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 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), Hedgerow Planting (422).

CRITERIA

General Criteria Applicable to All Purposes

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

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.

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

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. Refer to standard Integrated Pest Management (595) to assist with site-specific strategies for pest prevention, pest avoidance, pest monitoring, and pest suppression.

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

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.

assure adequate survival and growth.

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.

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, 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.

If needed, competing vegetation will be controlled until the woody plants are established. Noxious weeds will be controlled. Refer to standard Integrated Pest Management (595).

Replanting will be required when survival is inadequate.

Supplemental water will be provided as needed.

Periodic applications of nutrients may be needed to maintain plant vigor. If nutrients are applied, refer to Nutrient Management (590).

After trees and/or shrubs are established, refer to the standards Forest Stand Improvement (666) and Tree/Shrub Pruning (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.