Platte Compact & Nebraska Children's Groundwater Festival Volunteer Form](#)

**CENTRAL PLATTE NRD
BOARD OF DIRECTORS**

Board Member	Subdistrict
Keith Ostermeier, Grand Island	At-Large
Jay Richeson, Gothenburg	1
Brian Keiser, Gothenburg	1
Dwayne Margritz, Lexington	2
Tom Downey, Lexington	2
Marvion Reichert, Elm Creek	3
Steve Sheen, Kearney	3
Lon Bohn, Gibbon	4
Ryan Kegley, Kearney	4
Deb VanMatre, Gibbon	5
Mike Wilkens, Gibbon	5
Jerry Milner, Grand Island	6
Mick Reynolds, Wood River	6
John Stoltenberg, Cairo	7
Ed Stoltenberg, Cairo	7
Todd Arends, Grand Island	8
Kevin Werner, Grand Island	8
Vacant	9
Doug Reeves, Archer	9
Chuck Maser, Grand Island	10
Barry Obermiller, Grand Island	10

Board Officers

Chairman	Deb VanMatre
Vice Chairman	Tom Downey
Secretary	Keith Ostermeier
Treasurer	Marvion Reichert

Staff Member

Staff Member	Position
Lyndon Vogt	General Manager
Jesse Mintken	Assistant Manager
Tom Backer	Projects Assistant
David Carr	Range Management
Kelly Cole	Administrative Assistant
Darren Cudaback	Precision Conservation
Tricia Dudley	Water Quality Specialist
Brandi Flyr	Hydrologist
Korey Gerken	Cozad Ditch Rider
Jim Harris	Thirty Mile ID Manager
Bill Hiatt	Resources Conservationist
Devin Hingst	Resources Conservationist
Dean Krull	UNL/CPNRD Project Coord.
Marcia Lee	Information/Education
Shane Max	Resources Conservationist
Courtney Olson	Office Assistant
Marci Ostergard	TMID Office Assistant
Mike Ostergard	TMID Technician
Collin Quandt	Agronomist
Michael Schmeeckle	Cozad Ditch Manager
Brody Vorderstrasse	Communications Assistant
Angela Warner	GIS Coordinator
Courtney Widup	Water Resources Technician
Luke Zakrzewski	GIS Image Analyst

NRD/NRCS Field Office Assistant

NRD/NRCS Field Office Assistant	County
Lexie Zubia	Hall
Kyla Friedrichsen	Merrick
Lisa Kennicutt	Dawson
Shelly Lippincott	Buffalo

NRD Board Welcomes New Member, Announces Vacancy

The Central Platte NRD Board of Directors is kicking off the year with a change in leadership, welcoming a new member and preparing to fill a recent vacancy.

John Stoltenberg of Cairo was elected to represent Subdistrict 7 in January following the general election. He ran unopposed for the seat, succeeding longtime board member Jerry Wiese of Grand Island, who chose not to seek re-election after 24 years of service.

Additionally, after 25 years of dedicated service and nearly perfect attendance, Director Ed Kyes of Central City announced his resignation at the February Board meeting.

Kyes first joined the Board in 2001, filling the Subdistrict 9 seat. Over the years, he took on several leadership roles, serving as Programs Committee Chair, Board Secretary (2005-2008), Vice Chairman (2009-2012), and Chairman (2013-2016).



Ed Kyes leads Starr Elementary students to activities at the Nebraska Children's Groundwater Festival. Kyes volunteered at numerous educational events, sharing his knowledge with young learners.

He also served on multiple committees: Water Resources, Water Quality, Eastern Projects, Well Variance, Integrated Water Management, Budget and Executive committees.

With Kyes' departure, the Board has begun the process of appointing a successor. The vacancy was advertised in local newspapers and the Board Nominating Committee will interview interested candidates. A recommendation will be made at the March 27th Board meeting. The appointed member will serve through December 2026.

Outreach Updates

Water Programs Update

A big thank you to the 87 attendees and speakers who joined us for the Annual Water Programs Update on February 11! Despite the cold weather, it was a great day for learning about water quality and related topics. Discussions covered new nitrogen recommendations and programs, health concerns related to high nitrates, and updates on fertigation trial results, drainage law cases, and the 2025 weather outlook. If you missed the event and would like more information on any of these topics, please call 308-385-6282.

Nitrogen Reduction Incentive Act Apps

The new Nitrogen Reduction Program (NiRIA), established under LB 1368, has received a strong response from producers interested in reducing commercial fertilizer use. This program provides incentives to participants who verify a nitrogen fertilizer reduction of either 40 pounds per acre or 15% of their baseline application rate.

CPNRD received 276 applications, covering 30,967 acres, with a total incentive request of \$389,993. While CPNRD's initial allocation was \$76,291, the Nebraska Department of Natural Resources has confirmed that additional funds are available to approve all applications received. This opportunity assists producers in improving their soil health and water quality while benefiting from financial incentives.

Will Your Corn Talk to You? (continued)

Results from the three-year study in Central Platte NRD showed an average 40.3 pound reduction of nitrogen applied with a reduction in yield of 2.6 bushel from grower-managed portions of the study.

Limitations such as time restraints to keep up with crop maturity for efficient application of N, unknown amount of N needed, willingness to invest in equipment, limitation of the range equipment was able to apply (minimum and maximum) rates of N, and very limited dealer adoption due to sprayers already busy.

The Next Step: Satellite Imagery-Based Nitrogen Management

To overcome these limitations, researchers at UNL transitioned to satellite imagery-based management for nitrogen application. Advancements in satellite technology—including improved spatial resolution and the availability of daily imagery—led to the development of a platform by Sentinel Fertigation, called N-Time.

In collaboration with Sentinel Fertigation, UNL researchers and graduate students established research sites across Nebraska, including the CPNRD, in 2021. The goal was to determine whether satellite imagery could improve nitrogen application efficiency in subsurface drip irrigation and center-pivot irrigated systems.

Central Platte NRD Three-Year Summary		
Three-year Average (11 sites)	SENSE	Grower
Total N Rate* (lb-N/ac)	162.4	202.7
Yield* (bu/ac)	225.0	227.6
Applied Nitrogen Use Efficiency* (lb-N/bu grain)	0.75	0.92

UNL/Sentinel On-Farm Research Three Year Summary		
Three-year Average (24 sites)	Imagery-Based	Grower
Total N Rate (lb-N/ac)	156	219
Yield (bu/ac)	245	249
Applied Nitrogen Use Efficiency (lb-N/bu grain)	0.65	0.89

Results showed that imagery-based nitrogen management reduced nitrogen application by 56 pounds per acre while only slightly lowering yield by 4 bushels per acre. At a corn price of \$5 per bushel and nitrogen cost of .50 cents per pound, the imagery-based method yielded a profit of \$1,147 per acre, compared to \$1,135 for the grower's traditional approach—a \$12 per acre advantage.

The Future: Letting Corn "Talk" Through Technology

Ongoing research and demonstrations continue to refine nitrogen management strategies. Imagery-based fertigation allows corn plants themselves to signal when nitrogen is needed, answering the question: "Do I or don't I need to fertigate?"

So, in a way, **yes—your corn is talking to you.**

Your CPNRD Contact: Dean Krull 402-469-0155 | dkrull1@unl.edu

Last Chance to Order Tree Seedlings

It's the final week to order tree and shrub seedlings for spring planting! The seedlings will arrive from Halsey soon and will be available for you to pick up by mid-April. Order today - some species are already sold out! **Cost:** \$31.25 for a bundle of 25 trees | 50% cost-share available for orders of 200+ trees

To learn more or to print a tree order form visit: www.cpnrd.org/conservation/trees-weed-barrier

Your CPNRD Contact: Kelly Cole 308-395-7134 | cole@cpnrd.org

Still Time to View the Sandhill Cranes



New crane viewing deck at the recently renovated Alda Crane Viewing site.

This season's Sandhill Crane migration is following a different pattern than in 2024. Unlike last year's early and record-breaking arrival, the cranes are appearing later—great news for those who still want a chance to see them!

Each spring, Sandhill Cranes journey through the Central Nebraska Flyway, beginning in late February. They first arrive in the eastern portion and gradually move west, staying until mid-April. In recent years, endangered whooping cranes have also been spotted among them.

For the best viewing experience, Central Platte NRD offers two premier crane viewing sites and two roadside turnouts. These locations are open

year-round with free parking. Recent upgrades—including new viewing decks and accessible concrete trails—ensure a comfortable and scenic experience. Plan your visit today and witness one of nature's most breathtaking migrations!

- **Gibbon Richard Plautz Crane Viewing Deck** is located 1.5 miles south of I-80 at Exit 285
- **Alda Crane Viewing Deck** is located 2 miles south of I-80 at Exit 305
- **Roadside Turnouts** There are two roadside turnouts for safe viewing. The first is located south and east of the Alda interchange on Platte River Drive, and the second is west of Rowe Sanctuary on Elm Island Road

For information on partner sites to reserve viewing blinds visit: nebraskaflyway.com

Download a brochure and map of the viewing sites near North Platte, Kearney, Gibbon, Alda, Grand Island and Hastings at: cpnrd.org/conservation/crane-viewing



A Look Back: Revisiting 2014

In 2014, CPNRD completed renovations on three irrigation canals in Dawson County. This effort began in 2010 when CPNRD partnered with the canal companies through agreements to purchase Six Mile Canal and 50% of Thirty Mile Canal; and to rehabilitate Cozad, Thirty Mile and Orchard Alfalfa (Southside) canals.

As part of the Platte Basin Habitat Enhancement/Coalition Program, the project received grant funding from the Nebraska Department of Natural Resources (NeDNR) (40%) and the Nebraska Environmental Trust (20%), which covered 60% of the project costs. The remaining 40% was shared between CPNRD and the canal companies.

Key Benefits of the Project:

- Groundwater recharge to enhance both surface and groundwater supplies.
- Progress toward achieving Fully Appropriated status.
- Enhance flows to the Platte River by diverting and retiming excess water.
- Returning natural flow irrigation rights to the river.
- Helping meet the requirements of the Platte River Recovery Implementation Program (PRRIP) agreement.

The renovated canals have also successfully met the requirements of LB962, which mandates returning the Platte River to its 1997 level of water use. In March 2024, the Nebraska Department of Natural Resources confirmed that CPNRD's management practices have been effective. Extensive modeling results showed that CPNRD has not only reached but exceeded its established targets, with no additional management actions needed.



The renovated canals allow excess flows to be diverted and retimed.

Want to receive the latest updates straight to your inbox? Sign up for the *In Perspective Newsletter* today! Send your email address to lee@cpnrd.org