

**NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA CONSERVATION PRACTICE STANDARD**

TREE / SHRUB ESTABLISHMENT

(Ac.)

CODE 612

DEFINITION

Establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration.

PURPOSE

Establish woody plants for:

- forest products such as timber, pulpwood, and energy biomass
- wildlife habitat
- long-term erosion control and improvement of water quality
- treating waste
- storing carbon in biomass
- energy conservation
- improving or restoring natural diversity
- enhancing aesthetics

CONDITIONS WHERE PRACTICE APPLIES

Tree/shrub establishment can be applied on any appropriately prepared site where woody plants can be grown.

Utilize other Virginia Conservation Practice Standards for specialized tree/shrub establishment situations, e.g., *Riparian Forest Buffer (Code 391)*, *Alley Cropping (Code 311)*; *Windbreak/Shelterbelt Establishment (Code 380)*; *Critical Area Planting, (Code 342)*; *Hedgerow Planting (Code 422)* *Restoration and Management of Rare and Declining Habitats (Code 643)*.

CRITERIA

General Criteria Applicable to All Purposes

Composition of species will be adapted to site conditions and suitable for the planned purpose(s).

Planting or seeding rates will be adequate to accomplish the planned purpose for the site according to the Virginia Plant Establishment Guide.

Species considered locally invasive or noxious shall not be used.

Planting dates and care in handling and planting of the seed, cuttings or seedlings will ensure that planted materials have an acceptable rate of survival.

Only viable, high-quality and adapted planting stock or seed will be used. All plant materials should comply with minimum standards such as those established by Forest Service or VA Department of Forestry.

A precondition for tree/shrub establishment is appropriately prepared sites. Refer to Virginia Conservation Practice Standard *Tree/Shrub Site Preparation (Code 490)*.

Adequate seed sources and suitable soil condition or advanced reproduction needs to be present or provided for when using natural regeneration to establish a stand.

Selection of planting technique and timing will be appropriate for the site and soil conditions.

The acceptability and timing of coppice regeneration shall be based on species, age and diameter.

The planting will be protected from pests and fire. Refer to Virginia Conservation Practice

Standards: *Pest Management (Code 595)*, *Prescribed Burning (Code 338)* and *Firebreak (Code 394)* as appropriate.

Each site will be evaluated to determine if mulching, supplemental water or other cultural treatments (e.g., tree protection devices, brush mats) will be needed to assure adequate survival and growth. Refer to the VA Department of Forestry guidelines for specifications.

Additional Criteria for Treating Waste

Species used to treat waste shall have fast growth characteristics, extensive root systems, high nutrient uptake capacity and tolerance of the planned effluent. Species that may invade surrounding areas outside of treatment facility shall be avoided.

Additional Criteria for Improving or Restoring Natural Diversity

Composition of species selected for planting or those favored for natural regeneration will be native to the site and create a successional stage or state that can progress to the potential natural plant community.

Additional Criteria for Storing Carbon in Biomass

The species and plant communities that attain biomass more quickly will sequester carbon faster. The rate of carbon sequestration is enhanced as trees and/or shrubs mature and soil organic matter increases. Select plants that have higher rates of growth and potential for carbon sequestration in biomass and are adapted to the site. Plant species at the appropriate stocking rate for the site.

Additional Criteria for Wildlife

In single species pine plantings, plant a maximum of 363 trees per acre (10X12).

Plant all access roads and firebreaks to wildlife desirable plants.

CONSIDERATIONS

Priority should be given to plant materials that have been selected and tested in tree/shrub improvement programs.

Plans for landscape and beautification plantings should consider foliage color, season and color of flowering, and mature plant height.

Consider using species that meet local wildlife needs.

Tree/shrub arrangement and spacing should allow for and anticipate the need for future access lanes and firebreaks for purposes of stand management.

Residual chemical carryover should be evaluated prior to planting. Alter species selection and/or timing of planting/seeding if necessary.

When underplanting, trees should be planted sufficiently in advance of overstory removal to ensure full establishment.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Perform necessary site preparation to insure adequate establishment conditions.

Access by vehicles or equipment during or after tree/shrub establishment shall be controlled to protect new plants and minimize erosion, compaction and other site impacts. Refer to the Virginia Conservation Practice Standard, *Use Exclusion (Code 472)*.

The trees and shrubs will be inspected periodically and protected from adverse impacts including insects, diseases or competing vegetation, fire and damage from livestock or wildlife.

If needed, competing vegetation will be controlled until the woody plants are established. Weeds and pests will be controlled. If pesticides are used, refer to Virginia Conservation Practice Standard, *Pest Management (Code 595)*.

Replanting will be required when survival is inadequate.

Periodic applications of nutrients may be needed to maintain plant vigor. After tree and/or shrubs are established, refer to the Virginia Conservation Practice Standards, *Forest Stand Improvement (Code 666)* and *Tree/Shrub Pruning (Code 660)* for subsequent management.

REFERENCES

NRCS, Field Office Technical Guide.

Virginia Department of Forestry website
<http://www.dof.virginia.gov/index.html>

NRCS, "Plant Establishment Guide for Virginia".

NRCS, eFOTG, Virginia Technical Note, Forestry #3, "Tree and Shrub Establishment Guidelines".

Burns, Russell M. and Barbara H. Honkala, tech cords. 1990 Silvics of North America, 1. Conifers, 2. Hardwoods. Agriculture Handbook 654. U.S. Department of Agriculture, Forest Service, Washington, D.C., Vol. 2.

Virginia Department of Conservation and Recreation, Division of Natural Heritage Native Tree List.

<http://www.dcr.virginia.gov/dnh/natvtree.htm>

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