

Definition of field borders

Field borders are a strip or band of permanent vegetation established on the edge of a cropland field.

Purposes of field borders

Field borders can be used to:

- connect grassed waterways, filter strips, and other vegetative practices for ease of maintenance or harvest
- develop setbacks from sensitive areas when applying pesticides or fertilizers
- serve as turn and travel areas for equipment
- provide loafing areas for livestock
- enhance wildlife habitat
- assist with wind or water erosion control by trapping soil and organic sediment
- serve as a nursery area for beneficial insects or trap areas for pests
- reduce competition to the crop from adjacent wooded areas
- provide additional forage or crops grown for seed production
- provide setback areas from utility rights-of-way

Benefits

Field borders can be a cost-effective method to reduce erosion and sedimentation, provide better access to the field, and enhance wildlife habitat. This makes them attractive to producers, such as tenant farmers, who may not control the land for long periods, and are thus unwilling to make large investments in conservation practices.

Function

Field borders can be the “picture frame” for a combination of good conservation practices (fig. 3d-1). They provide a readily distinguishable buffer or safety zone around the edge of the field. The width can be varied and may eliminate point rows and end row planting.

Field borders differ from filter strips in a number of ways. First, filter strips are placed downgradient from areas that contribute contaminants to entrap these pollutants. Field borders are placed around perimeter areas of cropland that may or may not contribute off-site contaminants. Second, field borders need to be only wide enough to accommodate turning equipment. Filter strips are required to be designed to meet soil, climate, slope, and contributing area criteria. Third, field border vegetation is selected to tolerate equipment traffic and soil compaction. Filter strip vegetation must be stiff-stemmed and upright to retard water flow and trap contaminants.

To some degree field borders can:

- trap sediment in runoff
- filter storm water
- infiltrate storm water
- adsorb and decompose organic material and/or pollutants
- serve to enhance wildlife food, nesting, or escape cover if the proper plant species and management are used
- serves as an area to harbor beneficial and pest insects.

Figure 3d-1 Field borders and grassed waterways are among buffer options



Design considerations

Field borders must be at least 20 feet wide. The designed width will depend on the intended purposes. This often is the only conservation practice the general public can identify on some fields. Hunters and wildlife biologists will look upon it as travel lanes and nesting cover or food plots for some species. Neighboring producers will see it as an economical method for you to keep your soil from washing or blowing onto their property. Field borders may also diversify the operation if enough acres are used for forage or seed production.

When other purposes or functions of the vegetation on the edge of the cropland field is necessary, the criteria for that practice meeting the purpose or function must be followed. For example, if the field border is to become a filter strip, then the criteria of the filter strip standard will be followed.

Location

The practice is intended to link other vegetative practices together and provide the producer travel lanes to manage those practices without getting into the crop area.

Field borders are established at the perimeter of cropland fields or to connect other vegetative buffer practices, such as grassed waterways, filter strips, or contour buffer strips, so that maintenance can be performed during the crop growing season. Field borders can also be placed in strategic areas that could serve as nursery areas for beneficial insects or trap strip areas for pests. Turnrow areas or headlands can be established as a field border.

Layout

Field borders should be established wide enough to accommodate turning equipment and harvesting. They are generally more than 20 feet wide. Local design criteria should be developed for border widths that provide wildlife enhancement. Field border widths and vegetation selection should be based on the habitat requirement of the desired wildlife species. Generally, the purpose of wildlife enhancement will not be the sole reason for selecting this conservation buffer

practice. Other wildlife conservation practices would be more appropriate. For field borders, wildlife enhancement comes in conjunction with any of the previously stated purposes for field borders.

Application setback distances for biosolid and chemicals follow local regulations and label requirements. For example, field borders can be used as the setback area required for pesticide application near waterbodies. Label requirements are 66 feet for atrazine.

Plant materials information

Vegetation established within a field border should be selected to meet the functional objectives of the border and the objectives of the landowner.

For turnrows or headlands, the vegetation must withstand equipment traffic and soil compaction. Consider the soils texture, moisture conditions, and chemical properties when selecting vegetation species and mixtures. Legumes and other forbs are desirable vegetation if forage harvesting is an objective of maintaining the field border. Specific forbs and grasses may be used to harbor beneficial insects. When the field border becomes a filter strip on the downgradient side of the field, then stiff, upright stemmed vegetation is required.

Where woody field borders are desired, see Chapter 3j, Windbreak/Shelterbelt.

Operation and maintenance

Field borders can require maintenance to repair storm damage. Maintenance may also be necessary to reseed areas disturbed by tillage or traffic. Address the need for fertility, mowing or harvest schedules, and weed control. If the timing is critical to a certain operation, this can be noted. Limit the application of farm chemicals by shutting off sprayers before entering the field border.

Information needed to fill in job sheet

First, the purpose or purposes need to be agreed upon.

Species selection is the most critical issue. The field border may need to have more than one species planted in a mixture or in alternating strips to accomplish the desired purpose. Species that tolerate traffic are needed where intensive travel lanes are located. Generally those species have low growing points. For more details on differences in plant morphology, see the NRCS National Range and Pasture Handbook, chapter 5-2. Another important resource for salt tolerance and plant nutrient uptake is the NRCS Agricultural Waste Management Field Handbook, chapter 6.

The species as well as the total pounds of pure live seed required for each species can be recorded. If the seeding is a mixture, the percentage of each species should be recorded.

The width can be tailored to the field as long as the minimum design distance is obtained. An overlay of the field may be helpful for irregular fields.

The length is to be determined as well as the acres for the practice.

The slope of the border can be recorded.

Soil amendments for establishment can be recorded. This information generally comes from the soil test.

Enter the details of seedbed preparation and planting methods. This could include methods of tillage, planting depth, and the necessity for special considerations, such as mulching.

A field border is probably the easiest of all conservation practices to apply. Apparently soil conservation is at odds with food production because the worker of the land always has more immediate problems to solve than conserving the soil. The proper management of the soil, which also needs urgent attention, is left in second place.”

Carlos Crovetto *Stubble Over the Soil* 1996

Anticipated harvest and maintenance work can be entered in the notes section of the job specifications sheet. If wildlife habitat is a purpose of the practice, then a schedule of mowing and spraying operations acceptable for the target wildlife species should be given.

Case example

A producer in central Texas installed several grassed waterways and terraces on the erodible slopes of a field. On the part of the field that was not terraced, the producer installed contour buffer strips. After considering the maintenance requirements of the waterways and contour buffers, the producer elected to install a network of field borders to connect the vegetated areas for equipment travel and to maintain the vegetation. This vegetation also will enhance habitat for bob white quail and other birds. Bermudagrass was planted in the heavy traffic areas, but the remainder was established to a native mix of switchgrass, sideoats grama, and little bluestem to enhance habitat for the quail. This mixture will complement the existing habitat around the field and will not spread out of the border area as quickly as bermudagrass. Weed control will consist of spot treatment for johnson grass. Mowing for hay or shredding will not be done before June 15 each year to protect the nesting of quail.

Additional reading

Crovetto, Carlos L. 1996. Stubble over the soil - the vital role of plant residue in soil management to improve soil quality. American Society of Agronomy.

Heidenreich, Lynn King, Y. Zhou and T. Prato. Watershed scale water quality impacts of alternative farming systems.

United States Department of Agriculture, Natural Resources Conservation Service. National Range and pasture handbook. Chapter 5-2.

United States Department of Agriculture, Natural Resources Conservation Service. Agriculture waste management field handbook. Chapter 6.

USDA Field Borders

Conservation Practice Job Sheet

386

Natural Resources Conservation Service (NRCS)

April 1997

Landowner _____



Definition

A field border is a band or strip of perennial vegetation established on the edge of a cropland field.

Purpose

A field border reduces sheet, rill, and gully erosion at the edge of fields; protects water quality by trapping sediment, chemical and other pollutants; provides a turning area for farm equipment; and provides wildlife habitat.

Where used

- On the outside edges of fields.
- Complementary to a conservation management system.

Requirements for establishing field borders

Field borders should be a minimum of 20 feet wide and should be wide enough to allow turning of farm equipment.



Conservation management system

Field borders are normally established as part of a conservation management system to address the soil, water, air, plant, and animal needs and the owner's objectives. A field border used with contouring, contour stripcropping, cross-slope farming patterns, or terraces eliminates the normal planting of end rows or headlands in uphill and downhill directions. It also provides a turning area for farm equipment, which reduces sheet, rill, and gully erosion. Field borders can also provide forage production and improve farm aesthetics. They are most effective when used in combination with other agronomic or structural practices to provide conservation benefits.

Operation and maintenance

Inspect and repair field borders after storms to fill in gullies, remove sediment, reseed disturbed areas, and take other measures to ensure the effectiveness of the border. Mow (and harvest if possible) field border vegetation during noncritical times for wildlife to encourage dense vegetation growth.

Wildlife

Field borders can enhance wildlife objectives. Benefits depend on the vegetative species used and management practiced. Consider using adapted native vegetative species that can provide food and cover for important wildlife. Increase width, if needed, to provide necessary protection for nesting animals from predators. Delay mowing of grassed area until after the nesting season for ground-nesting birds and animals.

Specifications

Site-specific requirements are listed on the specifications sheet. Additional provisions are entered on the job sketch sheet. Specifications are prepared in accordance with the NRCS Field Office Technical Guide and the Field Border practice standard (386).

Field Borders – Specifications Sheet

Landowner Buddy F. BorderField number 1

Purpose (check all that apply)	
<input checked="" type="checkbox"/> Wildlife habitat	<input type="checkbox"/> Trap sediment, nutrients, pesticides, other contaminants
<input checked="" type="checkbox"/> Stabilize field boundaries, turnrows, and headlands	<input type="checkbox"/> Erosion control
<input checked="" type="checkbox"/> Provide protective turnrow or equipment travel lane	<input type="checkbox"/> Other (specify):

Field border layout (For exact location see job sketch)	Field border 1	Field border 2	Field border 3
Border width (ft)	30	25	
Border length along edge of field (ft)	2,150	4,900	
Area (ac)	1.5	2.8 + 0.6	
Slope (%)	3	2	
Species #1	Switchgrass 50%	Hybird Bermuda grass	
Species #2	Sideoats Grama 25%		
Species #3	Little Bluestem 25%		
Seeding rate (PLS) (lb/acre)	6 lb pls/ac	160 lb/ac	
Lime (tons/acre)	0	0	
N (lb/acre)	15	15	
P ₂ O ₅ (lb/acre)	50	50	
K ₂ O (lb/acre)	30	30	

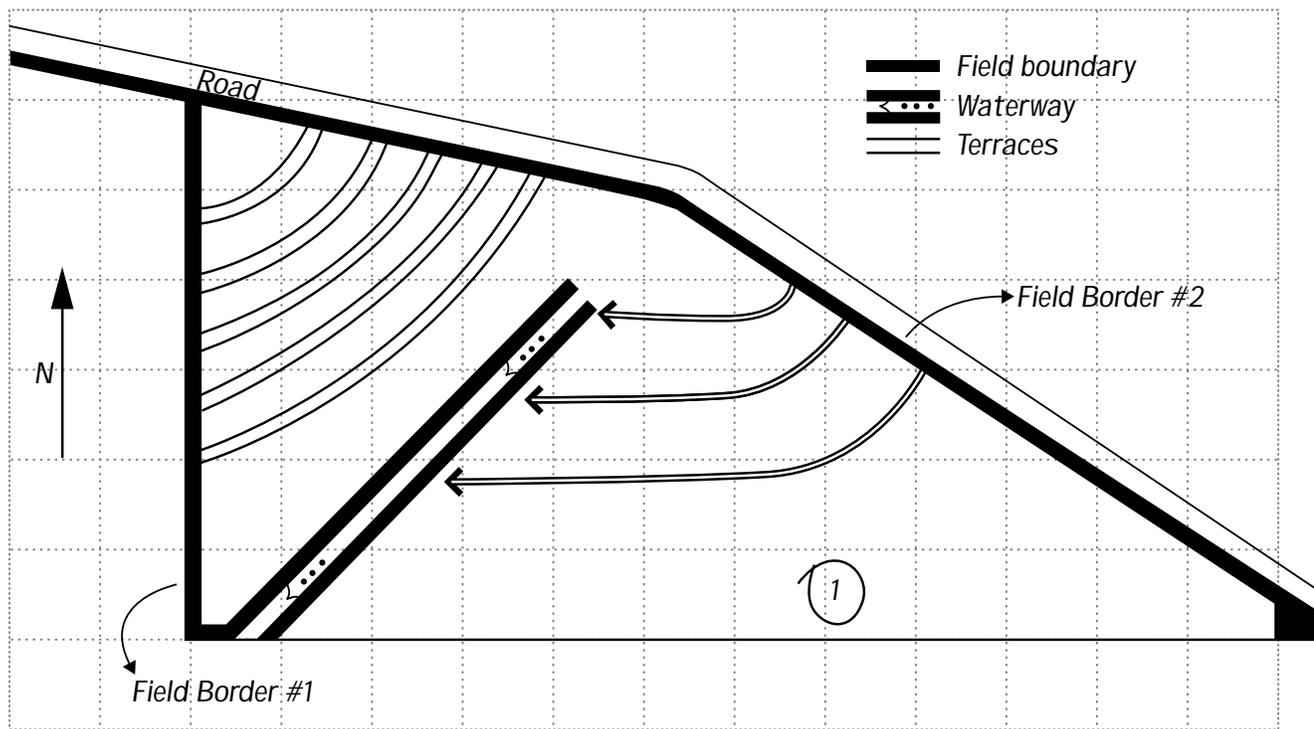
Site Preparation
Prepare firm seedbed. Apply lime and fertilizer according to recommendations.
Planting Method(s)
Drill grass and legume seed <u>0.25</u> inches deep uniformly over area. Establish stand of vegetation according to recommended seeding rate. If necessary, mulch newly seeded area with <u>0</u> tons per acre of mulch material. May seed small grain as a companion crop at the rate of <u>0</u> pounds per acre, but clip or harvest before it heads out. <i>Bermuda will be sprigged at a 4-inch depth.</i>
Maintenance
Maintain original width and depth of the grass area. Harvest, mow, reseed, and fertilize to maintain plant density, vigorous plant growth, and to remove plant nutrients. Inspect after major storms, remove trapped sediment, and repair any eroding areas. Shut off pesticide sprayers when turning on a field border. <i>Do not mow or harvest native species proir to June 15.</i>

Conservation Buffers

Fieldborders—Jobsketch

If needed, an aerial view or a side view of the field border layout can be shown below. Other relevant information, such as complementary practices, and adjacent field or tract conditions, the positioning of multiple or single row sets across a field or tract, and additional specifications may be included.

Scale 1"= 660 ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:
<i>Switchgrass 4pls/ac x 1.5 ac = 6 pls x 50% = 3 pls</i>
<i>Sideoats Grama 9 pls/ac x 1.5 ac = 13.5 pls x 25% = 3.4</i>
<i>Little Bluestem 6.8 pls/ac x 1.5 ac = 10.2 pls x 25% = 2.6 pls</i>
<i>Fertilizer (15-50-30) will be incorporated during seedbed preparation</i>
<i>Addition nitrogen will be applied after the plants are established according to growing conditions</i>
<i>Spot spray Johnson grass with a 3% mixture of glyphosate (Roundup)</i>

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication program information (Braille, large print, audiotape, etc.) should contact the USDA Office of Communications (202) 720-2791.

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C., 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal opportunity employer.