

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, 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 practice standards for specialized tree/shrub establishment situations, e.g., Riparian Forest Buffer (391); Alley Cropping (311); Windbreak/Shelterbelt Establishment (380); Critical Area Planting (342); and Silvopasture (381).

CRITERIA**General Criteria Applicable to All Purposes**

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

Species considered locally invasive or noxious shall not be used.

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.

A precondition for tree/shrub establishment is appropriately prepared sites. Refer to practice standard Forest Site Preparation (490).

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 [electronic Field Office Technical Guide](#).

Adequate seed sources 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. If pesticides are used, refer to standard Pest Management, 595, as appropriate.

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.

All planned measures will be in compliance with Texas Forestry Best Management Practices.

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.

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.

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.

If the land user decides to plant trees for special purposes such as wildlife, beautification, screening, pollution reduction, watershed protection, ecological restoration, noise abatement, Christmas tree production, or carbon sequestration, it is advisable that he/she consults with a specialist prior to planting.

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

Where multiple species are available to accomplish the planned objective, consideration should be given to selecting the species which best meet wildlife needs.

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.

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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

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 standard Access Control (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.

Replanting will be recommended when survival is inadequate. (A survival of 60% or more of the original planting density at the end of the first growing season is considered acceptable). Considerations to include are the landowner's objectives for this property, the specific site conditions, difficulty in replanting the site and availability of resources.

Periodic applications of nutrients may be needed to maintain or enhance plant vigor.

After trees and/or shrubs are established, refer to the standards: Herbaceous Weed Control (315), Forest Stand Improvement (666), and Tree/Shrub Pruning (660), for subsequent management possibilities.

REFERENCES.

Chandler, James L. *Regenerating Southern Pines*. Texas Agricultural Extension Service. 10 pages

Harlow, William M., Ellwood S. Harrar, and Fred M. White. 1978. *Textbook of Dendrology*. McGraw-Hill Book Co. 509 pp.

U.S. Department of Agriculture Forest Service. *Silvics of Forest Trees of the United States*. Agricultural Handbook No. 271.762 pp.

Wakeley, Philip C. 1954. *Planting the Southern Pines*. USDA Forest Service Agriculture Monograph No. 18. 233 pp.

U.S. Department of Agriculture Forest Service. *A Guide to the Care and Planting of Southern Pine Seedlings*. Management Bulletin R8-MB39. 1989. 44pp.