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UPPER BIG BLUE NATURAL RESOURCES DISTRICT
BLUEPRINT

The Dollars and Sense of Regenerative Agriculture

Farmers have heard the hype. So called "regenerative agriculture" can boost yields, reduce inputs and erosion, and reverse the impacts of climate variability. It sounds great, but...what about financial sustainability? What does it cost to farm differently? What supports are in place to help with the transition to regenerative practices? And how would you know if it was making a difference?

Several of Nebraska's Natural Resources districts have joined together to provide a free regenerative agriculture conference for area producers and crop consultants, with a focus on the financial implications of management changes, to answer these questions and more.

The conference will be held on February 28 from 9 a.m. to 3 p.m., at the Cattle Conference Room of the Janzow Center on the campus of Concordia University in Seward. The conference is free and open to the public. However, registration is required by February 14. To register, please visit upperbigblue.org/regenerative-ag or call (402) 362-6601.

The conference will feature keynote speaker Mitchell Hora, founder and CEO of Continuum Ag. Hora will discuss the benefits of regenerative agriculture and how to implement these practices on Nebraska farms. He will also share his insights on how to make regenerative agriculture profitable.

Mitchell Hora

Hora is a seventh-generation farmer in Washington County, Iowa, with a background in agronomy consulting. He is a graduate of Iowa State University, with degrees in agronomy and ag systems technology. Continuum Ag serves to quantify and improve soil health through work with farmers, consultants, and agribusinesses. Continuum is also leading the charge to quantify, document, improve, and monetize farmer Carbon Intensity scores. Hora is a regular speaker on regenerative ag topics and was named to a 30 Under 30 list by Forbes Magazine in 2022 for his company's social impact.

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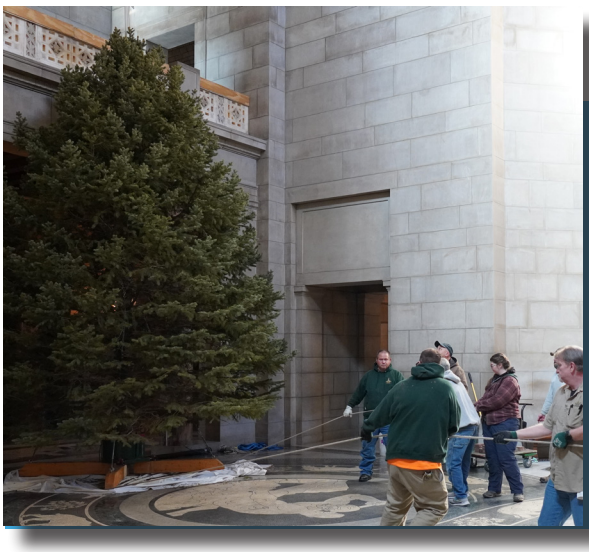

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In addition to Hora, the conference will feature Keith Berns, co-owner of Green Cover Seed, who will speak about the benefits of cover crops and the importance of soil health. A local producer panel will present a farm-level view of what's working in central Nebraska when it comes to regenerative agriculture practices.

Keith Berns

During breaks and lunch, attendees will have time to visit vendor booths provided by sponsoring agencies, to learn more about products and services available to boost regenerative on-farm practices. Sponsors for this event include: Gold Sponsors ($500+) Green Cover Seed, Central Valley Ag, Center for Rural Affairs, The Nature Conservancy, Klein Sales and Service, RLO Solutions, Practical Farmers of Iowa, EarthScout, Nebraska Department of Natural Resources, Dan Gillespie Soil Health Fund, Sandhills Global, NRCS-Nebraska; and Silver sponsors ($250-$499) Lincoln Premium Poultry and Stock Seed Farms.

The day will conclude with a viewing of the short film *To Which We Belong* and a group discussion moderated by Keith Berns, who is featured in the film. This event is co-hosted by the Upper Big Blue, Little Blue, Lower Big Blue, and Lower Platte South NRDs. For those producers in need of certification for nitrogen management, this event will count for renewal only in the Upper Big Blue NRD. To see other opportunities for certification or renewal, visit upperbigblue.org/events. ♦♦♦

Register now for the Regenerative Ag Conference

Drought & Tree Watering

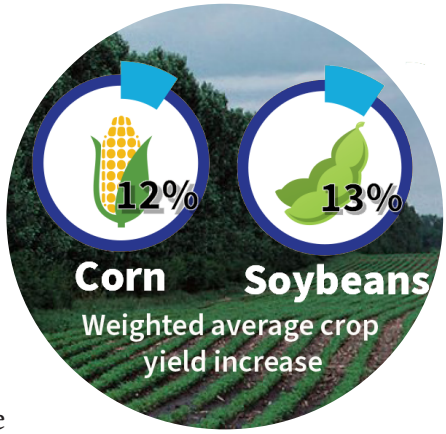
By Justin Evertson, Nebraska Forest Service

Wherever we can, we should be working to help trees and other landscape plants survive drought. Of course, when we're in a drought, water conservation is also an important topic. So how do we help trees and other important plants survive with water conservation in mind? Here are a few quick suggestions I would offer for helping trees and other landscape plants during drought:

- Water young and newly planted trees first. Even if you have to water from a bucket, every little bit helps. Try to water once a week until the rains return.
- Established trees that are more prone to drought are the next priority for watering. Using a soaker hose is a good idea for watering the broader-stretching root zones of established trees. Perhaps try to water every other week for established trees.
- Know the species! Some trees are amazingly drought tolerant including bur oak, red cedar, hackberry, honeylocust, coffeetree, elm, linden and silver maple. Other species are wimps including red maple, birches, magnolia, tulip tree, white pine and serviceberry.
- Location can make a big difference. Trees on north facing slopes or at the bottom of slopes or in irrigated landscapes will likely need less water than those at the top of slopes or those facing south or west.
- Trees planted in association with other things like shrubs or groundcovers that help shade the ground will dry out much more slowly than those surrounded by non-irrigated lawn.
- Mulch helps a lot to make young trees more drought resistant.
- Shifting to a more drought tolerant landscape is a good idea and plant selection and management is critical to this effort. We don't have time for it here, but lawn type and management is a big factor in this. Also, it's easier to reinvigorate a lawn after a drought than to replace important trees or shrubs. When drought kicks in, worry less about the lawn and more about the trees! ♦♦♦

Can windbreaks increase crop yields?

From "Working Trees", U.S. Department of Agriculture Forest Service



Windbreaks can serve many purposes in agricultural operations such as preventing soil erosion, providing wildlife habitat, and sequestering carbon. Another beneficial attribute of windbreaks is their ability to protect crops and improve crop production. Wind can have detrimental effects on soil and agricultural crops. Persistent winds can decrease soil temperature, increase water loss, and lead to erosion. Wind exposure can damage crops, causing yield and quality loss through desiccation, abrasion, bruising, and breakage. Slowing the wind can have indirect positive impacts as well. By redirecting the wind, windbreaks create microclimates that facilitate pollinator visits, enhancing crop production.

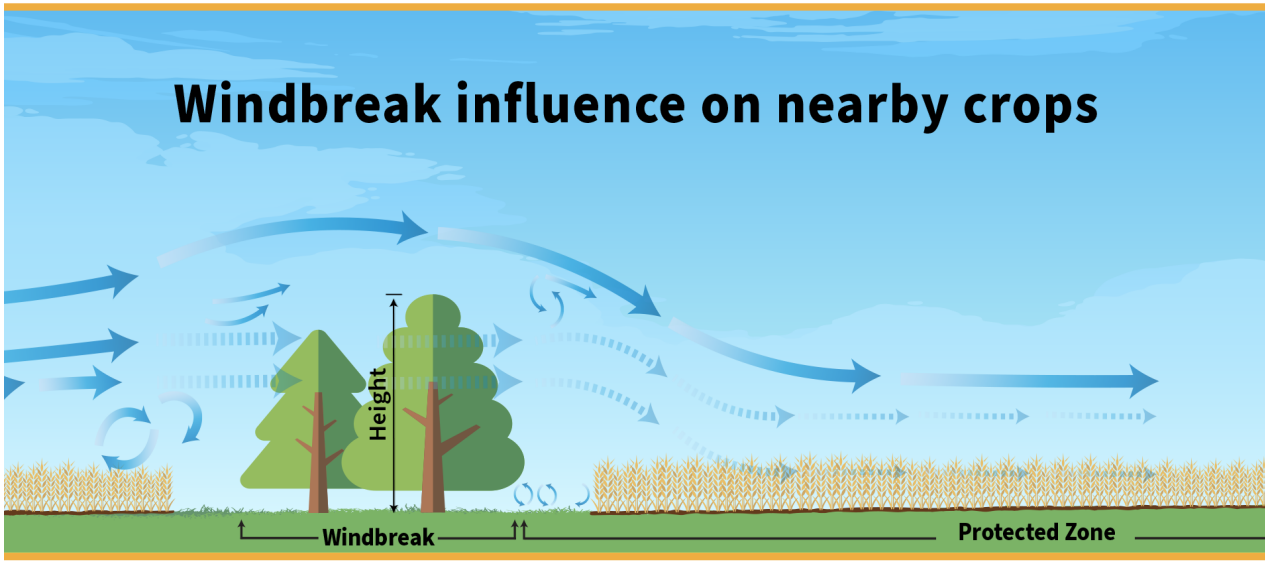
A windbreak often increases crop yields enough to compensate for the land taken out of production in the windbreak's footprint and any yield loss occurring directly adjacent to the windbreak. However, not all crops respond to the same degree and results can vary depending on local conditions. For example, in dry conditions, crops struggle to maintain adequate moisture, so increased transpiration and loss of soil moisture due to heat and wind can be devastating. Typically, positive yield benefits of windbreaks are most significant in drier years.

There are trade-offs between how much of the field is taken up by the windbreak and how much benefit is created by the windbreak. To maximize yield, generally less than 5 percent of the field should be planted to windbreaks. To achieve this, most crop protection windbreaks are made up of a single row of tall trees, as this occupies the least amount of space, protects area downwind, and decreases the number of windbreaks needed. In general, windbreaks increase crop yields most in the area of the field that is 3 to 10 times their height downwind from the windbreak, with some benefits seen even at 15 times the windbreak's height.

Notably, due to climate change, growing seasons may include frequent and intense droughts, heatwaves, and unusual weather patterns. Windbreaks are a key tool to help producers manage risk, maintain crop production, and enhance crop quality in the face of these challenges. Windbreaks can also support other soil health and climate adaptation practices, such as cover crops.

Agricultural producers should consider how a windbreak can best serve their farm. Important factors in planning include windbreak density, area, and height, prominent direction of wind, and crop species needing protection. Collaborating with natural resource professionals can help ensure a windbreak is designated and located to meet each farmer's needs.

♦♦♦



Windbreaks slow wind flow, which benefits the protected zone of a crop by maintaining adequate soil moisture, protecting crops from strong winds, and reducing soil erosion. (USDA Forest Service graphics.)

Beware of Herbicide Damage to Trees

By Jason Severe, Nebraska Forest Service

Thinking about spring? With the arrival of warmer weather comes preparations for the growing season ahead, and some of these preparations may include the use of herbicides to control weeds and other unwanted plants in our lawns and gardens. Care must be taken when using herbicides, however, to ensure that trees and other desirable vegetation are not negatively impacted.

The extent of herbicide damage to trees will vary depending upon factors such as the species and stage of growth of the tree; the type and concentration of the herbicide; and environmental factors (i.e., temperature, humidity, drought, etc.) Symptoms of herbicide damage can resemble those caused by insects, diseases or abiotic factors, adding to the complexity of accurately diagnosing herbicide injury. Chemical analysis of suspect plant tissue or soil samples can aid with herbicide injury diagnoses; however, testing can be costly and the timing of sample collection is critical.

Symptoms of herbicide damage in trees include deformed foliage (i.e., leaf cupping, curling, twisting, etc.); discolored leaves; leaves with dead spots; stunted growth; and branch dieback. Prolonged exposure to herbicides can also lead to tree mortality. It is important to note that the symptoms caused by a specific herbicide will vary depending upon the species of tree being affected.

The formulation of a herbicide (i.e., active ingredient(s), etc.) will influence its "activity" in the environment. Herbicides such as 2,4-D and dicamba can become a gaseous vapor (volatilize) during or following application, allowing them to "drift" via wind from the application site, potentially affecting off-site trees and other vegetation. While "woody brush" herbicides such as picloram (Tordon), triclopyr (Remedy), bromacil (Hyvar), prometon (Pramitol), clopyralid (Transline) and aminopyralid (Milestone) will persist in the soil and can potentially be absorbed by the roots of nontarget trees.

The likelihood of a tree recovering from herbicide injury will depend upon several factors, including the type of herbicide used; the timing and severity of the damage; and the sensitivity of the species to herbicides. Efforts that can aid the recovery of a tree from minor herbicide damage include watering during drought conditions and monitoring for and controlling insect or disease problems.

When it comes to using herbicides, the following are strategies (not all-inclusive) that homeowners should follow to protect their trees, as well as those of their neighbors, against herbicide damage: Read and follow all herbicide label directions; avoid spraying on warm (85-plus degrees), windy days; adjust sprayer nozzles to a coarser spray to reduce drift; use caution when using herbicides labeled for "woody brush" control; and shift weed control to the fall season when trees are less susceptible to herbicide injury. ♦♦♦

Above: Symptoms of herbicide damage in trees include deformed foliage (i.e., leaf cupping, curling, twisting, etc.); discolored leaves; leaves with dead spots; stunted growth; and branch dieback.

Questions about trees on your property? Give District Forester Kyle Yrkoski a call at (402) 362-6601 or email trees@upperbigblue.org.

Habitat Happenings
Nebraska Buffer Strip Program

The Nebraska Buffer Strip Program pays landowners to establish buffer strips on cropland adjacent to perennial and seasonal streams, ponds and wetlands or existing buffer strips with expiring contracts that were established after January 1, 1996. Buffer strips are designed to filter agrochemicals such as fertilizers and pesticides and prevent them from entering the water body. Two kinds of buffer strips are eligible – filter strips, which are narrow strips of grass and riparian forest buffer strips containing trees and grass. The minimum widths are 20 and 55 feet respectively. The maximum widths are 120 and 180 feet respectively. This program is administered by the Nebraska Department of Agriculture (NDA) from fees assessed on registered pesticides and the Natural Resource Districts (NRD).

The program is designed to be used in conjunction with the USDA Conservation Reserve Program (CRP), the Conservation Reserve Enhancement Program (CREP), or other programs. The Buffer Strip Program can also be used by itself as a standalone program. In addition to offering rental rates for both irrigated and non-irrigated cropland along with incentives for partnering with other government programs, there are incidental haying and grazing allowances in the program.

Rental rates are calculated as follows:

- For irrigated cropland where CRP, CREP, or other government-funded programs are also used, rental rates are $250 per acre minus payments from the other programs.
- For irrigated cropland where CRP, CREP, or other government-funded programs are not used, the rental rate is $225 per acre minus any other program payments.
- For non-irrigated cropland enrolled in CRP, CREP or other government-funded programs, the rental rate is equal to 20% of the average CRP soil rental rate.
- For non-irrigated cropland without CRP, CREP, or other government-funded programs, the rental rate per acre is equal to 120% of the average CRP soil rental rate plus $5 per acre, minus the payment rate from any other programs.
- In no case may payments from all programs exceed $250 per acre.

The contract length must be at least five years but not more than 10 years. The process to enroll in the Nebraska Buffer Strip Program begins by working with the Natural Resources Conservation Service (NRCS) to tentatively identify buffer strip locations and to complete the application. The completed application is submitted electronically to the NRD that the land is located in. Together with the NDA, the application is reviewed. If approved, the landowner enters into a formal agreement with the NRD. The landowner establishes and maintains the buffer strip according to NRCS Field Office Technical Guide practice requirements.

Interested landowners should contact the NRD office or USDA NRCS office to begin the application process. More information can be found at upperbigblue.org/projects or by calling the NRD at (402) 362-6601. ♦♦♦

Above: A flooded buffer strip grassed waterway; Below: a riparian buffer strip with shrubs. Give us a call to learn more about adding buffer strips to your property.

Upper Big Blue NRD Provides Nebraska's Capitol Christmas Tree

While the NRD is generally more concerned with growing trees rather than cutting them down, District Forester Kyle Yrkoski made an exception in 2023. When he heard that the Nebraska capitol building needed a special tree for display through the holiday season, he nominated a blue spruce from one of the NRD's recreation areas for consideration.

Heather Dinslage, a capitol groundskeeper leader, told the York News-Times that people submitted six to eight trees from mostly around Lincoln and Omaha for consideration. She visited each one and settled on the tree from the Upper Big Blue NRD. The 20-foot tree met the requirements — a full tree that would fit through a doorway in the capitol.

The tree was harvested in early December, transported to Lincoln, decorated, and displayed in the capitol rotunda until after the holidays. David Eigenberg, NRD general manager, attended a tree lighting ceremony and posed for a picture with the donated tree alongside of Nebraska Governor Jim Pillen (below).

"Harvesting a Christmas tree at an NRD recreation area is not allowed for the general public, however, providing a tree to the capitol building was a special honor for the district," noted Chrystal Houston, public relations manager. "Under normal circumstances the NRD does not allow recreation area trees to be harvested."

Interested in growing your own Christmas tree for future use? Check out the order form on the back page to order low cost bulk seedlings through the NRD's Conservation Tree Program. You can also order at upperbigblue.org/trees. ♦♦♦

Burke Scholarship Application Deadline Approaching

Each spring, the board of the Upper Big Blue Natural Resources District selects recipients as Burke Scholars. Carrying on the name and legacy of conservationist and former NRD board member Raymond Burke, the students chosen each receive $2,000 to put toward their higher educational pursuits in natural resources or a related field at a Nebraska college or university. Full details and application are available at upperbigblue.org/burke. Applications for 2024 are due March 22 and require three letters of recommendation that must be received by the deadline. ♦♦♦

One of the three 2023 Burke Scholar recipients, Morgan Ekhoff of Aurora (photo courtesy of Prairie Plains Resource Institute)

NRD Staff Transitions

The NRD staff has had a number of changes in the past few months, including new hires and promotions.

Longtime Water Conservationist Dan Leininger retired in the June of 2023 after 19 years with the NRD. Succeeding him in the role is Kaleb Fritz. Kaleb is new to the NRD and is responsible for annual nitrogen management training events, as well as improving irrigation management throughout the district.

Jessica Simants was recently hired to fill the water data assistant position. She will work closely with DeeDee Novotny, who has served as a water department secretary for 15 years and was promoted to water data specialist. Novotny is responsible for data management, including water use reporting, certification of irrigated acres, and operator or owner changes.

Lead Engineering Technician Jeff Ball retired in July of 2023 after 45 years with the NRD. Following in his footsteps is Jacob Mitchell, who has worked for the NRD for a year as a water resources technician. His new title is civil engineering technician.

Amanda McLeod previously served the NRD as the water data specialist. She has now moved into a water resources technician position.

Welcome to all of our new hires, and congratulations to those in new roles! ♦♦♦

Top: Fritz and Simants; Center: Novotny; Bottom: Mitchell and McLeod

BLUEPRINT

The **BLUEPRINT** newsletter is published regularly by the Upper Big Blue Natural Resources District.

The BLUEPRINT editor may be reached by phone at 402-362-6601; by email at chouston@upperbigblue.org; or by mail at:

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Upper Big Blue Natural Resources District

2024 CONSERVATION TREE PROGRAM ORDER FORM

Name _____

Address _____

City, Zip _____

Telephone _____

Email _____

- Each species must be ordered in lots of 25 unless ordering a small acreage package (50 trees).
- Sales Tax is calculated by the county in which the order will be picked up.
- You will be contacted after April 15 to pick up your order.
- The Upper Big Blue NRD will plant orders (within the District's boundaries) of 150 or more for an additional $1.18/tree. Call **402-362-6601** or email trees@upperbigblue.org for assistance creating a planting plan.

Please select the location where you prefer to pick up your order:

- O Upper Big Blue NRD Office (York)
- O Adams County NRCS
- O Butler County NRCS
- O Fillmore County NRCS
- O Hamilton County NRCS
- O Polk County NRCS
- O Saline County NRCS
- O Seward County NRCS
- O Sutton City Offices (Clay County)

Small Acreage Packages *contain 10 each of five species, 50 trees total, for $65 plus tax. (LIMITED QUANTITIES AVAILABLE)*

__ East Package
- Bur Oak
- Peking Cotoneaster
- Swamp White Oak
- Crabapple
- Redosier Dogwood

__ Wildlife Package
- Chokecherry
- Elderberry
- American Plum
- Golden Currant
- Redosier Dogwood

__ Flowering Package
- Serviceberry
- Redosier Dogwood
- Common Lilac
- Crabapple
- Caragana

Seedling Bundles *contain 25 each of a single species and cost $1.18 per tree ($29.50 per bundle) plus tax.*

Conifers
___ Co. Blue Spruce
___ Eastern Red Cedar
___ Ponderosa Pine

Deciduous
___ Cottonwood (Native)
___ Hackberry
___ Honeylocust
___ Silver Maple

Fruit & Nut
___ Black Walnut
___ Bur Oak
___ Crabapple
___ Hazelnut
___ Red Oak
___ Swamp White Oak

Shrubs
___ American Plum
___ Buffaloberry
___ Caragana
___ Chokecherry
___ Cotoneaster
___ Elderberry
___ Golden Currant
___ Lilac
___ Redosier Dogwood
___ Serviceberry
___ Skunkbush Sumac

Your Cost (Number of Small Acreage Packages Ordered _____ x $65) + (Number of Seedling Bundles Ordered _____ x $29.50) = $_____

Sales Tax (7.5%--Geneva, David City, Seward, York) (7%--Clay Center, Hastings, Osceola, Wilber) or (5.5%--Aurora) _____/$_____ **Your Total = $**_____

RESERVE YOUR SEEDLINGS BY APRIL 15

Please Return with Payment to: Upper Big Blue NRD
319 E 25th St
York, NE 68476

OR ORDER ONLINE AT WWW.UPPERBIGBLUE.ORG/TREES

--NRD Use Only--

Date Entered _____ Called / Mailed / Online / E-Mail / Walk-In

Date Paid _____ Check # _____ Cash ____ CC ___ Online ___

Special Instructions _____