

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

CRITICAL AREA PLANTING

(Acre)
Code 342



Dune front at Ft. Walton Beach, Florida, damaged by Hurricane Ivan in 2004. Structures behind foredune were not damaged.

DEFINITION

Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

PURPOSE

- Stabilize areas with existing or expected high rates of soil erosion by water.
- Stabilize areas with existing or expected high rates of soil erosion by wind.
- Restore degraded sites that cannot be stabilized through normal farming practices.
- Stabilize coastal areas, such as sand dunes and riparian areas.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to highly disturbed areas such as active or abandoned mined lands, urban conservation sites, road construction areas, conservation practice construction sites, areas needing stabilization before or after natural disasters such as floods, hurricanes,

tornados and wildfires and other areas degraded by human activities or natural events.

CRITERIA

General Criteria Applicable To All Purposes

Prior to planting, conduct a site investigation to identify any physical, chemical or biological conditions that could affect the successful establishment of vegetation.

Species selected for seeding or planting need to be suited to current site conditions and intended uses.

Do not plant any species found on the Florida Dep. of Agriculture and Consumer Services or the Florida Dep. of Environmental Protection noxious or prohibited weed lists. Additionally, do not plant any species listed as a Category 1 invasive species by the Florida Exotic Pest Plant Council (see FOTG Section I [f] [4]).

The species selected need to be able to achieve adequate density and vigor to sufficiently stabilize the site such that suitable use can be made with ordinary management activities within an appropriate timeframe.

Prior to planting seeding or planting rate; minimum quality of planting stock, such as Pure Live Seed (PLS) or stem caliper; method of seedbed preparation; and method of establishment need to be specified. Use only viable, high quality seed or planting stock.

Selection of time and manner of planting needs to be based on what best ensures establishment and growth of the selected species. Specify what constitutes successful establishment, e.g., minimum percent ground/canopy cover, percent survival, stand

density, etc. before application.

Within the approved planting dates for a species, schedule planting to optimize soil moisture for germination and/or establishment.

Apply soil amendments (e.g., lime, fertilizer, compost) at rates necessary to insure stand establishment. Mitigation practices to reduce risk of nutrient losses need to be installed if the recommended fertilizer rate exceeds the criteria in Florida NRCS Conservation Practice Standard Nutrient Management, Code 590.

Protect plantings from pests (e.g., weeds, insects, diseases, livestock, wildlife) as necessary to ensure stand establishment.

Follow all soil amendment application and pest control the requirements in the Florida Field Office Technical Guide (FOTG).

Use current approved wind and/or water erosion prediction technology to determine the amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective.

Impact to cultural resources, wetlands, and Federal and State protected species needs to be avoided or minimized to the extent practical during planning, design, and implementation of this conservation practice in accordance with established National and Florida NRCS policy; General Manual (GM) Title 420-Part 401, Title 450-Part 401, and Title 190-Parts 410.22 and 410.26; National Planning Procedures Handbook (NPPH) FL Supplements to Parts 600.1 and 600.6; National Cultural Resources Procedures Handbook (NCRPH); and The National Environmental Compliance Handbook (NECH).

Additional Criteria to Restore Degraded Inland Sites

Site preparation

To ensure proper equipment operation and ensure proper site and seedbed preparation, gullies or deep rills need to be treated prior to site preparation if feasible. Minor land shaping and grading along with loose rock and scattered brush and/or tree removal can be performed as deemed necessary. If major land shaping is required, it needs to be done in accordance with practice standards Florida

NRCS Conservation Practice Standard Land Smoothing, Code 466, or Obstruction Removal, Code 500. Vertical banks need to be sloped to enable plant establishment. Salvage top soil, if present, during the shaping and grading operation and uniformly distribute back over the area prior to final seedbed preparation.

Soil Amendments

Add soil amendments, as needed, to ameliorate or eliminate physical or chemical conditions that inhibit plant establishment and growth. The required amendments, such as compost or manure, to add organic matter and improve soil structure and water holding capacity; agricultural limestone, to increase the pH of acid soils; or elemental sulfur, to lower the pH of calcareous soils need to be detailed in the site specification with amounts, timing, and method of application.

If practical, a current soil test (< 3 yr old) processed by the IFAS Extension Soil Testing Laboratory (ESTL) or equivalent laboratory should be used to determine the need for liming materials and plant nutrients. When a current soil test is not available, follow minimal fertilization recommendations outlined in Florida NRCS Critical Area Planting Guidance. Plant nutrients can be supplied from animal or poultry manure, agricultural by-products, or commercial fertilizer. Animal and poultry manure and other agricultural by-products (see <http://edis.ifas.ufl.edu/SS315>) can be sources of nutrients, but the material should be analyzed for nutrient content prior to use. When a laboratory analysis is not available, use the book values from the Florida NRCS Agricultural Waste Management Field Handbook, Chapter 4 – Agricultural Waste Characteristics, for estimated available nutrient content.

Plant selection

Use only perennial plant species. Plantings can consist of pure stands of perennial grasses, legumes, trees, shrubs, vines or mixtures of these classes of vegetations. Although Florida NRCS Conservation Practice Standard Critical Area Planting, Code 342, is not completed until perennial vegetation is established, a short term temporary cover (nurse crop) may be necessary. Suggested

nurse crops suitable for the different areas of the state can be found in the Florida NRCS Critical Area Planting Guidance

Perennial warm season herbaceous species approved for use on critical areas are listed in Florida NRCS Critical Area Planting Guidance.

At this time, there are no cool season perennial grasses recommended for

Florida. Recommended trees, shrubs and vines can be found on the Florida NRCS Plant List for Conservation Alternatives (FOTG Sect. II [g] [1]).

Consult Florida NRCS Conservation Practice Standards Pasture and Hayland Planting, Code 512, and Upland Wildlife Habitat Management, Code 645, as well as Florida NRCS Critical Area Planting Guidance for additional information regarding species, planting methods, and dates.

Additional Criteria to Restore Sand Dunes and Coastal Sites

Plants for sand dunes and coastal sites must be able to survive being buried by blowing sand, sand blasting, salt spray, salt water flooding, drought, heat, and low nutrient supply.

Species appropriate to Florida, general information on coastal dune restoration, and sources for planting material can be found in Florida NRCS Critical Area Planting Guidance and the Florida NRCS "Native Plants for Coastal Dune Restoration: What, When, and How for Florida" (<http://www.fl.nrcs.usda.gov/programs/pmc/flplantmaterials.html>).

Sand trapping devices such as sand fences or brush matting shall be included in the revegetation/ stabilization plans where applicable. Information on sand fence construction and alignment for Florida can be found in the sources listed in the previous paragraph.

CONSIDERATIONS

When practical, use native species or mixes that are adapted to the site and have multiple values.

Select plants that will provide food and cover where wildlife is a prime concern. See

"Management for wildlife: a supplement to wildlife standard and specifications for Florida" (NRCS, 1979) for recommended plants for wildlife.

Establishment activities need to be scheduled to avoid critical periods (e.g., mating, nesting, denning, rearing of young, etc.) when sensitive or protected species are present. Plans need to be in compliance with the Migratory Bird Treaty Act.

Vegetative cover on critical areas will reduce sediments and sediment related pollutants in surface water and nutrients leaching into groundwater. Operations necessary to prepare site for vegetation establishment (i.e., grading, shaping, seedbed preparation) may result in large quantities of sediments and associated chemicals being washed into surface waters prior to vegetation establishment. Planning and installation of other Florida NRCS Conservation Practices such as Diversions, Code 362; Land Smoothing, Code 466; Obstruction Removal, Code 500; Surface and Subsurface Drains, Code 607; or Underground Outlets, Code 620, may be necessary to prepare a critical area for planting.

Avoid species that may harbor pests. Planting multiple species will help to avoid loss of function due to species-specific pests.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for each field or management unit according to the criteria and operation and maintenance sections of this standard. Specifications need to describe the requirements for applying this practice to meet the intended purpose.

Record practice specifications using approved specification sheets, job sheets or other acceptable documentation.

The following elements need to be addressed in the plan, as applicable, to meet the intended purpose.

- Site Preparation
- Topsoil
- Fertilizer Application
- Seedbed/Planting Bed Preparation

- Methods of Seeding/Planting
- Time of Seeding/Planting
- Selection of Species
- Seed/Plant Source
- Seed Analysis
- Rates of Seeding
- Mulching
- Planting Trees, Shrubs and Vines
- Supplemental Water for Plant Establishment
- Protection of Plantings

OPERATION AND MAINTENANCE

Manage the area as long as necessary to stabilize the site and achieve the intended purpose.

Control or exclude pests that will interfere with the timely establishment of vegetation. Mowing may be necessary to control the competition of weeds and/or nurse crop during the establishment period of the perennial plants. If herbicides are needed, refer to Florida NRCS Conservation Practice Standard Pest Management, Code 595; follow current Univ. Florida, IFAS recommendations (<http://edis.ifas.ufl.edu/WG006>); and adhere to label instructions.

Inspections, reseeding or replanting, fertilization, and pest control may be needed to ensure that this practice functions as intended throughout its expected life. Observation of establishment progress and success should be performed at regular intervals until the practice has met the criteria for successful establishment and implementation.

Maintenance should include a regular lime and fertilization program based on soil test recommendations. In the absence of soil tests, follow general lime and fertilization recommendations listed for establishment.

Where establishment of vegetation creates potential habitat for grass-nesting birds, the impacts of vegetative disturbance upon these birds and their nests should be considered and included in operation and maintenance plans. Do not conduct maintenance activities that result in disturbance of vegetation during the primary nesting season for grass-nesting birds where occupied habitat for these species exists.

Sites seeded to suitable species may be grazed after established. At a minimum do not allow grazing until 18 months after planting and do not graze bermudagrass or bahiagrass stands less than 6 inches and switchgrass less than 12 inches.

REFERENCES

USDA, NRCS. 2006. The PLANTS Database (<http://plants.usda.gov>, 19 October 2006). National Plant Data Center, Baton Rouge, LA 70874-4490 USA

USDA, NRCS, Florida Agronomy Field Handbook.

USDA, NRCS. 1979. Management for wildlife: a supplement to wildlife standard and specifications for Florida. Gainesville, FL. 89 pp.