

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FIELD BORDER

(Ft.)

CODE 386

DEFINITION

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

PURPOSE

- Reduce erosion from wind and water
- Soil and water quality protection
- Management of harmful insect populations
- Provide wildlife food and cover
- Increase carbon storage in biomass and soils.
- Improve air quality

CONDITIONS WHERE PRACTICE APPLIES

At the edges of cropland fields and to connect other buffer practices within the field. 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 widths shall be based on local design criteria specific to the purpose or purposes for installing the practice.

The field borders shall be established to adapted species of permanent grass, legumes and/or shrubs.

Field borders shall be established around the field edges to the extent needed to meet the resource needs and producer objectives.

Plant materials, seedbed preparation, seeding rates, dates, depths, and planting methods will be consistent with approved local criteria.

Ephemeral gullies and rills present in the planned border area will be smoothed as part of seedbed preparation.

Additional Criteria to Reduce Erosion from Wind and Water

Wind Erosion Reduction. Locate borders around the entire perimeter of the field, or as a minimum, provide a stable area on the upwind edge of the field as determined by prevailing wind direction data.

Establish stiff-stemmed, upright grasses to trap saltating soil particles.

Minimum height of grass shall be one foot during the critical erosion period.

Water Erosion Reduction. Locate borders around 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

Reducing Runoff and Increasing Infiltration.

Locate borders around 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.

Maintaining Field Setback Distances for Manure and Chemical Applications.

Border widths will be designed to conform to minimum field application setback widths established by state or local regulations.

Sediment Trapping. Locate borders around the entire perimeter of the field, or as a minimum, in areas where runoff enters or leaves the field.

Reducing Soil Compaction from Equipment Parking and Traffic.

Border widths will be designed to accommodate equipment parking, loading/unloading equipment, grain harvest operations, etc.

Additional Criteria for Management Of Harmful Insect Populations.

Provide a Harbor for Beneficial Insects. Include herbaceous plants that attract beneficial insects. See planning considerations for including shrubs.

Mowing, harvesting and pesticide applications will be scheduled to accommodate life cycle requirements of the beneficial insects.

or

Provide a Habitat to Cause Pest Insects to Congregate. Select plants for the field border that attract pest insects.

Use mechanical, cultural and/or chemical techniques to reduce pest populations when and where they congregate in the field border.

Additional Criteria to Provide Wildlife Food and Cover

Establish plant species that provide wildlife food and cover for the target wildlife species.

Schedule mowing, harvest, and weed control activities within the field border to accommodate reproduction and other life cycle requirements of target wildlife species.

Additional Criteria to Improve Air Quality

Establish plant species with foliar and structural characteristics that optimize interception, adsorption and absorption of airborne particulates.

Shrub rows will be oriented as closely as possible to perpendicular to the prevailing wind direction during the period of concern.

Additional Criteria to Increase Carbon Storage in Biomass and Sequestration in the Soil

Establish plant species that will produce the greatest above and below ground biomass for the site.

CONSIDERATIONS

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

Field borders enhance the aesthetics and provide stability around the field edge. They also provide turn and travel areas for equipment and reduce airborne dust.

To increase trapping efficiency, consider establishing a narrow strip of stiff-stemmed upright grass at the crop/field border interface.

Field borders can be used to comply with required field setback distances applicable to manure and chemical applications.

Wildlife enhancement and other benefits of native plants should be discussed during planning.

Native species should be used when feasible and meet producer objectives.

Consider overseeding the border with legumes for plant diversity and wildlife benefits.

Schedule mowing, harvesting and weed control to accommodate wildlife nesting needs and other special requirements or purposes.

Waterbars or berms may be needed to breakup or redirect concentrated water flows within the borders.

If bank stabilization is a concern, select fibrous deep-rooted plants.

Consider plants tolerant to sediment deposition and chemicals planned for application.

Rows of shrubs (Windbreak/Shelterbelt, 380) adjacent to field borders will often enhance field borders ability to harbor beneficial insects, and may also provide additional wildlife benefits.

If installation or maintenance of the practice has potential of affecting cultural resources (Archaeological, historic, historic landscape, or traditional cultural properties), follow NRCS state policy for considering cultural resources.

Consider using plant species that enhance the biomass collection opportunities.

Consider increasing the width of the field border will increase the potential for carbon sequestration.

Endangered Species Considerations

Determine if installation of this practice, along with any others proposed, will have an effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern, or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates that the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined

to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that during critical periods, such as spawning, eggs in gravel's, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Water Quantity

The effects of field borders on surface and ground water quantities are minor, unless irrigated.

1. Effects on the volume and rates of runoff.

Water Quality

This practice reduces erosion by having perennial vegetation on an area of the field. Field borders serve as "anchoring points" for contour rows, terraces, diversions, and contour strip cropping. By elimination of the practice of tilling and planting the ends up and down slopes, erosion from concentrated flow in furrows and along rows may be reduced.

When the field borders are located such that runoff flows across them in sheet flow, they may cause the deposition of sediment and prevent it from entering the surface water. Where these practices are

between cropland and a stream or water body, the practice may reduce the amount of pesticide application drift from entering the surface water.

1. Filtering effects vegetation on movement of sediment, dissolved and sediment-attached substances.
2. Effects on erosion and the transport of sediment, pathogens, and soluble and sediment-attached substances carried by runoff.

PLANS AND SPECIFICATIONS

Plans and specifications are to be prepared for the practice site. The following items should be specified:

- Border widths and lengths based on local design criteria.
- Location within the field or farm boundary
Vegetation to be used.
- Site preparation.
- Planting method.
- Liming or fertilizer requirements.
- Operation and maintenance requirements.

A job sheet is available to document these items.

OPERATION AND MAINTENANCE

Field borders require careful management and maintenance for performance and longevity.

The following O&M activities will be planned and applied as needed:

- Storm damage repair.
- Sediment removal - when 6 inches of sediment have accumulated at the field border/cropland interface.
- Shut off sprayers and raise tillage equipment to avoid damage to field borders.
- Shape and reseed border areas damaged by chemicals, tillage or equipment traffic.
- Fertilize, mow, harvest, and control noxious weeds to maintain plant vigor.
- Ephemeral gullies and rills that develop in the border will be filled and reseeded.

- Maintain herbaceous vegetation so that it provides at least 80 percent ground cover throughout the year.