

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

CRITICAL AREA PLANTING

(Acre)
Code 342

DEFINITION

Planting vegetation such as trees, shrubs, vines, grasses, or legumes, on highly erodible or critically eroding areas (does not include tree planting mainly for wood products).

PURPOSE

To stabilize the soil, reduce damage from sediment and runoff to downstream areas, improve wildlife habitat and landscape aesthetic, and protect water quality.

CONDITIONS WHERE PRACTICE APPLIES

On highly erodible or critically eroding areas.

Ordinary conservation treatment and management usually cannot stabilize these areas and if left untreated can cause severe erosion or sediment damage. Examples of applicable areas are dams, dikes, mine spoil, levees, cuts, fills, surface-mined areas, and denuded or gullied areas where vegetation difficult to establish by usual planting methods.

SPECIFICATIONS

Table I gives a list of suitable plants and related information. Other plants, not listed, are allowed if they meet the purpose of this practice. These plants can be planted at any time when there is sufficient moisture but try to avoid planting during the middle of the rainy season.

Annuals such as ryegrass and rice can be used as a nurse crop and to provide temporary cover. Plant ryegrass during the winter or fall

months at the rate of 20 lbs. of seed per acre. Plant rice at the rate of 30 lbs. of seed per acre at any time of the year. Cultipack or otherwise firm the soil after seeding. Fertilize and lime according to the rate required for the intended use.

The amounts of fertilizer and lime to apply should be based on a soil test, if possible. If a soil test is not available, use a minimum of 100 pounds of phosphorus-based fertilizer and 1 ton of calcium carbonate per acre at time of planting. If needed, for maintenance purposes, fertilize with 200 pounds of 15-5-10 fertilizer every 6 months.

Mulching will be used when necessary to conserve moisture, increase infiltration or provide temporary or supplemental protection to the soil and plantings. This is especially applicable during the period of establishment. One inch or more of close fitting material and up to 6 inches of loose fitting material and up to 6 inches of loose fitting material will be used.

Mulching material will be staked or wired down to prevent movement. If these mulching materials do not do the job, it will be necessary to use sod, netting, petroleum-derived mulch or wood-fiber cellulose materials. Additional information on mulching is contained in the Standard and Specifications for Mulching (484), Section IV of the Field Office Technical Guide.

Do not allow livestock to graze the vegetation nor should traffic by equipment be permitted to the point that the purpose of the practice is defeated or materially hindered.

This practice may be combined with soil bioengineering practices.

Site Preparation:

On sites where construction is underway, disturb as little of the site as possible, and

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

protect trees and other vegetation that are to be retained. Apply temporary cover or mulch to erodible sites that will be exposed for long periods before they are permanently vegetated. Common bermuda grass can also be seeded with temporary plants in critical situations.

On sites to be graded, strip and stockpile the topsoil. After the grading operation is completed, spread the topsoil evenly over the area. On some sites, it will be necessary to apply topsoil before permanent vegetation can be established.

The surface grade should be at least 1% or more away from buildings. The grade and slope should permit the use of regular maintenance equipment. The best slopes for maintenance of grasses are 3:1 or flatter. It may be necessary to supplement a vegetated slope with structural measures, such as retaining walls or bench terraces.

Seedbed Preparation:

Remove all debris, such as tree stumps, scrap lumber, mortar or concrete, and rocks. After applying topsoil, if required, loosen the soil to a depth of several inches. Perform all tillage operations at right angles to the slope to reduce the erosion hazard. Fertilizer and lime are usually applied just previous to the final seedbed preparation. Continue tillage until a reasonably uniform, fine, firm seedbed condition has been attained.

Highly erodible areas should also be mulched to prevent excessive erosion and loss of seed or vegetative material. Details on mulching are in the Practice Standard and Specifications for Mulching (484), Section IV.

If possible, use soil test to determine the amounts and types of fertilizer and lime to be used. If not available, use a minimum of 200 pounds of 15-5-10 fertilizer and 2 tons of calcium carbonate per acre.

Seeding or Sodding:

Establish the permanent grass by seeding or sodding as soon as possible after the seedbed preparation is completed. All lawn grasses,

used in the Caribbean Area, are planted with vegetative material, except for common bermudagrass. Plant common bermuda grass at the rate of 80 lbs. of seed per acre. Apply seed uniformly by hand, cyclone seeder, drill cultipacker seeder, or hydroseeder. Cover the seed lightly. Firm the seedbed following the seeding operation with a cultipacker, roller, or light drag.

Sod pieces or plugs are planted on at least 12-inch centers. On erodible slopes and other critical areas, it is best to use sod strips. The following information applies specifically to sod strips that require intensive treatment measures, but some of the information is applicable to other types of sod planting.

Sod strips should be laid on the contour, never up and down the slope, starting at the bottom of the slope and working up.

Place sod strips with snug even joints and stagger the joints from strip to strip.

Roll or tamp sod immediately following placement to insure solid contact of root material and soil surface. Do not overlap sod. All joints should be butted tight to prevent voids which would cause air drying of the roots.

On steep slopes, secure sod to surface soil with wooden pegs or wire staples.

Immediately following planting, sod should be watered until moisture penetrates the soil layer beneath sod to encourage quick root growth. Maintain optimum moisture for at least 2 weeks. Watering to a 6-inch depth is more effective than frequent light watering. As sodding is completed, the entire area should be rolled or tamped. For other species and suitability see Table II

OPERATION AND MAINTENANCE

Mowing, liming and fertilizer must be applied as needed or as indicated in soil tests for soil input.

Table 1. Vegetation recommended for Critical Area Planting in the Caribbean Area¹

Common Local Name	Technical Name	Planting Method and Minimum Rate (acre)	Acid tolerant	Salinity tolerant
Bahia grass (Yerba bahía)	<i>Paspalum notatum</i>	By seeds, 40 lbs. or by sprigs 1500 lbs.	Yes	Fair
Bamboo (Bambú)	<i>Bambusa spp.</i>	Stem cuttings. Amount varies per species	No	No
Bermuda grass (Yerba bermuda)	<i>Cynodon dactylon</i>	By seed, 60 lbs. or by sprigs 1500 lbs.	Yes	Fair
Buffel grass	<i>Pennisetum ciliare</i>	By seed, 6 lbs. or by clump division	No	Yes
Carpet grass (Grama colorada)	<i>Axonopus compressus</i>	By seed, 40 lbs. or by sprigs 1500 lbs.	Yes	No
Centipede grass (Grama ciempiés)	<i>Eremochloa ophiuroides</i>	By seed 20 lbs. or sod	Yes	No
Dallis grass (Yerba dalis)	<i>Paspalum dilatatum</i>	By seed 20 lbs. or sprigs 1500 lbs.	Yes	No
Guinea grass	<i>Urochloa maxima</i>	By seed, 25 lbs. or by clump division	Fair (variety gramalote is high acid tolerant)	No
Hurricane grass (Yerba huracán)	<i>Bothriochloa pertusa</i>	By seed 2 lbs. or by clump division	Fair	Fair
Lemon grass (Limoncillo)	<i>Cymbopogon citratus</i>	Clump division	Fair	No
Napier Elephant grass (all varieties) (Yerba elefante)	<i>Pennisetum purpureum</i>	By stem cuttings, 2000 lbs.	Fair	No
Narrow carpet grass (Grama colorada)	<i>Axonopus affinis</i>	By seed, 40 lbs. or by sprigs 1500 lbs.	Yes	No
Pangola grass	<i>Digitaria eriantha</i>	By sprigs 1500 lbs.	Yes	No
Para grass (Malojillo)	<i>Urochloa mutica</i>	By seed, 5 lbs. or by sprigs 1500 lbs.	Yes	Fair
Rhodes grass (Pasto Rodes)	<i>Chloris gayana</i>	By seed, 20 lbs. or by clump division	No	No to Fair depending on variety
Rye grass	<i>Lolium spp.</i>	By seed 40 lbs.	Yes	No
Seashore paspalum	<i>Paspalum vaginatum</i>	By sprigs 1500 lbs.	No	Yes
Signal grass (Yerba Signal)	<i>Urochloa brizantha</i>	By seed, 2 lbs. or by sprigs 1500 lbs.	Yes	No
Stargrass (Yerba Estrella)	<i>Cynodon nlemfuensis</i>	By sprigs, 1500 lbs.	Fair	Fair
Vetiver grass (Pacholi)	<i>Vetiveria zizanioides</i>	By clump division	Yes	Low
Zoysia	<i>Zoysia japonica</i> <i>Z. matrella</i>	Sod	Yes	Yes

¹For species selection, see table Conservation Plants and Their Uses (USDA-NRCS, P.R. & USVI), filed in Section II of the FOTG. We recommend the identification of the species growing near the site to be restored.