

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
CRITICAL AREA PLANTING

(Ac.)

CODE 342

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 stream and channel banks, pond and other shorelines – Resource concern (SOIL EROSION– Excessive bank erosion from streams shorelines or water conveyance channels).
- Stabilize areas with existing or expected high rates of soil erosion by wind or water – Resource concern (SOIL EROSION – Concentrated flow erosion and/or SOIL EROSION - Sheet, rill, & wind erosion and/or SOIL QUALITY DEGRADATION – Concentration of salts or other chemicals).
- Stabilize areas, such as sand dunes and riparian areas – Resource concern (SOIL EROSION – Concentrated flow erosion and/or SOIL EROSION - Sheet, rill, & wind erosion).

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to highly disturbed areas such as active or reclaimed mined lands, urban conservation sites, road construction areas and conservation practice construction sites. Grassed waterways, the bottoms of spillways and road banks are specific examples of sites where this practice may be used to control soil erosion from water. Soil subject to erosion by bodies of water include

banks of natural and constructed channels and lake shorelines. Other areas may require stabilization after natural disasters (such as floods, hurricanes, tornados and wildfires) and human activities.

CRITERIA

General Criteria Applicable To All Purposes

Site Preparation. A site investigation shall be conducted to identify any physical, chemical, or biological conditions that could affect the successful establishment of vegetation.

Areas to be planted will be cleared of unwanted materials and smoothed or shaped, if needed, to meet planting and landscaping purposes. Practices for grading and shaping, applying lime and fertilizer, as well as cover crops, mulches and mats on upland sites, are described in Appendix I.

A suitable seedbed shall be prepared for all seeded species. Compacted layers will be ripped and the soil re-firmed prior to seedbed preparation.

Species Selection. Species selected for seeding or planting shall be suited to current site conditions and intended uses, and be resistant to diseases or insects 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.

Do not plant noxious weeds to control erosion. The State of Georgia does not have a list of noxious weeds; however, the state has adopted the federal list. Information about specific species is available through the NRCS PLANTS Database

Conservation practice standards are reviewed periodically and updated if needed. 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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(<http://plants.usda.gov/java/noxiousDriver>). Invasive weeds are found at <http://www.gaepcc.org/>.

Establishment of Vegetation. Seeds will be planted using the method or methods best suited to site and soil conditions.

Sod placement shall be limited to areas that can naturally supply needed moisture or sites that can be irrigated during the establishment period.

Sod will be placed and anchored using techniques to ensure that it remains in place until established.

Species, rates of seeding or planting, minimum quality of planting stock (e.g. pure live seed (PLS) or stem caliper), method of seedbed preparation, and method of establishment shall be specified before application. Only viable, high quality seed or planting stock will be used.

Seeding or planting shall be done at a time and in a manner that best ensures establishment and growth of the selected species. What constitutes successful establishment (e.g. minimum percent ground/canopy cover, percent survival, stand density) shall be specified before application.

Planting shall be done during approved times for the species to be used. Plantings in upland sites shall be mulched as necessary to ensure establishment.

Apply soil amendments (e.g. lime, fertilizer, compost) to the categories of plants in (Tables 1-5, Appendix 2) according to the requirements in the Field Office Technical Guide. Specifically, apply fertilizer and lime according to the requirements of the category of plant available through the “quick crop search” option of the “Soil Test Handbook for Georgia” <http://aesl.ces.uga.edu/>. Examples of specific crops for critical areas (followed by corresponding crop category in “The Handbook”) include warm and cool-season perennial grasses (lookup pasture recommendations for individual species), temporary cover (individual crops), native grasses (switchgrass and other native grasses for wildlife), shrubs (general ornamental shrubs) and pine trees. The application of amendments normally does not apply to aquatic plants (Table 6). Furthermore, the requirement for establishing cover crop in Georgia Nutrient Management Standard (Code

590) does not apply for establishing vegetation in riparian critical areas.

Additional Criteria to Stabilize Stream and Channel Banks and Shorelines

When slopes are modified for seeding, topsoil will be stockpiled and spread over areas to be planted as needed to meet planting and landscaping needs.

Bank and Channel Slopes. Channel side slopes shall be shaped so that they are stable and allow establishment and maintenance of desired vegetation.

Slopes steeper than 2:1 shall not be stabilized using vegetation alone. A combination of vegetative and structural measures will be used on these slopes to ensure adequate stability.

Species Selection. Plant material used for this purpose shall:

- adapted to the hydrologic zone (see Fig. 1) into which they will be planted.
- be adapted and proven in the regions in which they will be used.
- when mature, produce plant communities that are compatible with those in the area.
- protect the channel banks but not restrict channel capacity.

Establishment of Vegetation. The species used, planting rates, spacing, and methods and dates of planting shall be based on plant materials program trials or other technical guidance, such as local planting guides or technical notes.

Identify, mark, and protect desirable existing vegetation during practice installation.

A combination of vegetative and structural measures using living and inert material shall be used when flow velocities, soils, and bank stability preclude stabilization by vegetative establishment alone.

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

Site Protection and Access Control.

Grazing animal access to planted areas will be controlled for a minimum of two growing seasons during the establishment period.

All areas to be grazed will have a grazing plan that meets the criteria in the local Field Office Technical Guide.

Grazing shall be permanently excluded on high hazard sites, such as cut banks, areas of seepage or other potentially unstable areas.

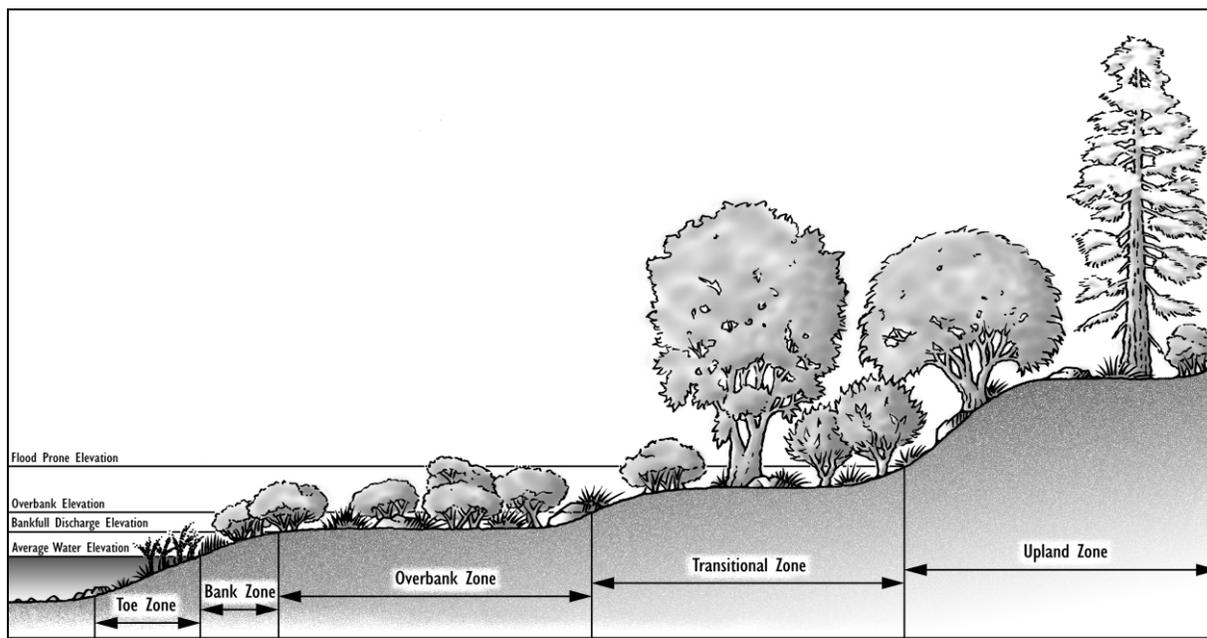


Figure 1. Location of hydrologic zones along a channel or shoreline.

Definitions and descriptions of hydrologic zones used for channels and shorelines:

Bankfull Discharge Elevation - In natural streams, it is the elevation at which water fills the channel without overflowing onto the flood plain.

Bank Zone - The area above the Toe Zone located between the average water level and the bankfull discharge elevation. Vegetation may be herbaceous or woody, and is characterized by flexible stems and rhizomatous root systems.

Overbank Zone - The area located above the bankfull discharge elevation continuing upslope to an elevation equal to two thirds of the flood prone depth. Vegetation is generally small to medium shrub species.

Toe Zone - The portion of the bank that is between the average water level and the bottom of the channel, at the toe of the bank. Vegetation is generally herbaceous emergent aquatic species, tolerant of long periods of inundation.

Transitional Zone - The area located between the overbank zone, and the flood prone width elevation. Vegetation is usually larger shrub and tree species.

Upland Zone - The area above the Transitional Zone; this area is seldom if ever saturated.

Note: some channels or shorelines have fewer than four hydrologic zones because of differences in soils, topography, entrenchment and/or moisture regime.

Additional Criteria to Restore Coastal Areas, such as Sand Dunes and Riparian Areas

In Georgia, the goal will likely be to establish a living shoreline based on the restoration of oyster reefs. Planting marsh and transitional plants for living shorelines may result in a natural plant transition to upland habitats (Appendix 2, Table 6).

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.

Local plant lists including appropriate species shall be developed and utilized depending upon the site and other requirements.

Sand trapping devices such as sand fences or brush matting shall be included in the revegetation/stabilization plans where applicable.

Additional Criteria to Restore Reclaimed Mined Areas

In 2013, Georgia's permitted surface mining facilities (101,878 acres) include kaolin mines (most of 55,502 acres), quarries (35,243 acres), borrow pits (7,355 acres) and dredge operations (3,778 acres). The State's structural and vegetative requirements for stabilizing reclaimed land are described in the Surface Mining Permit (http://www.gaepd.org/Files_PDF/forms/lpb/smlupfor.pdf) and in the Rules Georgia Department of Natural Resources, Environmental Protection Division, Chapter 391-3-3-.06 Final Acceptable Reclamation, Amended (http://rules.sos.state.ga.us/cgi-bin/page.cgi?g=GEORGIA_DEPARTMENT_OF_NATURAL_RESOURCES/ENVIRONMENTAL_PROTECTION/SURFACE_MINING/index.html&d=1).

CONSIDERATIONS

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

To benefit pollinators and other wildlife, flowering shrubs and wildflowers with tough 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 legumes and forbs to support pollinator habitat.

Native species should be considered when appropriate. See Appendix 2 Table 5 and Georgia Tree and Shrub Establishment (Code 612) and Upland Wildlife Habitat Management (Code 645) Standards for more information regarding the establishment of other vegetation in critical areas. Although wildlife management is not a purpose of this standard, a positive effect on pollinators and other wildlife may be obtained by adding selected species to critical area plantings.

Avoid species that may harbor pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

Planning and installation of other conservation practices such as Diversion (Code 362), Obstruction Removal (Code 500), Subsurface Drain (Code 606), or Underground Outlet (Code 620) 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 Requirement document, including the jobsheet.

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

- Site preparation
- Topsoil requirements
- Fertilizer application
- Seedbed/planting area preparation
- Methods of seeding/planting

- Time of seeding/planting
- Selection of species
- Seed/plant source
- Seed analysis
- Seeding rate/plant spacing
- Mulching
- Supplemental water needed for establishment
- Protection of plantings

OPERATION AND MAINTENANCE

Use of the area shall be managed as long as necessary to ensure the site remains stable.

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. Observation of establishment progress and success should be performed at regular intervals until the practice has met the criteria for successful establishment and implementation.

Use of the area shall be managed as long as necessary to stabilize the site and achieve the intended purpose. Maintain the perennial grass to a height no less than 6 inches (Georgia NRCS Access (Code 472) and Prescribed Grazing (Code 528) Standards. Control weeds and woody vegetation by annual mowing (Forage and Biomass Pasture and Hay Planting (Code 512), Brush Management (314) or Herbaceous Weed Control (315). Apply fertilizer and lime for the maintenance of perennial grasses and other cover species according to the results of a current soil test. Control or exclude pests that will interfere with the timely establishment of vegetation.

Inspections, reseeding or replanting, fertilization, and pest control may be needed to insure 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.

Where establishment of vegetation creates potential habitat for fawns or grass-nesting birds, the impacts of vegetative disturbance upon these animals should be considered and included in operation and maintenance plans. Maintain the permanent vegetation during April 1 - August 31 throughout the state (Georgia Department of Natural Resources, Wildlife Resources Division, Nongame-Endangered Wildlife Program. 1996).

REFERENCES IN ADDITION TO NRCS, NHCP SEPTEMBER 2013

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