**alliance practice worksheet**

state

SILVOPASTURE (381)

*The conditions and specifications below are adapted from the Natural Resources Conservation Service. Producers who are installing these practices under the Alliance will use the conditions and implementation guides below but are exempt from NRCS verification and certification. Completing the Purposes and Practice Specifications on this document is sufficient to self-verify practice installation and completion.*

# Farm Info

|  |  |
| --- | --- |
| Producer Name |  |
| County (Farm Location) |  |
| FSA Farm Number |  |
| FSA Field Number(s) |  |
| FSA Tract Number(s) |  |
| Practice Status:*If a practice has not yet been implemented, select Planned**If a practice has been implemented, select Applied* | [ ]  Planned | [ ]  Applied |
| Planned Date of IMPLEMENTATION: | Date Practice was APPLIED: |

# PRACTICE: SILVOPASTURE (381)

**DEFINITION**: Establishment and/or management of desired trees and forages on the same land unit.

**MINIMUM REQUIREMENTS FOR SILVOPASTURE (381):**

<https://efotg.sc.egov.usda.gov/api/CPSFile/584/381_VA_CPS_Silvopasture_2016>

**CONSIDERATIONS**

This practice is unique in that it spans both the establishment and management of the practice on the land. For the Alliance project, the applicable payment is only for the establishment of the practice. To be eligible for the payment, within the year of the contract the applicant must fully complete the establishment phase of a new practice with the goal of silvopasture in a forested condition that is at least 10-percent stocked by single stemmed woody species of any size that are or will be at least 4 meters (13 feet) tall at maturity and a suitable forage cover for the grazing of the desired livestock species.

Examples include:

1. Tree planting where trees, or a combination of trees and shrubs, are added to existing pasture, range, or cropland,

Including the performance of site preparation and tree/shrub planting as needed based on existing vegetation and soil conditions.

1. When establishing silvopasture in existing forestland, remove a sufficient number of trees, and/or prune existing trees, to allow adequate light penetration for forage establishment and growth.
2. When establishing silvopasture in existing forestland, establishment of an adapted forage species consistent with the Forage and Biomass Planting or Range Planting (Code 550).
3. A combination of the above is necessary to achieve the criteria for the practice.

The practice includes site preparation through completion of the required planting activity or activities within the contract period.

# GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

* Tree and forage species must be adapted to the site and compatible with planned livestock and management.
* No plants on the Federal or state noxious weeds list shall be planted.
* Where trees will be added to existing pasture, site preparation should be based on existing vegetation and soil conditions. Trees will be planted at the recommended tree density.
* For existing forests, remove enough trees and/or prune existing trees to allow adequate light penetration for forage establishment.
* Establishment of forage species will be in accordance with Virginia NRCS Plant Establishment Guide.
* If pesticides are used, follow label recommendations. Refer to Virginia Conservation Practice Standard Integrated Pest Management Standard (Code 595) for guidance on pest prevention, avoidance, monitoring and suppression strategies.
* 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.
* Space trees/shrubs to exceed the width of management equipment.

# TREE Establishment in Forages

* Where trees will be added to existing pasture, prepare the site based on existing vegetation, soil conditions and the type of tree species to be planted. Refer to Virginia Conservation Practice Standard Tree/Shrub Site Preparation (Code 490).
* Plant trees at low density populations at 200 or more trees per acre unless pre-approved by NRCS for a specific purpose. Trees are usually established in single, double or triple row sets.
* Determine tree row spacing, layout and arrangement while considering the size of equipment used for forage management.
* Trees should be planted at the recommended spacing and density shown in the table at the end of this document.
* Livestock grazing shall be deferred until the average height of the trees’ terminal bud exceeds the browsing height of the livestock and the trees are of sufficient size to resist breakage.
* Forages may be machine harvested during this period.

# Establishing Forages in Trees

* For existing forests being converted to silvopasture, thin and/or prune existing trees to reduce canopy cover sufficient for forage establishment and adequate growth.
* Generally, canopy cover of 25-50 percent for warm season grasses, and about 35-60 percent for cool season grasses, is recommended. The rule of thumb is to reduce tree basal area per acre by about 50% or 50 square feet of basal area whichever is greater.
* The lower end of the canopy range should be targeted while forage is being established. Stands at the higher end of the canopy range may indicate that it is time to thin.
* To maintain optimum tree and forage production, thinning adjustments may be necessary due to variability of growth rates among tree and forage species.
* Refer to Virginia NRCS Plant Establishment Guide for specific seeding dates and rates for forage establishment. Tree/shrub spacing needs to exceed width of equipment to be used for forage management.

# Two Types of Thinning Systems:

When converting an existing forest stand to a silvopasture, two types of systems are recommended, Even Distribution System (Selection Thinning) and Alley System (Row Thinning). (Figure 1)

1. **EVEN DISTRIBUTION SYSTEM (SELECTION THINNING)**

The even distribution system utilizes a more intensive tree selection method when thinning the stand. Travel corridors are cut within the stand, at every fifth row or 50 feet apart and trees are removed selectively within the stocked corridor, leaving trees with good form. This system results in a more natural appearance with trees evenly spaced across the landscape. For a first thinning, selection thinning is often difficult because of limited machinery access among small closely spaced trees.

1. **ALLEY SYSTEM (ROW THINNING)**

The alley system utilizes row thinning, with some tree selection within the remaining rows. Specific trees do not have to be marked for removal, so the thinning operation proceeds rapidly once the pattern of row removal is established. This system is more advantageous to traditional farming equipment. If the landowner’s emphasis is more towards forage production and less towards timber and wildlife this system should be considered.

For more guidance in planning tree row spacing, alley width, site preparation and managing tree density over time refer to the USDA-NRCS Agroforestry Notes 18 and 22 located on the VA NRCS eFOTG.

*Note: This summary does not address all requirements and considerations in the VA Silvopasture Establishment Conservation Practice Standard (VA-381). Consult the Conservation Practice Standard for further detail.*

# Goals, Objectives, and/or Specific Purpose:

*Specify the goal, objective or purpose for applying this practice. If multiple purposes, select any that specifically apply.*

[ ]  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. Develop renewable energy systems

# Practice Scenario Description

* Commercial thinning of an existing stand of trees followed by establishment of forage.
* Non-commercial thinning of an existing stand of trees followed by establishment of forage.
* Establish trees into existing grassland containing adequate forage.
* Establish trees and selected forage species on an existing field that does not contain adequate forage or tree cover suitable for the silvopasture system.

**ATTACHMENTS**:

*Please submit the following with this practice worksheet.*

[ ]  Prescribed Grazing Plan attached

[ ]  Forestry plan attached

[ ]  Forestry map attached

|  |
| --- |
| Notes: |
|  |

# EXISTING PLANT STRUCTURE IN AREAS TARGETED FOR SILVOPASTURE ESTABLISHMENT

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Field # | Existing Vegetation *(Forage, trees, or shrubs)* | Size of Area *(acres)* | Average Tree/Shrub Spacing | Trees/ Shrubs Per Acre | Existing%Canopy Cover | Existing Products Harvested1 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*1 Existing product harvested, if any: forage, wood products, etc.*

# Target Established Silvopasture Plant Structure

|  |
| --- |
| Target Established Silvopasture Plant Structure |
| Field # | Vegetation *(Forage, trees, or shrubs)* | Size of Area Covered by Plant *(acres)* | Average Tree/Shrub Spacing | Trees/ Shrubs Per Acre | Maximum% Canopy Cover | Target Products Harvested1 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*1Target products to be harvested, if any: forage, wood products, etc.*

# SILVOPASTURE ESTABLISHMENT PLAN

|  |  |
| --- | --- |
| **Specific Goal:** |  |
| **Forest Thinning:***(include target thinned density sq. ft. basal area, general spacing and arrangement of trees and alleyways)* |  |
| **Tree Planting Arrangement:***(specify planting arrangement, orientation, alley widths, tree species)* |  |
| **Site Preparation Prior to Seeding:***(burning, disking, scalping, sod suppression, soil amendment application as it relates to this establishment scenario)* |  |
| **Forage Establishment:***(species mix, rates, depths, dates, method)* |  |
| **Grazing Management:*** Protect newly planted trees from livestock damage by deferring grazing until terminal buds are above the browse line or by installing access control measures to keep the livestock away from the trees.
* Manage rotational grazing to allow short periods for forage harvest by livestock without overgrazing below 3–4-inch height and allow sufficient rest periods for plant growth and recovery
* Do not use the silvopasture area as a summer sacrifice lot, this can cause permanent damage and ultimately death to the trees.
 |
| **Timeline for Establishment** |

# Recommended Operation and Maintenance

* Forage and forest management will follow Prescribed Grazing 528 and periodic thinning to maintain enough sunlight for forage growth.
* 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 Nutrient Management Standard 590 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.

# PRODUCER SELF-CERTIFICATION

By signing below, I certify that I have reviewed all required documentation, and the information outlined above meet all criteria and requirements as defined in the Natural Resources Conservation Service **SILVOPASTURE (381)** standard and specifications for the identified acres or animal units.

Further, I agree that:

[ ]  I have not received a payment for this conservation practice on these fields and acres from another USDA Conservation Program or another USDA Partnership for Climate-Smart Commodities grant partner.

[ ]  I will retain all practice documentation to support this certification for up to 12 months following practice adoption and will provide this documentation to the Alliance if selected for a spot check. *(Up to 10% of enrolled Alliance participants will be randomly selected for spot checks).*

|  |  |
| --- | --- |
| **Producer Name:** |  |
| **Date:** |  |