



Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

Critical Area Planting

Code 342

(Ac)

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 seeding/planting methods.

PURPOSE

- Stabilize areas with existing or expected high rates of soil erosion by wind or water.
- Stabilize stream and channel banks, pond and other shorelines, earthen features of structural conservation practices.
- Stabilize 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 restoration sites.
- Construction areas.
- Conservation practice construction sites.
- Areas needing stabilization before or after natural disasters such as floods, hurricanes, tornados, and wildfires.
- Eroded banks of natural channels, banks of newly constructed channels, and lake shorelines.
- Other areas degraded by human activities or natural events.

CRITERIA

General Criteria Applicable to All Purposes

Site preparation. Conduct a site investigation to identify any physical, chemical, or biological conditions that could affect the successful establishment of vegetation.

Clear areas to be planted of unwanted materials and smooth or shape, if needed, to meet planting purpose(s).

Prepare a suitable seedbed for all seeded species. Rip compacted layers and re-firm the soil prior to seedbed preparation, as needed.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State office](#) or visit the [Field Office Technical Guide](#).
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As site conditions dictate, when grading slopes, stockpile topsoil to be redistributed over area to be planted.

Species selection. Select species for seeding or planting that are suited to local site conditions and intended uses, and common to the site or location.

Selected species will have the capacity to achieve adequate density and vigor to stabilize the site within an appropriate period.

Use only perennial plant species. Plantings can consist of pure stands of perennial grasses, legumes, trees, shrubs, vines or mixtures of these classes of vegetation. 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 [Forage and Biomass 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.

Do not plant any species found on the Florida Department of Agriculture and Consumer Services or the Florida Department of Environmental Protection noxious or prohibited weed lists (see link below for this information). Additionally, do not plant any species listed as a Category 1 invasive species by the Florida Exotic Pest Plant Council (<http://www.fleppc.org/list/list.htm>).

Establishment of vegetation. Plant seeds using the method or methods best suited to site and soil conditions.

Limit sod placement to areas that can naturally supply needed moisture or sites that can be irrigated during the establishment period. Place and anchor sod using techniques to ensure that it remains in place until established. See [Critical Area Planting Guidance](#) for more information.

Specify species; 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 before application. Use only viable, high quality seed or planting stock.

Planting or seeding needs to be done during the approved planting dates for the species to be used.

Base time and manner of planting on what best ensures establishment and growth of the selected species.

Apply soil amendments (e.g., lime, fertilizer, compost) according to Florida NRCS Conservation Practice Standard [Nutrient Management, Code 590](#). 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](#).

Mulch plantings as necessary to ensure establishment and other disturbed areas as needed to prevent erosion.

Avoid or minimize to the extent practical impact to cultural resources, wetlands, and Federal and State protected species during planning, design and implementation of this conservation practice. For more information, see 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, [Handbooks Title 180 Part 600](#)) FL Supplements to Parts 600.1 and 600.6; National Cultural Resources Procedures Handbook (NCRPH, [Handbooks Title 190 Part 601](#)); and The National Environmental Compliance Handbook (NECH, [Handbooks Title 180 Part 610](#)).

Additional Criteria to Stabilize Stream and Channel Banks, Pond and Other Shorelines, Earthen Features of Structural Conservation Practices

Bank and channel slopes. Shape channel side slopes so that they are stable and allow establishment and maintenance of desired vegetation.

A combination of vegetative and structural measures may be necessary on slopes steeper than 3:1 to ensure adequate stability.

Species selection. Plant material used for this purpose must—

- Be adapted to the hydrologic zone into which they will be planted.
- Be adapted and proven in the regions in which they will be used.
- Be compatible with existing vegetation in the area.
- Protect the channel banks but not restrict channel capacity.

Establishment of vegetation. Specify species, planting rates, spacing, methods and dates of planting based on Florida NRCS [Critical Area Planting Guidance](#).

Identify and protect desirable existing vegetation during practice installation.

Use a combination of vegetative and structural practices with living and inert material when flow velocities, soils, and bank stability preclude stabilization by vegetative establishment alone. Use Florida NRCS Conservation Practice Standard Streambank Stabilization, Code 580, for structural measures.

Control existing vegetation on a site that will compete with species to be established vegetatively (e.g., bare-root, containerized, ball-and-burlap, potted) to ensure successful establishment of the planted species.

Plant streambank stabilization vegetation in accordance with the NRCS [NRCS Engineering Field Handbook Part 650](#), Chapter 16, “Streambank and Shoreline Protection,” and Chapter 18, “Soil Bioengineering for Upland Slope Protection & Erosion Reduction.”

Site protection and access control. Restrict access to planted areas until fully established.

Additional Criteria to Stabilize Areas Such As Sand Dunes and Riparian Areas

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>).

Include sand trapping devices such as sand fences or brush matting 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

Species or diverse mixes that are adapted to the site and have multiple benefits should be considered. Native species may be used when appropriate for the site.

To benefit pollinators and other wildlife, flowering shrubs and wildflowers with resilient root systems and good soil-holding capacity also should be considered for incorporation as a small percentage of a larger grass-dominated planting. Where appropriate consider a diverse mixture of forbs to support pollinator habitat.

Planning and installation of other CPSs such as Diversion (Code 362), Obstruction Removal (Code 500), Subsurface Drain (Code 606), Underground Outlet (Code 620), or Anionic Polyacrylamide Application (Code 450) may be necessary to prepare the area or ensure vegetative establishment.

Areas of vegetation established with this practice can create habitat for various type of wildlife. Maintenance activities, such as mowing or spraying, can have detrimental effects on certain species. Perform management activities at the times and in a manner that causes the least disruption to wildlife.

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. Record practice specifications using approved Implementation Requirements document.

Address the following elements in the plan, as applicable, to meet the intended purpose(s):

- Practice purpose(s)
- Site preparation
- Topsoil requirements
- Fertilizer application
- Seedbed/planting area preparation
- Timing and method of seeding/planting
- Selection of species
- Seed/plant source
- Seed analysis/pure live seed (PLS)
- Seeding rate/plant spacing
- Mulching, PAM, or other stabilizing materials
- Supplemental water needed for establishment
- Protection of plantings
- Describe successful establishment (e.g., minimum percent ground/canopy cover, percent survival,

stand density)

OPERATION AND MAINTENANCE

- Control access to the area to ensure the site remains stable.
- Protect plantings shall be protected from pests (e.g., weeds, insects, diseases, livestock, or wildlife) as necessary to ensure long-term survival.
- Inspections, reseeding or replanting, and fertilization may be needed to ensure that this practice functions as intended throughout its expected life.
- Observe establishment progress and success at regular intervals until the practice has met the criteria for successful establishment and implementation.
- Description of successful establishment (e.g., minimum percent ground/canopy cover, percent survival, stand density).

REFERENCES

Federal Interagency Stream Restoration Working Group. 1998. Stream corridor restoration: principles, processes, and practices. USDA NRCS National Engineering Handbook, Part 653.

USDA NRCS. 2007. National Engineering Handbook, Part 654. Stream restoration guide.

USDA NRCS. 2015. The PLANTS Database (<http://plants.usda.gov>, 8 December 2015). National Plant Data Team, Greensboro, NC.