

2002

EC02-725 Guide to Buffers in the Blue River Basin

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Nebraska Cooperative Extension EC 02-725

Guide to Buffers in the Blue River Basin



By M. Carla McCullough, Scott Josiah, and Tom Franti



Region 7

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- Upper Big Blue Natural Resources District
- Lower Big Blue Natural Resources District
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WHAT ARE BUFFERS?

Buffers are small areas or strips of land planted with trees, shrubs, or grasses that are typically located between cropland and a body of water. Buffers intercept pollutants and improve and enhance the environment. Buffers can take many forms, including riparian forest buffers, grass filter strips, grassed waterways, windbreaks, living snow fences, contour grass strips, cross-wind trap strips, shallow water areas for wildlife, field borders, alley cropping, herbaceous wind barriers, and vegetative barriers. While different buffers are designed for specific functions, they all help to improve water quality, increase wildlife habitat and retain soil. This publication will focus primarily on *riparian forest buffers* and *filter strips* because of their effectiveness in improving water quality in the Blue River Basin.

Riparian Forest Buffers

Riparian forest buffers are natural or re-established streamside forests made up of tree, shrub, and grass plantings. They buffer non-point source pollution of waterways from adjacent land, reduce bank erosion, protect aquatic environments, enhance wildlife, and increase biodiversity. Riparian forest buffers have a high capacity to stabilize streambanks, helping to keep more Nebraska soil within our borders. The trees of a riparian forest buffer help to shade surface water, keeping it at a more constant and cooler temperature. The colder water holds more oxygen than warmer water, benefiting fish and other aquatic species. High species diversity of trees, shrubs, and grass provide superior habitat for many birds and other animals.



Photo: Lynn Betts, USDA-NRCS

Filter Strips

Filter strips are strips or areas of grass and forbs situated between cropland, grazing land, or disturbed land (including forest land) and environmentally sensitive areas such as a stream, lake or wetland. Filter strips have a high capacity to filter sediment, pesticides and pathogens.



Photo: Lynn Betts, USDA-NRCS

WHAT DO BUFFERS DO?

Improve Water Quality

The vegetation in a buffer improves water quality by first slowing runoff, allowing sediment to settle out before entering the stream. Second, buffers serve as an area where nutrients and farm chemicals in runoff can soak into the soil. Once in the soil, vegetation and soil microbes metabolize nutrients, pesticides and pathogens. Since buffers slow runoff and allow water to soak into the soil, downstream flooding is reduced. Buffers also can improve water quality of downstream ponds and reservoirs, making for more enjoyable recreation and better fishing.

When properly installed and maintained, buffers can remove 50 percent or more of nutrients and pesticides, 60 percent or more of certain pathogens and 75 percent or more of sediment.



Photo: Lynn Betts, USDA-NRCS

Increase Wildlife Habitat

Buffers benefit fish and wildlife by providing improved cover, cleaner and colder water, nesting sites and travel corridors. Improving wildlife habitat by planting trees, shrubs, and grasses helps to preserve and enhance the biodiversity unique to the Blue River Basin.

Wildlife species such as bats, birds, and even insects can have many important benefits for crops. Brown bats eat significant numbers of leaf hoppers, cucumber beetles and adult beetles of corn root worms (diabroticite beetles), preventing the hatching of millions of eggs. Parasite wasps, downy woodpeckers, and northern flickers prey on corn borers as well.



Photo: Lynn Betts, USDA-NRCS

Protect the Land

Buffers trap snow and reduce blowing soil. They reduce noise and odor, protect livestock and wildlife from harsh weather and buildings from wind damage.

Buffers are a visual demonstration to your neighbors of your commitment to land stewardship.

Increase and Diversify Farm Income

Like any sound investment, buffers can increase and diversify farm income. Existing buffer programs offer up to 90% or more cost-share for installation of buffers, annual rental payments based on local rates plus 20% for some types of buffers and sign-up bonuses of \$10 per acre per year for the life of the contract. Many buffer programs offer 10 to 15 years of guaranteed payments, easing financial stress in the face of unpredictable commodity markets.

Buffers can increase crop yields and profits by protecting crops from drying, damaging winds and by providing habitat for natural predators of corn root worm and other crop pests. Buffers can be designed to save time and production costs by eliminating point rows, straightening field boundaries and avoiding equipment downtime and breakdowns by not operating in soggy soils.

Buffers can be planted to trees and shrubs that produce commercially valuable products, diversifying farm income. High-value specialty products harvested from buffers include nuts, fruits, woody florals, tree, shrub and grass seed and many others. Hunting and fishing fees can also provide additional income. Commercial harvest of specialty products is prohibited under most CRP contracts. However, CRP can be used to transition to commercial harvest at the end of the contract.

Financial returns from specialty woody crops produced in buffers can be substantial. For example, three years after planting, scarlet curls willow produced gross income of nearly US\$5.00/linear foot of planting along the row. Other high-value woody floral crops with markets in Nebraska include pussy willow, curly or corkscrew willow. Small fruits for use in the jam, jelly, juice and wine industry include sand cherry, elderberry, mulberry, chokecherry and choke berry. Valuable nut crops of improved cultivars of black walnut, northern pecan and hybrid hazelnut all have growing markets.



Protect Community Water Supplies

Buffers also have economic benefits for communities located downstream. Poor water quality is often a burden to many small rural communities whose water treatment systems cannot handle high pollutant loads in their water supply. Buffers help to reduce the levels of pollutants before the water reaches the community, reducing water treatment costs.

Unprotected waterway loses soil



Photo: Lynn Betts, USDA-NRCS

Buffers protect waterways



Photo: Bob Nichols, USDA-NRCS

Bare soil is subject to wind erosion



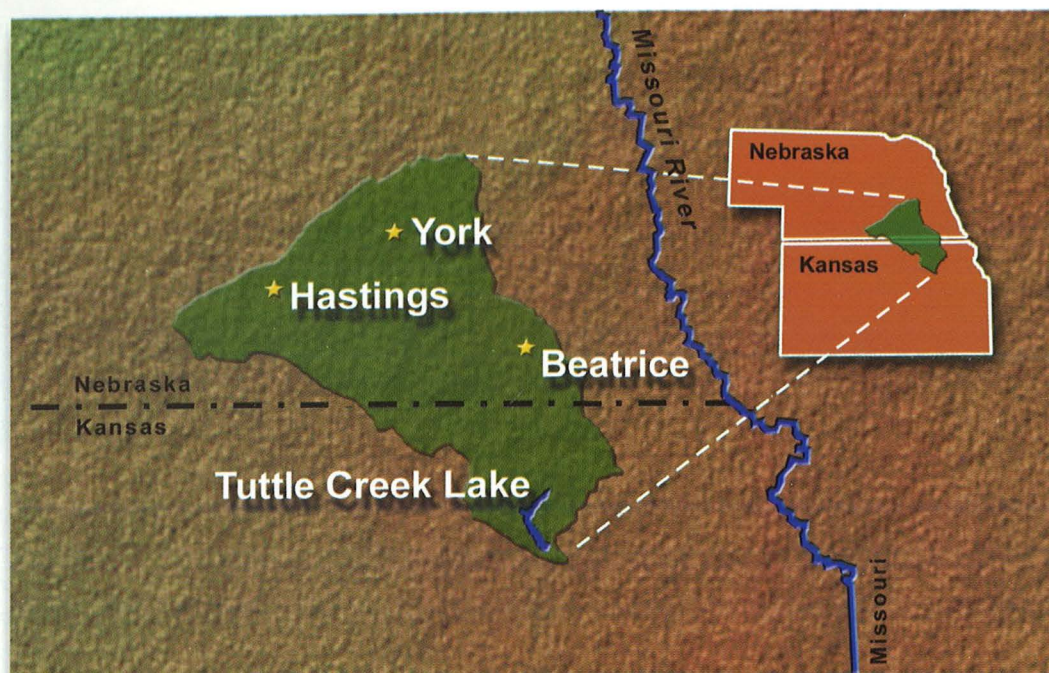
Photo: Gene Alexander, USDA-NRCS

Buffers help reduce wind erosion



Photo: Lynn Betts, USDA-NRCS

WHY FOCUS ON BUFFERS IN THE BLUE RIVER BASIN?



The Blue River Basin comprises a 7,200 square mile agricultural watershed in Kansas and Nebraska, including the Big Blue River and Little Blue River in Nebraska, and Tuttle Creek Reservoir in Kansas. Agriculture in the Blue River Basin ranges from irrigated continuous corn production in the upper Northwest basin to dryland rotations of corn, sorghum, soybeans, and wheat in the lower Southeast basin. In Nebraska, the basin contains three Natural Resources Districts (NRDs): the Upper Big Blue, the Lower Big Blue and the Little Blue.

Currently, elevated levels of sediment, nutrients and pesticides in the Blue River are of concern to people, both local and downstream. Eroded soil clogs ditches, transportation waterways and reservoirs, leading to costly and destructive dredging. Phosphorus stimulates algae blooms and oxygen depletion in state waters, threatening fishing, swimming and environmental diversity. Concern over atrazine in Tuttle Creek Reservoir has prompted action by the Kansas and Nebraska Departments of Agriculture, U.S. Environmental Protection Agency, Natural Resources Districts, USDA, agrochemical manufacturers, and the corn and sorghum grower associations in both Kansas and Nebraska to look at ways of reducing sediment, nutrient, and pesticide laden runoff in the Blue River Basin.

Unbuffered drainage offers no protection against soil loss and increases downstream flooding.



Photo: Lynn Betts, USDA-NRCS

Buffered drainage traps sediment, nutrients and chemicals and reduces flood damage.



Photo: Bob Nichols, USDA-NRCS

Unprotected soil erodes easily during spring rains (left). Buffers and other conservation practices help reduce soil erosion and sediment transport (right).



Photo: Lynn Betts, USDA-NRCS



Photo: Lynn Betts, USDA-NRCS

Substantial soil erosion occurs during heavy rainfall events (left). The permanent vegetation in buffers helps to protect against erosion all year (right).



Photo: Lynn Betts, USDA-NRCS



Photo: Lynn Betts, USDA-NRCS

Soil erosion reduces the life of reservoirs and farm ponds and severely impacts water quality (left). Buffers can protect downstream water resources (right).



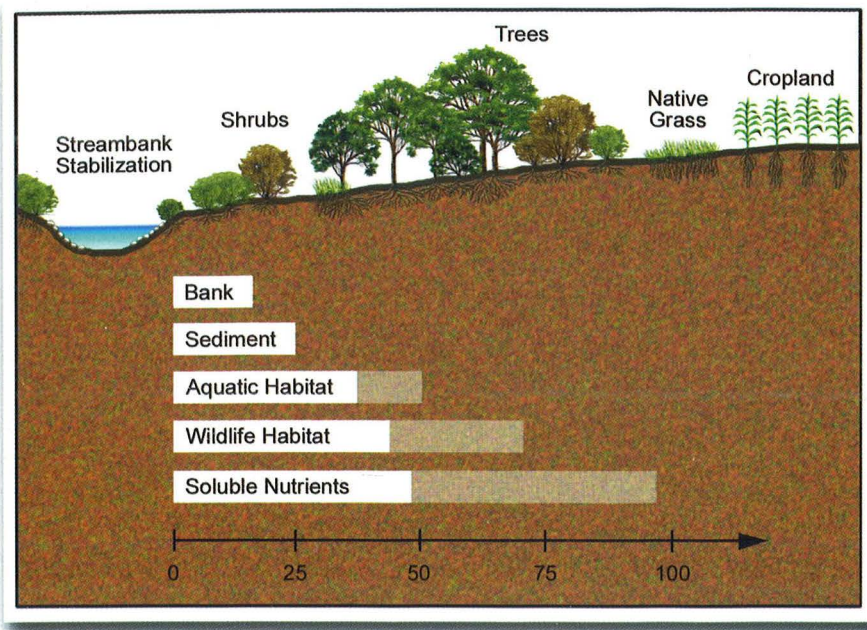
Photo: Tim McCabe, USDA-NRCS



Photo: Lynn Betts, USDA-NRCS

BUFFER DESIGN

Buffer design is based on factors such as landform, desired benefits, soil type, use of surrounding land, and downstream interests. For example, shrubs and trees better stabilize streambanks than do grasses. Grass filters are more effective than shrubs and trees for filtering sediment and nutrients, while shrubs are good at filtering pesticides and microbes. Grasses and woody plants each create unique niches for many species of wildlife. Combining grasses, shrubs and trees into one buffer multiplies the benefits – diversifying the landscape and preserving your land for future generations.



Buffers can be designed to maximize short and long term income. Existing buffer programs offer up to 90% cost-share for installation of buffers as well as 120% of average dry-land rental costs. Buffers can increase crop yields and quality by protecting crops from drying and damaging winds. In addition, many high-value specialty products may be harvested from buffers.

Table 1: Relative effectiveness of different vegetation types for providing specific benefits

Benefit	Vegetation Type		
	Grass	Shrub	Tree
Stabilize bank erosion	low	high	high
Filter sediment	high	low	low
Filter nutrients, pesticides, microbes			
sediment-bound	high	low	low
soluble	medium	high	medium
Aquatic habitat	low	medium	high
Wildlife habitat			
range/pasture/prairie wildlife	high	medium	low
forest wildlife	low	medium	high
Economic products	medium	high	high
Visual diversity	low	high	high
Flood protection	low	medium	high

Adapted from Dosskey et al., "How to Design a Riparian Buffer for Agricultural Land". *Agroforestry Notes*, No. 4, January 1997, with modifications by McCullough et al. for this guide.

BUFFERS AS PART OF A CONSERVATION SYSTEM

Imagine the Possibilities

Think of buffers as the last line of defense in a conservation system. Buffers perform most effectively when combined with other conservation practices such as terracing, conservation tillage and grassed waterways. These upland barriers reduce the amount of runoff flowing downhill to the buffer. Buffers trap pollutants more efficiently under lower flows, and require less maintenance when they are part of a conservation system.

In many cases, reestablishment of a buffer restores the natural grass and woodland system that protects water quality and enhances the environment. Buffers are part of a conservation system that works in preserving our water, soils and ecosystems. They enhance the land and quality of life for people in the Blue River Basin.



The original photo (left), showing contour farming, was digitally modified to include other elements for a whole-farm conservation system. The modified photo (right) incorporates terraces and grassed waterways as well as buffers for increased soil conservation and improved water quality downstream.

SOME COMMON CONCERNS ABOUT BUFFERS

Question If the buffer traps sediment, won't soil build up along the crop edge, creating wet spots, channels or gullies?

Answer Buffers are designed to work best when an even sheet of water flows across it. Using a blade to periodically remove sediment buildup from the crop edge of the buffer will help to prevent channeling of flow. When combined with other conservation practices on upland fields, buffers will require less maintenance and will perform even better.

Question In a riparian forest buffer, won't trees fall in the stream and back up water?

Answer In natural forested riparian buffers, trees do fall into the stream, providing nutrients and habitat to the aquatic ecosystem and potentially altering flow of water. If this is a major concern, one alternative to consider is to plant shrubs near the stream with trees further away. This buffer will still stabilize stream banks, improve water quality, reduce downstream flooding, and provide wildlife habitat, but won't block the stream.

Question How will I get a good stand of warm-season grasses when weeds take over so quickly in the spring?

Answer Warm-season grasses may establish slowly, sometimes taking two or more years to develop a good stand. Seeding failure is most often a result of poor weed control. Planting before weeds germinate in the spring is one of the best ways to establish grasses before competition becomes intense. In CRP acres, weeds must be controlled by either tillage, herbicides, crop competition, fire, and mowing or a combination of these methods. Avoid grazing or clipping warm-season grasses during the seeding year except for emergency weed control.

Question Does buffer installation require a lot of time and labor?

Answer Yes, buffers can be labor intensive the first year. But your local NRD or SWCD have programs under which they will install the buffer on your land for you. You'll still need to take care of the buffer until it is established and growing well, but it always takes some investment of time and energy to leave a high quality legacy to your children, grandchildren and greater community.

SORTING OUT BUFFER PROGRAMS

There are several federal, state and local programs that encourage farmers and ranchers to understand the economic and environmental benefits of buffer strips. Some programs offer financial incentives to landowners who install or maintain buffers on their land. The new 2002 Farm Bill made some changes to buffer-related programs. The following list gives a starting point for looking into buffer programs. The agency listed under each program will be able to explain the qualifications for the program and whether funding is currently available.

Conservation Reserve Program (CRP)

Contact: USDA, Natural Resources Conservation Service, Farm Service Agency

The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to voluntarily address soil, water, and related natural resource concerns on their lands. The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filterstrips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices. CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, Environmental Benefit Index Scoring, and conservation planning.

Environmental Quality Incentives Program (EQIP)

Contact: USDA, Natural Resources Conservation Service

The Environmental Quality Incentives Program (EQIP) provides a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.

EQIP contracts provide incentive payments and cost-share to implement conservation practices. Persons engaged in livestock or agricultural production on eligible land may participate in the EQIP program. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer. This plan identifies the appropriate conservation practice or practices to address identified resource concerns. The practices are subject to NRCS technical standards adapted to local conditions. The local conservation district approves the plan.

EQIP may cost-share up to 75 percent of the costs of certain conservation practices. Incentive payments may be provided for up to three years to encourage producers to carry out management practices they may not otherwise use without the incentive. Limited resource producers and beginning farmers and ranchers may be eligible for cost-share up to 90 percent. Farmers and ranchers may elect to use a certified third-party provider for technical assistance. An individual or entity may not receive, directly or indirectly, cost-share or incentive payments that, in the aggregate, exceed \$450,000 for all EQIP contracts entered during the term of the Farm Bill.

* Text regarding Federal programs derived from USDA-NRCS brochures.

Wildlife Habitat Incentives Program (WHIP)

Contact: USDA, Natural Resources Conservation Service

The Wildlife Habitat Incentives Program (WHIP) is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. Through WHIP, USDA's Natural Resources Conservation Service provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP agreements between NRCS and the participant generally last from 5 to 10 years from the date the agreement is signed.

WHIP is a highly effective and widely accepted program across the country. By targeting wildlife habitat projects on all lands and aquatic areas, WHIP provides assistance to conservation minded landowners who are unable to meet the specific eligibility requirements of other USDA conservation programs. The Natural Resources Conservation Service administers WHIP.

Wetlands Reserve Program (WRP)

Contact: USDA, Natural Resources Conservation Service

The Wetlands Reserve Program is a voluntary program which helps landowners protect, restore, and enhance wetlands on their property. NRCS provides technical and financial support to help landowners maximize wetland functions and values, and create optimal wildlife habitat on every acre enrolled in the program. This program offers landowners an opportunity to establish long-term conservation and wildlife practices and protection.

Forest Land Enhancement Program (FLEP)

Contact: Nebraska and Kansas Forest Services

The newly established Forest Land Enhancement Program (FLEP) provides financial assistance to landowners and encourages the long-term sustainability of nonindustrial private forest lands. It assists landowners in the active management of their forest lands and related resources. FLEP provides financial and technical assistance in woodlot management, timber stand improvement and tree planting and maintenance. FLEP replaces the FIP and SIP programs, previously administered by the Nebraska and Kansas Forest Services.

Emergency Watershed Protection Program (EWP)

Contact: USDA, Natural Resources Conservation Service

The Emergency Watershed Protection (EWP) program undertakes emergency measures, including the purchase of flood plain easements, to reduce runoff and prevent soil erosion in order to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood or any other natural occurrence is causing or has caused a sudden impairment of the watershed.

It is not necessary for a national emergency to be declared for an area to be eligible for assistance. The program assists sponsors and individuals in implementing emergency measures to relieve imminent hazards to life and property created by a natural disaster. Activities include providing financial and technical assistance to remove debris from streams, protect destabilized streambanks, establish cover on critically eroding lands, repair conservation practices, and purchase flood plain easements.

Nebraska Buffer Strip Program

Contact: Nebraska Department of Agriculture

The Nebraska Buffer Strip Program was implemented in January of 1999 through fees assessed on registered pesticides. Cropland adjacent to perennial and seasonal streams, ponds, and wetlands can be enrolled in buffer strips, which are designed to filter agrichemicals such as fertilizers and pesticides. 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.

While the program is used in conjunction with the USDA Conservation Reserve Program (CRP), it also can be used by itself. *Irrigated* cropland rental rates are up to \$150 per acre minus payments from other programs. Rental rates for *non-irrigated* cropland are dependent on the soils found in the submitted area, and are calculated as follows:

- For non-irrigated cropland with CRP, the rental rate per acre is equal to 20% of the average CRP soil rental rate using the three predominant soil types.
- For non-irrigated cropland without CRP, the rental rate per acre is equal to 120% of the average CRP soil rental rate plus \$5.00 per acre.

**Buffers have benefits
that reach far beyond
their borders.**

BUFFER CONTACTS

Who's working with buffers in the Blue River Basin?

Following is a list of agencies and their people who are currently working with landowners to establish buffers in the Blue River Basin area.

USDA-NRCS - Nebraska county offices within the Blue River Basin

NRCS - Adams County	Ken Franzen <i>Resource Conservationist</i>	(402) 463-6771	Hastings Service Center 2727 W 2 nd St., Suite 102 Hastings, NE 68901-4608
NRCS - Butler County	Steve Huber <i>Soil Conservationist</i>	(402) 367-3074	David City Service Center 317 E ST David City, NE 68632-1635
NRCS - Clay County	Janet Valasek <i>Resource Conservationist</i>	(402) 762-3569 ext 111	Clay Center Service Center 120 W Fairfield St Clay Center, NE 68933-1437
NRCS - Fillmore County	Kent Norquest <i>Resource Conservationist</i>	(402) 759-4014	Geneva Service Center 120 S 12th St, Rm 2 Geneva, NE 68361-2101
NRCS - Gage County	Sam Cowan <i>Soil Conservationist</i>	(402) 223-3125	Beatrice Service Center 200 N 24th St. Beatrice, NE 68310-3427
NRCS - Hamilton County	Mark Nowack <i>Resource Conservationist</i>	(402) 694-6163 ext 112	Aurora Service Center 1218 K St Aurora, NE 68818-2012
NRCS - Jefferson County	John Mayberger <i>Resource Conservationist</i>	(402) 729-6134 ext 104	Fairbury Service Center 305 5 th St Fairbury, NE 68352-2530
NRCS - Nuckolls County	Jon Myers <i>Civil Engineering Technician</i>	(402) 225-2311 ext 111	Nelson Service Center 175 East 4 th St. Nelson, NE 68961
NRCS - Polk County	Kristi Schleif <i>Resource Conservationist</i>	(402) 747-2111	Osceola Service Center 530 Nebraska St. Osceola, NE 68651
NRCS - Saline County	Ross Scott <i>Resource Conservationist</i>	(402) 821-3292 ext 109	Wilber Service Center 211 South Wilson Wilber, NE 68465
NRCS - Seward County	Connie Tvrdy <i>Resource Conservationist</i>	(402) 643-6231 ext 112	Seward Service Center 322 S 14 th St. Seward, NE 68434-2321
NRCS - Thayer County	Bryan Euse <i>Resource Conservationist</i>	(402) 768-6228 ext 107	Hebron Service Center 1220 South Ave. Hebron, NE 68370-1925
NRCS - York County	Dick Hayes <i>Biologist</i>	(402) 362-5700 ext 111	York Service Center 419 W 6 th St. York, NE 68467-2900

Nebraska Natural Resources Districts

Little Blue NRD	Mike Onnen <i>General Manager</i>	(402) 364-2145	PO Box 100 Davenport, NE 68509-4756
Upper Big Blue NRD	Rod DeBuhr <i>Water Dept. Manager</i>	(402) 362-6601	105 Lincoln Ave. York, NE 68467
Lower Big Blue NRD	Scott Sobotka <i>Land Resources Specialist</i>	(402) 228-3402	805 Dorsey Street PO Box 826 Beatrice, NE 68310

University of Nebraska-Lincoln Cooperative Extension

Tom Franti <i>Extension Surface Water Management Engineer</i>	(402) 472-9872	234 LW Chase Hall Lincoln, NE 68583-0726
Scott Josiah <i>State Extension Forester</i>	(402) 472-6511	107 Plant Industry Lincoln, NE 68583-0814

Nebraska Department of Agriculture

Craig Romary <i>Environmental Protection Specialist</i>	(402) 471-6883	PO Box 94756 Lincoln, NE 68509-4756
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Nebraska Forest Service

Scott DeWald <i>(District & Extension Forester)</i>	(402) 762-3535	Box 66 Clay Center, NE 68933-0066
Steve Karloff <i>(District & Extension Forester)</i>	(402) 472-3645	109 Plant Industry Lincoln, NE 68583-0815

Visit the website at <http://conservationbuffers.unl.edu> for more information on buffers and links to many other related sites.



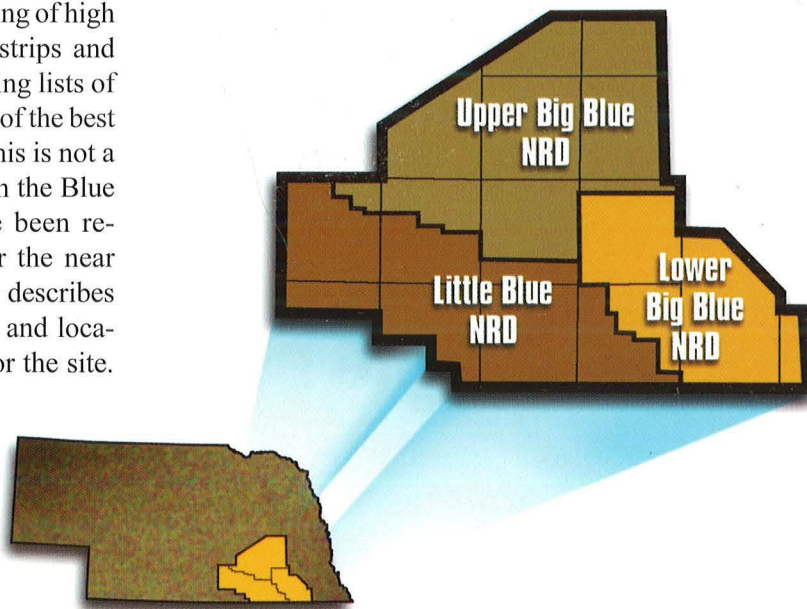
Photo: Lynn Betts, USDA-NRCS

Well-established buffer and wildlife habitat in west central Iowa with terraces, pond, conservation tillage and other conservation practices create a whole farm conservation system.

Guide to High Quality Buffers in the Blue River Basin

High Quality Buffers in the Blue River Basin

With the help of the many partners in this project, we have compiled a sampling of high quality buffers, both grass filter strips and riparian forest buffers. The following lists of buffers contain a selection of some of the best buffers in the Blue River Basin. This is not a comprehensive list of all buffers in the Blue River Basin. Many buffers have been recently planted or are planned for the near future. A summary for each buffer describes the vegetation, approximate acres and location, and gives a contact person for the site.



How do I find the buffer, if I want to visit it?

Call the contact person listed with the buffer to find out the exact location and to get permission to visit the site. This will ensure that the planting is still there when you get there, that you get accurate directions, and that the landowner will be aware of who is coming on their land. Please respect the privacy and property of these people who have been most generous to us with their time, information and planting sites.

How to Use This Section

Buffer sites are arranged by counties within the Blue River Basin. Each page includes a county outline expanded from the outline of the Blue River Basin. You can use this list to identify buffer locations and types, plan field tours and contact landowners or agencies for more information about the buffer.

Key to buffer sites:



..... Grass

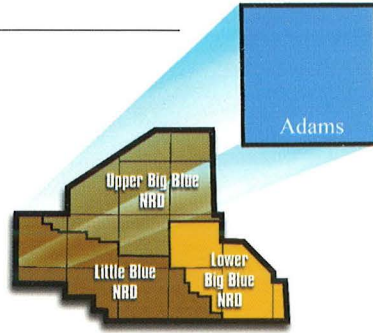


..... Shrubs



..... Trees

Adams



Dave Fredricks
Ayr, NE
(402) 463-8228

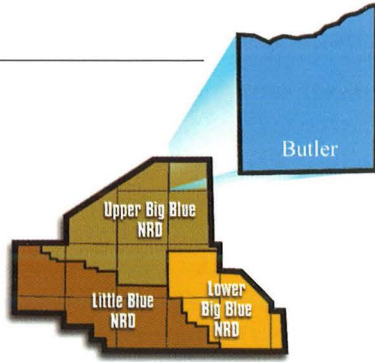
Warm and cool season grass buffer
(2 acres).



Roger Wright
Hastings, NE
(402) 463-3030

Cool season grass buffers in three different
locations (6 acres).

Butler



Don Dolezal
Brainard, NE
(402) 545-2169

Grass, shrub, trees planted (23.4 acres). Beavers are cutting down planted cottonwood trees.



Glenn Kilgore
Rising City, NE
(402) 542-2168

Two plantings of trees and shrubs for riparian buffer, including cottonwoods, maples, green ash. Established in 1997 (5.5 and 8.5 acres).



Don Moravec
David City, NE
(402) 549-2351

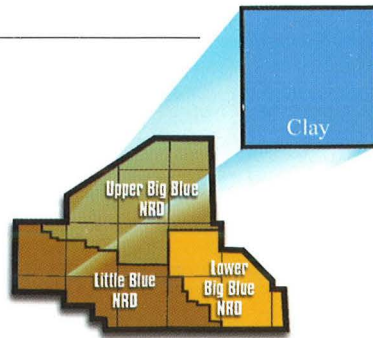
Don has seen more quail since grass buffer was established (2.1 acres).

Don has seen more quail since establishing his buffer.



Photo: Jeff Yammer, USDA-NRCS

Clay



Craig Buescher
Deweese, NE
(402) 262-2311

Woodland planting (5-10 acres).



Don Shaw
Edgar, NE
(402) 224-3102

All grass buffer.



Gary Skalka
Deweese, NE
(402) 262-2302

Walnut woodlot planted 16 years ago, located along road (8 acres).



Donaghadee Farms
Edgar, NE
Contact Janet Valasek
Clay County NRCS
(402) 762-3569 ext 111

Grass buffer around wetland (3 acres)



Barry and Sharon Sheridan
Sutton, NE
Contact Janet Valasek
Clay County NRCS
(402) 762-3569 ext 111

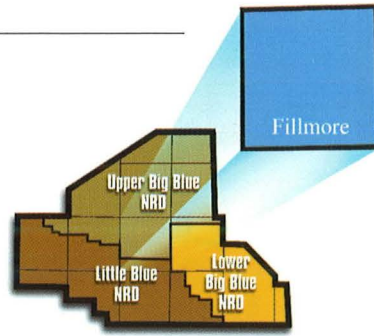
All grass buffer.



Gary and Angie Biester
Clay Center, NE
Contact Janet Valasek
Clay County NRCS
(402) 762-3569 ext 111

All grass buffer (1.5 acres) planted around 3.4 acres of wetland.

Fillmore



HIGH QUALITY BUFFERS IN THE BLUE RIVER BASIN



James Lovegrove
Fairmont, NE
(402) 268-4321

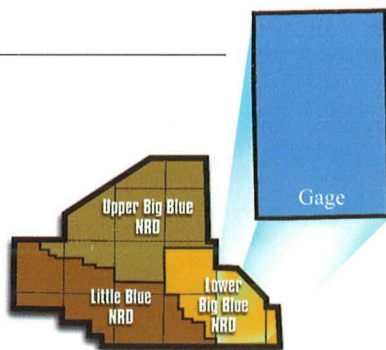
Grass buffer planted in 1999 along
Indian Creek (5 acres).



High-value specialty products harvested from buffers include nuts, fruits, woody florals, tree, shrub, and grass seeds, and many others.

Photo: Lynn Betts, USDA-NRCS

Gage



Stan Hays
Blue Springs, NE
(402) 645-8178

Grass buffer planted to big bluestem, western wheatgrass and Indiangrass in April 2000 (3.2 acres).



Roy Mulder
Firth, NE
(402) 791-2391

Switchgrass buffer planted in April 1999 (10.2 acres).



Steve and Toni Spilker
Beatrice, NE
Contact Scott Sobotka, Lower Big Blue NRD
(402) 228-3402

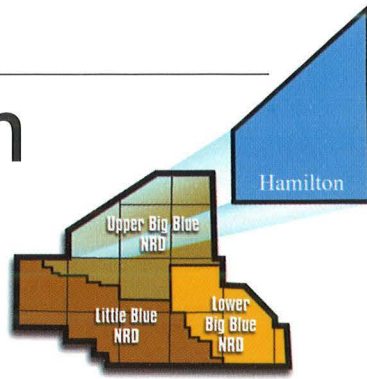
Native grasses and over 2000 shrubs, deciduous and conifer trees planted in 2002 (10.6 acres).



Terry Zvolanek
Wymore, NE
(402) 645-8359

Grass buffer planted to switchgrass and big bluestem in April 1999 (8 acres).

Hamilton



Jim Askey
Trumbull, NE
(402) 743-2269

Grass buffer planted to switchgrass, big bluestem, western wheatgrass during Spring 2000 (53.5 acres).



Tedd Bish
Giltner, NE
(402) 849-2566

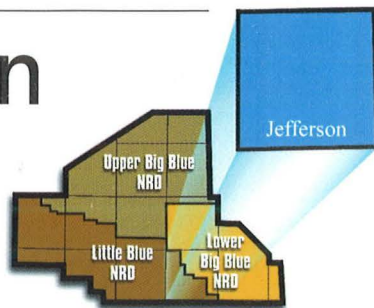
Grass and tree planting including walnut and green ash with short native grass between tree rows (5.2 acres).



Harvey Buhr
Doniphan, NE
(402) 845-2346

Grass buffer planted to switchgrass, big bluestem, and western wheatgrass during Spring 2001 (6.6 acres).

Jefferson



Marvin Moerer
Fairbury, NE
(402) 729-2845

Trees and shrubs planted on a marginal pasture converted to riparian buffer (6.4 acres).



Bill Glenn
Fairbury, NE
(402) 749-3215

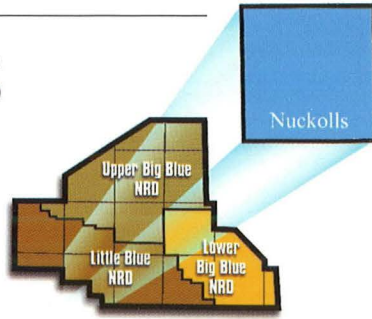
All grass buffer (22.5 acres).

Great blue herons can be found along water areas that support a fish population. In Nebraska they favor cottonwood groves for nesting.



Photo: Tim McCabe, USDA-NRCS

Nuckolls



Terry Bauer
Oak, NE
(402) 226-3511

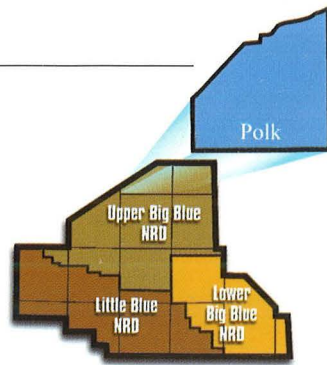
Grass, shrubs and trees planted during Spring 2002 along Little Blue River (7 acres).



Mike Buresh
Davenport, NE
(402) 364-2356

Grass, shrubs and trees, with some planted during Spring 2002 along Little Blue River.

Polk



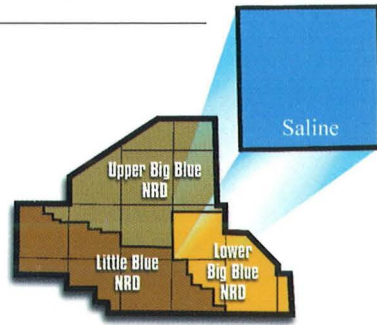
Contact Polk County NRCS regarding buffers in that county.

Buffers can be planted to trees and shrubs that produce commercially valuable products, diversifying your income.



Photo: Lynn Betts, USDA-NRCS

Saline



Darin & Wendy Keller
Wilber, NE
(402) 821-2580

Grass, shrubs and trees planted for riparian buffer enrolled in CRP (2.5 acres).



Doug & Sheila Garrison
Malcolm, NE
(402) 796-2208

Grass, shrubs and trees planted for riparian buffer enrolled in CRP (11.4 acres).



Roger & Judy Rada
Tobias, NE
Contact *Scott Sobotka*,
Lower Big Blue NRD
(402) 228-3402

All grass and grass/shrub/tree buffers enrolled in CRP. Planted in 2001 with variable widths (15.8 acres).



George & Edna Scherling
DeWitt, NE
(402) 656-3104

All grass buffer enrolled in CRP (3.8 acres).



Lower Big Blue NRD
Contact: *Scott Sobotka*
Beatrice, NE
(402) 228-3402

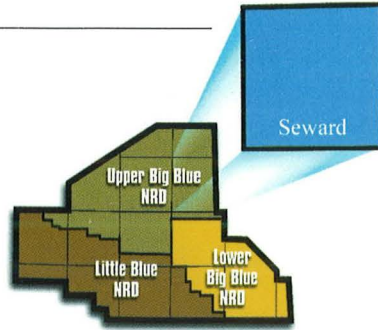
All grass buffer not enrolled in CRP (2.1 acres).



Michael Stehlik
Crete, NE
(402) 826-5292

All grass buffer planted along Blue River in variable widths. Enrolled in CRP.

Seward



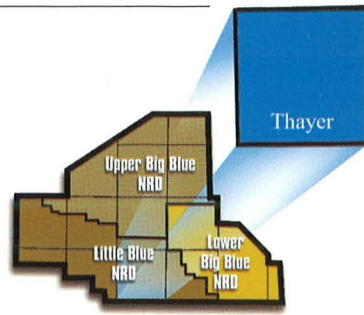
Don Peterson
Seward, NE
Contact Connie Tvrdy,
Seward Co., NRCS
(402) 643-6231, extension 112

Buffer planted along Blue River.

Pheasants use grass buffers for nesting cover.



Thayer



Scott DeWald
Hebron, NE
(402) 762-4425

Woodland planting (9 acres).



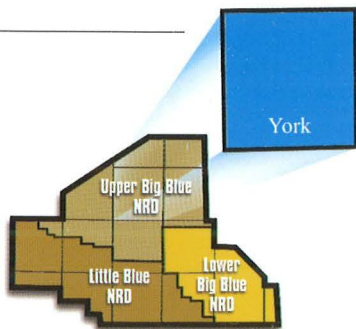
Orville Pohlmann
Deshler, NE
(402) 365-7676

Grass buffer (8 acres).



Valuable nut crops such as black walnut have growing markets.

York



Dean Due
Exeter, NE
(402) 576-3460

Grass buffer seeded in 2001 under the Wetland Reserve Program (11 acres).



John Ellis
York, NE
(402) 362-2630

Field windbreak and CRP around wetland - seeded 2002 (11 acres).



Scott Gonnerman
York, NE
(402) 362-5250

Trees planted with native grasses seeded between (6.3 acres).



Allan Janzen
Henderson, NE
(402) 723-5764

Grass buffer (3 acres).



Ken Janzen
Henderson, NE
(402) 723-4842 or 7940

Grass buffer seeded in August 2000 (5.5 acres).



Boyd Smith
York, NE
(402) 362-7707

Warm season grass buffer (2 acres).



Eugene Wiese
Beaver Crossing, NE
(402) 534-2148

Grass buffer seeded in 2002 (10 acres).



Dan Zierott
Bradshaw, NE
(402) 736-4645

Grass buffer seeded in January 2002 on