

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

SILVOPASTURE ESTABLISHMENT

(Ac.)

CODE 381

DEFINITION

An agroforestry application establishing a combination of trees and compatible forages on the same acreage.

PURPOSE

- Provide forage for livestock and the production of wood products.
- Increase carbon sequestration.
- Improve water quality.
- Reduce erosion.
- Enhance wildlife habitat.
- Reduce fire hazard.
- Provide shade for livestock.

CONDITIONS WHERE PRACTICE APPLIES

Situations where silvopasture establishment applies includes: 1) pasture where trees can be added; 2) forest where forages can be added; 3) Land on which neither the desired trees nor forages exist in sufficient quantity to meet the land user's objectives.

This practice may be applied on any area that is suitable for the desired plants.

CRITERIA

General Criteria Applicable to All Purposes

Tree species must be adapted to the site and compatible with planned livestock management.

Forage species must be adapted to the site and compatible with the planned management of the site.

Where trees will be added to existing pasture, site preparation should be based on existing vegetation and soil conditions. Refer to the Oklahoma NRCS Forest Site Preparation (490) standard for guidance. Trees will be planted at the recommended density. Refer to the Oklahoma NRCS Tree/Shrub Establishment (612) standard for guidance. No more than 400 trees per acre will be planted to maintain grass vigor. The alley widths should be 15 feet or 20 feet with a double row or triple row set of trees on each side. The spacing between each row in a set should be 8 or 10 feet. The spacing between each tree in each row should also be 8 or 10 feet. Refer to figure 1 and table 1 in Agroforestry Technical Note 22 dated December 2000.

Existing forests should be thinned to remove trees that are not beneficial for wildlife or wood production while leaving no more than 400 per acre. Establishment of forage species will be in accordance with the Oklahoma NRCS Pasture and Hayland Planting (512) and Range Planting (550) standards.

When using pesticides follow label recommendations and the Oklahoma NRCS Pest Management (595) standard for guidance.

Only viable, high quality, and adapted planting stock or seed will be used.

The planting shall be done at a time and manner to insure survival and growth of selected species.

Tree spacing needs to exceed width of equipment to be used in management.

Additional Criteria to Provide Forage for Livestock and the Production of Forest Products

The forage species must be identified as suitable for the targeted livestock.

Livestock grazing shall be deferred until the average height of the tree's terminal bud exceeds the browsing height of the livestock or of sufficient size to resist breakage or until suitable use exclusion measures for the protection of the woody plants are established. A hay crop may be harvested during this period.

The tree species must have potential to produce forest products.

Additional Criteria to Increase Carbon Sequestration

Trees will be planted since they have higher rates of sequestration and it is stored for long periods. Trees planted must be adapted to the site to assure strong health and vigor.

Plant and manage the appropriate stocking rate for the site to maximize biomass production.

Additional Criteria to Improve Water Quality

Favor trees and forages that have growth characteristics conducive to high nutrient uptake. Refer to the Oklahoma NRCS Nutrient Management (590) standard for guidance.

Additional Criteria to Reduce Erosion

If ripping is necessary for site preparation and soil erosion is a problem, then it should be done on the contour and the trees planted in the rip.

Additional Criteria to Enhance Wildlife Habitat

Maintain forage species and understory shrubs that will provide forage, browse, seed, cover or nesting habitat for the wildlife species of concern. For additional guidance refer to the Oklahoma NRCS Upland Wildlife Habitat Management (645) standard.

CONSIDERATIONS

Failure to maintain adequate forage for livestock may result in excessive tree damage and/or loss.

Location and distribution of facilities for water, minerals or supplemental feed should be such

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that livestock are not encouraged to over-utilize areas of silvopasture.

Rows should be oriented in an east-west orientation where feasible and practical to allow maximum sunlight onto grass strips.

Where water erosion and/or runoff from melting snow is a hazard, it should be controlled by supporting practices.

Wildlife should be considered when selecting tree species. Species diversity, including use of native species, should be considered.

Consideration should be given to adverse offsite effects.

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. Forms OK-CPA-4 and 4a are available for documentation.

OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

- Forage and forest management will follow the Oklahoma NRCS Prescribed Grazing (528) and Forest Stand Improvement (666) standards.
- Replanting will be required when plant survival is inadequate to meet practice and client objectives.
- Competing vegetation will be controlled until the trees are established.
- Periodic applications of nutrients may be needed for establishment and to maintain plant vigor. Refer to the Oklahoma NRCS Nutrient Management (590) standard for further guidance.
- Inspect trees and shrubs periodically and protect from adverse impacts including

insects, diseases or competing vegetation. The trees or shrubs will also be protected from wildfire and damage from livestock and wildlife.

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