

NATURAL RESOURCES CONSERVATION SERVICE
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, etc.
Wildlife habitat
Long-term erosion control and improvement of water quality
Treating waste
Storing carbon in biomass
Reduce energy use
Develop renewable energy systems
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) 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) and should be selected from the Virginia Plant Establishment Guide.

No plants on the Federal or state noxious weeds list shall be planted.

Planting or seeding rates will be adequate to accomplish the planned purpose for the site.

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 plants materials should comply with minimum standards such as those established by the Virginia Department of Forestry.

A precondition for tree/shrub establishment is appropriately prepared sites. Refer to Virginia 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 plant and animal pests and fire. Refer to Virginia Conservation Practice Standard *Herbaceous Weed Control (Code 315)*, and/or *Integrated Pest Management (Code 595)* to

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](#).

assist with site-specific strategies for pest prevention, pest avoidance, pest monitoring, and pest suppression.

Specific pesticide recommendations will be obtained from personnel who are licensed by the Virginia Department of Agricultural and Consumer Services in one of the forest pest management categories in accordance with Virginia's Pesticide Laws and Regulations. If chemical herbicides or pesticides are used, follow all instructions for the particular chemical as outlined in the Virginia Pest Management Guide (2011 edition and subsequent revisions) as maintained by the Virginia Cooperative Extension Service. The specific pesticide container label addressing instructions and safety precautions shall be strictly followed as it applies to handling, applying in proximity to water resources, and storage.

Each site will be evaluated to determine if mulching, supplemental water or other cultural treatments (e.g., tree protection devices, shade cards, brush mats) will be needed to assure adequate survival and growth. (Refer to the Virginia Plant Establishment Guide 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 the 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 Developing Renewable Energy Systems

Select plants that can provide adequate kinds and amounts of plant biomass to supply identified bioenergy needs.

Intensity and frequency of energy biomass removals will be managed to prevent long-term negative impacts on the system.

The harvesting of energy biomass shall be accomplished in a manner that will not compromise the other intended purpose(s) and functions.

Additional Criteria to Reduce Energy Use

Orient trees to shade a building to reduce summer energy usage. The first priority is placement on the building's west side where the greatest daily heat gain occurs. The second priority is the east side.

Select plants with a potential height growth that will be taller than the structure or facility being protected.

Use proper plant densities to optimize the shade produced and meet energy reduction needs.

Trees planted within 30 to 50 ft of the building generally provide effective shade to windows and walls depending on tree height potential.

Keep trees at least 10 ft or further from the structure depending on mature crown spread, to avoid damage to foundations or restrict maintenance access to windows and walls.

CONSIDERATIONS

Priority should be given to plant materials that have been selected and tested in tree/shrub improvement programs. All plant materials should comply with minimum standards such as those as established by the American Nursery and Landscape Association, Forest Service, or state-approved nursery.

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

Consider using diverse species combinations which best meet locally native wildlife and pollinator needs.

Consider the invasive potential when selecting plant species.

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

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

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, planting plan, 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.

Control access by vehicles or equipment during or after tree/shrub establishment to protect new plants and minimize erosion, compaction and other site impacts. Refer to Virginia Conservation Practice Standard *Access Control (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.

Replacement of dead trees or shrubs and control of undesirable vegetative competition will be continued until the buffer is, or will progress to, a fully functional condition.

Where tree shelters are used, maintain tree protection twice per year by straightening leaning shelters, replacing broken stakes, and removing bird nets when the tree near the top of the shelter. If the shelter does not have a perforated line and is not photodegradable, the shelter must be cut off when the tree reaches 2.5 to 3 inches in diameter. Remove competing vegetation and wasp nest inside the shelter. Check for fungus growing on the bark

inside the shelter, and if found, remove the shelter.

If needed, control competing vegetation until the woody plants are established. Noxious weeds will be controlled. Refer to Virginia Conservation Practice Standard *Integrated Pest Management (Code 595)* or *Herbaceous Weed Control (Code 315)*.

Replanting will be required when survival is inadequate.

Provide supplemental as needed.

Periodic applications of nutrients may be needed to maintain plant vigor. If nutrients are applied, refer to Virginia Conservation Practice Standard *Nutrient Management (Code 590)*.

After trees and/or shrubs are established, refer to the Virginia Conservation Practice Standard *Forest Stand Improvement (Code 666)* and *Tree/Shrub Pruning (Code 660)* for subsequent management

REFERENCES

McPherson, E. Gregory; Simpson, James R.; Perper, Paula J.; Maco, Scott E.; Gardner, Shelley L.; Cozad, Shauna K.; Xiao, Qingfu 2006. Midwest community tree guide: benefits, costs, and strategic planting. USDA Forest Service General Technical Report PSW-GTR-199, p. 1-99.

Talbert, Cheryl. 2008. Achieving establishment success the first time. Tree Planters Notes, Vol. 52 No. 2 pages 31-37.

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"

Virginia Department of Conservation and Recreation, Division of Natural Heritage, native tree list

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

Virginia Cooperative Extension Service “2011
Pest Management Guide” and subsequent

revisions available at:

http://ppwsipm.contentsrvr.net/pest_management_guides.vesh

"The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer."