

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

FIELD BORDER

(Ac.)

CODE 386

DEFINITION

A strip of permanent vegetation established at the edge of or around the perimeter of a field.

PURPOSES

- Reduce erosion from water
- Soil and water quality protection
- Provide wildlife food and cover
- Manage harmful insect populations
- Serve as turn rows for farm machinery

CONDITIONS WHERE PRACTICE APPLIES

At the edges of cropland fields and to connect other buffer practices within the field. Field borders may also apply to recreation land or other land uses where agronomic crops are grown.

CRITERIA

General Criteria Applicable to All Purposes

Minimum field border width will be 20 feet. To accommodate large farm equipment, widths may be increased to 35 feet.

Field borders may be allowed to establish by natural regeneration provided a seed source is close by and a minimum of 75 percent ground cover is achieved by the end of the first growing season. Field borders may also be established to adapted plant species of perennial grass or a combination of perennial grasses and legumes and/or shrubs. Recommended introduced species are listed in Table 1. Recommended native species are listed in Table 2.

Seed Source

All seed and planting materials will be labeled and meet state seed quality law standards. Seeding rates will be determined based on pure live seed (PLS) or percent germination information found on the seed tag. Percent PLS can be computed using decimal values with the following equation.

$\% \text{ PLS} = [(\text{Percent germination} + \text{Percent hard seed}) \times \text{Percent purity}] / 100.$

Use certified seed of locally adapted and proven cultivars of commercially available seed. Locally harvested or commercially available local ecotypes seed that come from sources within a 200 mile radius of the seeded area can be used with approval from area or state specialists. Local eco-types should be used when trying to restore or enhance historic grasslands.

Seeding rates for individual species in mixtures should be calculated by multiplying the full seeding rate for each species by the desired percentage represented by that species

Legume seed shall be inoculated with the recommended strain of Rhizobia bacteria for the species being planted. Do not use chlorinated water with legume seed inoculant as a sticking agent. Chlorine can kill the Rhizobia bacteria. Soft drinks (colas) containing sugar make excellent sticking agents for inoculating legume seed.

Seedbed Preparation

Limit soil disturbing activities to the minimum needed to prepare a suitable seedbed. Consider using no-till drills when establishing native grasses and/or legumes on sites with an erosion hazard.

Weed pressure or competition from introduced sod forming grasses (i.e. bermudagrass or bahiagrass) can cause stand failure. In these areas, it will be necessary to chemically control vegetation with herbicide. Herbicides need to be labeled specifically for this purpose (non-cropland) and applied according to label directions and LSU AgCenter recommendations and according to Pest Management (595) specifications.

To prepare a seedbed, use equipment and methods that will result in a clean, firm seedbed without excessive weed competition. For soils with good physical condition, use a tandem disk, or other equipment to break or mix at least the top 3 inches of soil. Lightly disk, harrow, sweep, or use chemicals about one month prior to planting to eliminate any living vegetation should it exist. If the seedbed is not firm at planting time, firm it with a cultipacker, roller, or similar implement.

On fields which have a history of compaction, use a chisel plow or similar implement capable of operating at least 1 to 2 inches below the compacted zone to shatter the compacted layer. More complete destruction of the compacted layer is achieved when deep tillage is performed in the fall when soils are usually their driest. Prior to planting the desired vegetation, lightly disk, harrow, sweep, or use chemicals to eliminate any living vegetation should it exist.

Prepared seedbeds should be firmed with a roller or cultipacker prior to seeding. Loose uneven seedbeds are a major cause of poor stands. Your footprint should not sink more than ½ inch into a properly prepared seedbed. Seeds sown on the surface without coverage or greater than ½ inch deep have little chance of germinating and developing into seedlings. If seed are surface broadcast, cover the seed immediately with a roller or cultipacker, spike-tooth harrow, or similar implement no deeper than ¼ inch.

Old terraces or other conditions which pond water or causes concentrated flow will be drained, repaired, or leveled and smoothed before seedbed preparation. Gullied, rilled, or rough sites will be smoothed and shaped to permit the use of tracked or wheeled equipment for establishment and maintenance of vegetation.

All loose roots or other obstructions that will interfere with establishment and maintenance of vegetation must be removed from the surface. Any brush should be removed and the area smoothed to the extent necessary to perform required seedbed preparation, planting, and subsequent management practices (see 314-Brush Management).

Establishment Method

A grass seed drill (conventional or no-till) equipped with double disk openers and depth bands followed by a cultipacker, press wheels, or drag chains is the preferred seeding method. Seed should be planted 1/8 to 1/2 inch deep if adequate moisture is present, or 1/2 to 3/4 inch deep if soil surface is dry. Distance between rows should not exceed 20 inches in most cases. Eastern gamagrass should be planted in 20 to 38 inch rows at a depth of one inch.

Grassland drills used for seeding native seeds should be equipped with an agitator in the seed hopper and extra large seed delivery tubes for handling native grasses. Native seeds which have been debarbed or are smooth in nature can be used in conventional drills. If legumes and/or forbs are included in the seeding mixture, the drill should be equipped with a small seed attachment.

Use of a broadcast seeder, broadcasting seed by hand, and aerial seeding are acceptable methods of seeding where conditions permit seed to be placed in contact with mineral soil on a firm seedbed and where uniform seed distribution can be achieved. Regardless of method, it will be necessary to use a cultipacker, press wheels or similar techniques following broadcast seeding to aid coverage of seed. Seeds sown on the surface without coverage or greater than ½ inch deep have little chance of germinating and developing into seedlings.

Fertility

Fertilizer for establishment purposes will be done according to a current soil test for all introduced species. A variation of 25% above or below the specified amount of fertilizer for establishment is allowable.

For planning purposes on native grasses, a ratio of 0-60-60 (N, P₂O₅, K₂O) will be used. Plant nutrients necessary for establishment of

the cover shall be applied according to specifications in the conservation practice standard, Nutrient Management (590).

Nitrogen fertilization should be delayed until native grass seedlings have reached a height of 12 to 18 inches to prevent excessive use of fertilizer by competing vegetation. Nitrogen fertilization can also be delayed until the second year of growth after establishment.

When acid soils are present, lime may be needed for adequate grass growth or for legume establishment. Use dolomitic limestone where magnesium is needed. Lime should be incorporated into the soil during seedbed preparation. Lime shall be applied according to soil test recommendations. Legume seed and fertilizer will not be broadcast together because the fertilizer will damage and kill the legume inoculants.

Additional Criteria To Reduce Erosion From Water

Locate borders around the entire perimeter of the field, or as a minimum, install borders to eliminate sloping end rows, headlands, and other areas where concentrated water flows will enter or exit the field.

Additional Criteria to Protect Soil and Water Quality

To reduce runoff and/or increase infiltration field borders should be located around the entire perimeter of the field. Field border widths will be designed to conform to minimum field application setback distances established by state or local regulations for manure and/or chemical application. Refer to the Agricultural Waste Land Application Guidelines in the conservation practice standard Waste Utilization (633) for setback distances for manure and other organic by-products. Consult the Environmental Hazards Section of pesticide labels for setback distances regarding agrichemicals/pesticides.

To improve sediment trapping efficiency, locate borders around the entire perimeter of the field, or as a minimum, in areas where runoff enters or exits a field.

Border widths shall be designed to accommodate farm equipment parking, loading/unloading operations, harvest operations, module storage, etc. Field borders

may be increased to 35 feet in width to accommodate these purposes.

Additional Criteria for Management of Harmful Insect Populations

Field borders may be used to manage harmful insect populations in two ways.

Borders may be established to plant species which attract beneficial insects. Mowing, harvesting, and pesticide applications shall be scheduled to accommodate life cycles of targeted beneficial species.

Borders may also be established to plant species which congregate harmful insects into a small area (trap crop) where they can be controlled through cultural mechanical, and/or chemical means without treating the entire field acreage.

Additional Criteria to Provide Wildlife Food and Cover

When one of the stated purposes of a field border is for enhancing wildlife habitat, the border may be wider than 20 – 35 feet in designated areas. When wider field borders are established for wildlife, the total width may be from 1 to 3 chains (66 – 198 ft).

Targeted wildlife species will determine additional width and plant species established for wildlife. Recommended native species for wildlife are listed in Table 2.

The portion of the field border managed for wildlife will be planned and applied in accordance with the conservation practice standard Upland Wildlife Habitat Management (645).

Example:

A producer wants to establish a field border which will accommodate large farm equipment including 4-row cotton pickers and a module builder and serve as a storage location for cotton modules. The producer also wants to improve quail habitat on his property. The field border could be planned for a 35-foot area adjacent to the cropland field planted to common bermudagrass to serve as the turn row. An additional 31 feet could be established to bicolor lespedeza to furnish food and cover for quail. The area established for quail habitat would be managed according to practice code 645.

CONSIDERATIONS

Field borders are more effective and provide greater environmental benefits when established around the entire field.

To increase sediment trapping efficiency, consider establishing a narrow strip (3 – 5 feet) of a stiff-stemmed grass (switchgrass) along the cropland/field border interface.

Use native species, where feasible, to meet producer objectives.

Consider overseeding or sod seeding field borders with small grains and/or legumes for winter cover and to enhance wildlife benefits.

Rows of shrubs in the field border outside of the turn row area will enhance the field borders ability to harbor beneficial insects and provide additional wildlife benefits.

Install water bars or berms if needed to breakup or redirect concentrated flow within the border.

If practice installation and maintenance has the potential to affect cultural resources, follow NRCS state policy regarding cultural resources.

PLANS AND SPECIFICATIONS

Specifications for the establishment of the practice shall be prepared for each field according to the criteria, considerations, and other conservation practices referred to in this standard. Specifications shall be recorded using appropriate worksheets and narrative statements in the conservation plan. Use the LA-CPA-10 (Rev. 3/98), LA-CPA-33A (Rev. 9/99), and/or the LA-CPA-33B (Rev. 9/99) as appropriate to document vegetative cover

establishment. The following items should be included in the conservation plan:

- Border widths and length
- Location within the field or farm boundary
- Vegetation to be established
- Seedbed preparation
- Planting method
- Lime and fertilizer requirement
- Operation and maintenance

OPERATION AND MAINTENANCE

Field borders require careful management and maintenance for performance and longevity. The following maintenance activities shall be planned and applied as needed:

- Storm damage repair
- Sediment Removal – when six (6) inches of sediment has accumulated at the field border/cropland interface
- Shut off sprayers and raise tillage equipment to avoid damage to field borders
- Shape and re-seed border areas damaged by chemicals, tillage, or equipment traffic
- Restrict maintenance activities on field borders or portions of field borders established for wildlife from April 15 – July 15 which coincides with the primary nesting season for most species of ground-nesting birds in Louisiana.

TABLE 1. INTRODUCED SPECIES FOR FIELD BORDERS ^{1/}

PERENNIAL GRASSES	SEEDING RATE LB/ACRE	SEEDING DATES
Bahiagrass – Argentine, Pensacola, Tifton 9	15 lbs	March 15 – June 1
Bermudagrass – Common, Cheyenne	5 lbs	March 15 – June 1
Dallisgrass	5 lbs PLS ^{1/}	March 15 – June 1
Tall Fescue– Kentucky-31, Georgia 5, Jesup, AU Triumph, Forager, Penngrazer	20 - 30 lbs	September 1 – November 15
Weeping lovegrass	3 lbs	February 1- May 15
PERENNIAL OR RESEEDING LEGUMES ^{2/}		
Sericea Lespedeza	30 lbs	March 1 – May 1
Alyceclover	30 lbs	May 1 – July 15
Arrowleaf Clover – Amclo, Meechi, Yuchi	8 lbs	September 15 – November 15
Crimson Clover – Chief, Dixie, Tibbee	15 lbs	September 15 – November 15
Red Clover – Kenland, Kenstar, Renegade, Cherokee, Concorde, Acclaim, Cinnamon	12 lbs	September 15 – November 15
Subterranean Clover– Mt. Barker, Nangeela, Tallarook, Woogenellup	15 lbs	September 15 – November 15
White or Ladino Clover– Louisiana S-1, Osceola, Regal, Canopy, California, Durana	5 lbs	September 15 – November 15
Hairy Vetch	30 lbs	September 15 – November 15
Singletary Peas	50 – 60 lbs	September 15 – November 15
Lespedeza – Common, Kobe, Korean	25 – 30 lbs	February 15 – March 15
RECOMMENDED COMBINATIONS ^{3/}		
Bahiagrass and Common Lespedeza		
Tall Fescue and White or Ladino Clover		
Tall Fescue and Red Clover		
Bahiagrass and Crimson Clover		
Tall Fescue and Hairy Vetch		
Dallisgrass and White or Ladino Clover		
Dallisgrass and Red Clover		

^{1/} Field borders shall be composed of perennial grasses or a combination of perennial grasses and legumes and/or shrubs.

^{2/} All legume seed shall be inoculated with the proper strain of Rhizobia bacteria.

^{3/} When seeding cool season legumes with warm season perennial grasses, plant the warm season perennial grasses first, then sod seed or over seed cool season legumes using the full planting rate for each species. Where seeding combinations simultaneously, the seeding rate of each species may be reduced by 25%.

TABLE 2. NATIVE SPECIES FOR FIELD BORDERS ^{1/}

NATIVE GRASSES SPECIES/CULTIVAR	FULL SEEDING RATES (PLS LBS)^{2/}	PLANTING DATES
Switchgrass Alamo	4 – 9	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Eastern gamagrass Pete IUKA IV Highlander San Marcos Germplasm	8 – 13	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Big bluestem Kaw Earl	7 – 10	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Little bluestem Aldous OK Select Germplasm	7 – 10	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Indiangrass Cheyenne Lometa	7 – 10	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Virginia wildrye Omaha Kinchaffoonee Germplasm	15 – 20	Optimum range: September 1 - October 15 Maximum range: August 1 – November 30
Canada wildrye Lavaca Germplasm	15 – 20	Optimum range: September 1 - October 15 Maximum range: August 1 – November 30

NATIVE LEGUMES AND FORBS SPECIES/CULTIVAR	FULL SEEDING RATES (PLS LBS)^{2/}	PLANTING DATES
Illinois bundleflower Sabine	12 – 14	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Partridge pea Comanche Lark Selection	8 – 10	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Maximilian sunflower Aztec	1 – 2	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Purple Prairie Clover Cuero Germplasm	3 – 4	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
White Prairie Clover	3 – 4	Optimum range: February 1 - May 15 Maximum range: December 1 - May 31
Black eyed Susan	1 – 2	Optimum range: September 1 - October 15 Maximum range: August 1 – November 30
Plains Coreopsis	1 – 2	Optimum range: September 1 - October 15 Maximum range: August 1 – November 30

^{1/} Native plant species occur naturally in mixtures. The formula for calculating a seed mixture is:

$$\text{Full Seeding Rate (FSR)} \times \text{Desire Percent of Mix (DPM)} = \text{Seeding Rate per Acre}$$

^{2/} All seeding rates are in pounds of pure live seed (PLS) per acre. PLS% = (% germination X % purity).

NRCS, LA

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