

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE INSTALLATION GUIDELINES**

CRITICAL AREA PLANTING

(ac.)

CODE 342

Site Preparation

If necessary, divert offsite water away from the critical area. This may require a permanent conservation practice or in other instances a temporary measure that will be effective during the period of establishment.

Where practical, grade to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and anchoring. Cabling of equipment to prevent rollover may be necessary on some slopes, such as newly constructed dams.

On construction sites where the exposed and underlying soil material will not support adequate vegetation, minimum topsoil dressing of six inches will be applied as part of construction.

After construction is complete, the seedbed will be worked to a depth of three to five inches to break up compacted areas and permit rapid root development. Drag or pack to break up large clods and firm the seedbed.

Where slopes are steeper than 1.5:1, use some means other than vegetation to stabilize slopes.

Establishment of Herbaceous Vegetation

Establishment of herbaceous vegetation will follow the guidelines found in Range Technical Note No. 4 "Perennial Vegetation Establishment Guide."

Allowable species will be selected from Table 7 for the appropriate MLRA in Range Technical Note No. 4.

A minimum of 75 percent of the mixture will be made up of sod forming species. The mixture will contain a minimum of two or more grass species in equal proportions except that smooth brome grass may be used as a single species in the following MLRAS: 102A&B, 53B&C, 55B&C, 63B, 66, 62.

Single species may be used on saline or wet areas (refer to Table 7 Range Technical Note No. 4).

Grass mixtures may include all native grasses, all introduced grasses, or a mixture of native and introduced species except that smooth brome grass may not be mixed with native species.

When quick growth and/or protection of a critical area is needed, a quick establishing grass can be added in addition to the selected permanent seeding mixture. Use either slender wheatgrass or annual ryegrass. Slender wheatgrass can be used statewide and annual rye grass can be used in MLRAS 102A&B, 53B&C, 55B&B, 63B, 66, and 62. Add a maximum of three PLS pounds per acre of slender wheatgrass or a maximum of two PLS pounds per acre of annual ryegrass to the selected full seeding.

Conventional Seeding

All seeding activities will follow recommendations found in Range Technical Note No. 4.

Seeding rates will be double those recommended in Table 2 of Range Technical Note No. 4 when using a drill (recommended rate multiplied by two).

When possible, drilling will be accomplished perpendicular to the slope. On grass waterways, drilling will follow a serpentine pattern.

Broadcasting

Many critical area plantings are too steep or too small to efficiently and safely utilize a drill. In these cases seed may be broadcast and incorporated by harrowing, packing or raking by hand. When broadcast seeding increase the seeding rates found in Table 2 of Range Technical Note No. 4 by 2.5 times (recommended rate multiplied by 2.5).

Hydroseeding

On sites that are too steep for regular equipment to operate, the use of a hydroseeder is an acceptable alternative. Seed, fertilizer, and mulch materials will be applied in one operation. Limit the application of 150 pounds of solids per 100 gallons of water. If a legume seed is included in the mixture any lime or fertilizer should be applied separately. A second trip may also be needed to apply an asphalt emulsion to long fiber mulches.

When using hydroseeding technique increase seeding rates found in Table 2 of Range Technical Note No. 4 by a factor of four (recommended rate multiplied by four).

Sodding

Sod may be used on areas requiring immediate cover to prevent erosion. The sod should be in strips or blocks of native grass mixture, switchgrass, prairie cordgrass, reed canarygrass, or other suitable grasses. Bluegrass sod is to be used only when the area is irrigated, and is desired for aesthetic purposes. Sod materials are to be taken from solid, thick growing stands.

Sod will be cut in strips of uniform width and to a uniform thickness of at least three inches for tall grass and ½ to 1-½ inches for short grasses. Lay sod within 24 hours after it was cut

Sod strips should be carefully placed in rows across (at right angles) to the direction of slope. The sod strips will be placed together tightly so that no open joints are left between the strips or between the end of strips. Joints between the end strips will be staggered. Any spaces between the joints will be filled with topsoil and all edges covered with topsoil at least two inches deep. The edge of the sod at the top of slopes will be turned under and a layer of soil compacted over the edge so as to conduct surface water over and onto the top of the sod. The sod will be well tramped to help it remain in place.

Fertilizing

Do not fertilize predominantly warm-season grass seeding unless the soil material is very infertile.

Thoroughly mix all fertilizer into the upper three to five inches of the soil during final seedbed preparation.

Apply fertilizer based on the recommendations from a soil test or apply 30 to 40 pounds of actual N and 40 to 60 pounds of P205 per acre. Ten to 15 tons of manure per acre may be used in lieu of the commercial fertilizer and will also increase organic matter.

On medium textured soils the addition of 5 to 10 pounds of zinc per acre may speed up growth.

Mulching

All mulching will be done in accordance with South Dakota Standards and Specifications for Mulching (484).

Mulching of critical area plantings is required for any of the following conditions:

Where seeding cannot be accomplished during the approved seeding periods and a cover crop is not used;

On grassed waterways, where a cover crop or companion crop is not used and seeding is placed on a bare seedbed, and the design velocity is more than 2.5 feet per second;

Where a grassed waterway is established at the time of terrace construction, and the channel slope is two percent or greater;

On slopes 3:1 or steeper that are 10 feet or more in vertical height or longer than 20 feet;

On cut south and west facing slopes;

On all saline and alkaline areas.

Drill grass in the prepared seedbed, immediately prior to mulching or at the next suitable seeding period after mulching.

Establishment of Woody Vegetation

The addition of trees and/or shrubs in the critical area may be used as appropriate to further reduce erosion, aesthetically enhance the site, or provide wildlife habitat. Any tree or shrub planting will follow the Tree and Shrub Planting (612) standard in the South Dakota Technical Guide.

Trees and/or shrubs will only be utilized in areas where they are a naturally occurring component of the plant community.

Management of Critical Areas During and After Establishment.

Weeds will be controlled as described in Range Technical Note No. 4.

All use will be excluded until vegetation is well established.

Mow grassed waterways for hay annually after establishment. Other critical areas may be mowed as needed for stand maintenance.

Fertilize as necessary to maintain stand.

Inspect critical areas each spring and following heavy rain. Reshape and reseed eroded areas promptly. Reinforce grass seeding where stands are thin.

Manage any grazing use to ensure long-term survival of the stand

Lift tillage implements and shut off sprayers when crossing critical areas. Do not till parallel to grassed waterways.

Avoid vehicular travel on critical areas.

Providing Food, Cover, And Shelter for Wildlife

Wildlife habitat should be considered when developing critical area planting plans and species selection. For plant species to improve wildlife habitat, refer to South Dakota Standard Upland Wildlife Habitat Management (645).