NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

SILVOPASTURE ESTABLISHMENT

(Ac.)

CODE 381

DEFINITION

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

PURPOSE

- Provide forage for livestock, and produce wood products.
- Increase carbon sequestration.
- Improve water quality.
- Reduce erosion.
- Enhance wildlife habitat.
- Reduce fire hazard.
- Provide shade for livestock.
- Develop renewable energy systems

CONDITIONS WHERE PRACTICE APPLIES

Situations where silvopasture establishment applies includes: 1) pasture where trees or shrubs 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. (See Forest Site Preparation Standard 490.) Plant trees at the recommended density. (See Tree and Shrub Establishment Standard 612.)

For existing forests, remove a sufficient number of trees and/or prune existing trees to allow adequate light penetration for forage establishment. Establish forage in accordance with Forage and Biomass Planting Standard 512.

Follow label directions when using pesticides. Refer to Integrated Pest Management Standard 595 for recommended mitigation.

Use only viable, high quality planting stock or seed.

Use a method, and plant at a time to ensure survival and growth of selected species.

Tree row spacing needs to exceed the width of management equipment.

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

Defer livestock access until the average height of tree terminal buds exceeds the browsing height of the livestock, or trees are large enough to tolerate the presence of animals. Alternately, establish temporary use-exclusion to allow animal access to the forage while protecting the trees. Hay can be harvested during this time.

Plant trees at an appropriate density to allow acceptable forage production and wood products.

Only use tree species that have market potential.

Additional Criteria to Increase Carbon Sequestration

For optimal carbon sequestration, select plants

that have high growth rates and large root systems.

Manage animal stocking rate to maximize biomass production and retention.

Additional Criteria to Improve Water Quality

Favor trees and forages with high nutrient uptake potential.

Additional Criteria to Reduce Erosion

Place linear woody plantings on or near the contour when water erosion is a concern.

Additional Criteria to Enhance Wildlife Habitat

Establish 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 Wildlife Upland Habitat Management (645).

CONSIDERATIONS

Failure to maintain adequate forage for livestock may result in excessive tree damage.

Water, mineral, or supplemental feeding areas should be placed to encourage livestock distribution throughout the silvopasture.

Rows should be oriented in an east-west direction where practical to allow maximum sunlight for the forage.

If grazing does not maintain reduced fuel loads, prescribed burning should be considered providing the trees are fire-adapted.

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

Plants established in cropping systems should have root systems that have minimal impact on crop growth.

PLANS AND SPECIFICATIONS

Prepare plans and specifications that are site-specific using job sheets, technical notes, and the narrative portion of the conservation plan.

OPERATION AND MAINTENANCE

The following are required to ensure 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):

- Follow Prescribed Grazing 528 and Forest Stand Improvement 666 Standards for guidelines of forage and tree management respectively.
- Replanting is required when plant survival is inadequate to meet practice and client objectives.
- Control competing vegetation until the trees and forage are established.
- Plant nutrient application may be needed for establishment and periodically to maintain plant vigor. Refer to Nutrient Management Standard 590 for further guidance.
- Inspect trees and forage periodically and manage any insect pests, diseases or competing vegetation.

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