

# SilvoPasture Establishment

## Conservation Practice Job Sheet

381-WA-JS

Natural Resources Conservation Service, Washington

January 2007

CLIENT NAME:



NRCS Photo

### Definition:

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

### Purposes:

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes.

- 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 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.

### Conservation Management System

Silvopasture Establishment is an enhancing practice to a conservation management system. The practice is used to establish vegetation (trees and/or forages) for multiple use management. Timber products and livestock grazing are intensely managed. Multiple practices can be established concurrently with other practices to address and solve identified resource concerns.

Other practices that can be used in Silvopasture establishment are: 490-Tree/Shrub Site Preparation, 612-Tree/Shrub Establishment, 484-Mulching, 595-Pest Management, 472-Use Exclusion, 382-Fence, and 645-Wildlife Habitat Management.

For existing forests remove a sufficient number of trees and/or prune existing trees to allow adequate light penetration for forage establishment. Establishment of forage species will be in accordance with Pasture and Hayland Planting Standard 512 or Range Planting Standard 550.

### Specifications

Plans and specifications will include the required seedbed preparation method(s) and soil condition at planting time; the planting stock or seed species, size and origin of source; planting dates; planting method; weed and moisture control methods; and irrigation type (if needed).

Species must be suitable and adapted to the soils, climate and purpose.

Replace dead or dying tree/shrub stock and continue control of competing vegetation to allow proper establishment. Control competing vegetation and pests that degrade silvopasture purpose.

The Natural Resources Conservation Service provides leadership in a partnership effort to help people to conserve, maintain and improve our natural resources and environment

An Equal Opportunity Provider and Employer

Landowner \_\_\_\_\_ Field number \_\_\_\_\_

**Purpose (check all that apply)<sup>1</sup>**

<input type="checkbox"/> Provide forage for livestock and the production of wood products	<input type="checkbox"/> Improve water quality
<input type="checkbox"/> Increase carbon sequestration	<input type="checkbox"/> Reduce erosion
<input type="checkbox"/> Reduce fire hazard	<input type="checkbox"/> Enhance wildlife habitat
	<input type="checkbox"/> Provide shade for livestock

**Establish Trees in Existing Grassland**

Tree Specie(s) to Plant :
Planting Method:
Tree Spacing: Between rows:           ft Within row:               ft Total No. trees:
Site Preparation: (complete 490 Tree/Shrub Site Preparation Specification)
Weed or Moisture control method:
Tree Protection Type :
Livestock exclusion (When and how long):
Additional Info:

**Establish Forages in Existing Forests**

Forage species to plant:
Amount. to plant (lb/ac. Pls):
Site Preparation:
Weed control (method and when) :
Livestock exclusion (When and how long):
Additional Info:

**Forest Treatment <sup>1</sup>**

Thinning:
Pruning:
Slash Treatment:
Prescribed Burning: (Landowner responsible for contacting DNR prior to any burning)
Additional Info:
(1) See Forestry Tech Notes for treatment guidance. Forestry job/spec worksheets will be used to provide site specific info.

The Natural Resources Conservation Service provides leadership in a partnership effort to help people to conserve, maintain and improve our natural resources and environment

An Equal Opportunity Provider and Employer

**SILVOPASTURE ESTABLISHMENT SPECIFICATION SHEET**

## Tree Seedling Handling and Planting Information

**Temporary Storage Instructions:** Planting stock that is dormant may be stored temporarily in a cooler or protected area for 7-10 days. For stock that is expected to begin growth before planting, dig a V-shaped trench (in a moist, shady place) sufficiently deep and bury seedlings so that all roots are covered by soil. Pack the soil firmly and water thoroughly.

**Care at Planting Time:** Keep seedlings roots moist at all times after removal from shipping packages or heel-in trench. At the field site store seedlings in the shade or under a reflective space blanket. Do not use canvas to protect seedlings from solar heating. Use suitable container (bucket, bag, or planting tray) for carrying the trees during the planting operation. Keep wet material around roots to prevent their damage through exposure. Never carry a handful of trees exposed to the sun and wind. Take one tree at a time from the container and plant it immediately. Trim excessively long roots with a sharp hatchet, machete, shears, or scissors. Do not tear or rip roots. Containerized stock roots shall be keep moist at all times.

**Planting Methods:**

**Bareroot Seedlings** - Open a hole or slit deeper than the root size to be planted to accommodate the root system with all roots pointing down (no "J" or "L" shaped roots). Plant seedlings slightly deeper than they grew in the nursery (indicated by a change in bark characteristics) with roots naturally positioned. Do not twist or bunch roots. In slit planting, push the tree down to the bottom of the slit, then with a shaking motion, raise it gently back to the correct level. While holding the tree in an upright position, at the correct depth, bring loose, moist soil in around the root system. Do not let dry soil or surface litter fall into the hole. When the slit or hole is filled, pack the moist soil down firmly. No roots should be exposed or foliage covered.

**Plug** - Plugs are easily planted due to their shape. Plugs are grown in cylindrical containers. Larger size plugs, i.e. 20 cubic inch, have larger root systems and grow quickly. Open a hole and place plug in hole at the same depth as grown in the container. Place moist soil around the plug and pack. Firm up soil completely around plug. An optional, slow release fertilizer can be placed in the bottom of the planting whole. Make sure that initially there is no contact between the fertilizer and seedling roots.

**Un-rooted Cuttings** - For un-rooted cuttings and whips open a hole or slit deep enough to allow cuttings to be inserted so at least 1/2 - 2/3 of the cutting length is below ground. Insert cutting vertically with buds pointing up, insuring that one to three bud remain above ground. Firm the soil around the cutting so good contact with the soil is obtained.

**Containerized** - Containerized plants are best planted in the spring, summer and fall. Dig a hole at least 50 percent wider than the container. Plant the root ball top at or just below natural ground level. Root-bound plants should have the root system slit and flared out over a mound of soil in the planting hole. Cut off any long roots before planting. Refill hole with soil and pack well to remove air-pockets. If available, water plant. Prune off diseased or damaged branches, suckers, etc.

**Moisture Conservation:** Treat competing vegetation for 2 or more years, using one of the following methods.

**Hand or Mechanical** - Use a hoe, shovel, brush cutter or chainsaw to control all competing vegetation in the immediate area (4 foot minimum diameter) of the seedling. Repeat as necessary to keep vegetation away.

**Chemical** - Apply herbicides according to label directions. The herbicide selected must be formulated and registered for applicable landuse. Consult a local weed specialist for rates, timing and restrictions. Repeat as often as needed to control competing vegetation. An area 4 foot in diameter shall be treated.

**Mulch** - Spread mulch material (paper, plastic, geotextile, etc.) around the base of seedling for a minimum of 2.0 ft radius around the seedling. See Mulching Specification #484 and complete job sheet if using mulch.

**Seedling Protection** - Where browsing pests damage seedlings, seedlings will be protected. Protection techniques will be commensurate with the pest causing damage. Acceptable methods include fencing, tree tubes, bud caps, repellants, whole tree protectors

**Operation and Maintenance**

Inspect tree seedlings periodically and protect from damage so proper function is maintained. Replace dead or dying tree stock and continue control of competing vegetation to allow proper establishment. Additional information:

**DESIGN AND INSTALLATION/LAYOUT APPROVAL:**

I have job approval authority and certify this practice has been designed with specifications to meet the conservation practice standard and that the client has been advised of installation and layout elements:

NRCS Representative name and title (type or print):		
NRCS Representative Signature:		Date:

**LANDOWNER/OPERATOR ACKNOWLEDGES:**

- a. They have received a copy of the specifications and understand the contents including the scope and location of the practice.
- b. They have obtained all necessary permits and/or rights in advance of practice application, and will comply with all ordinances and laws pertaining to the application of this practice.
- c. No changes will be made in the installation of the job without prior concurrence of the NRCS.
- d. Maintenance of the installed work is necessary for proper performance during the life of the practice. The practice life is \_\_\_\_\_.

I have reviewed all specifications and agree to install as specified:

Landowner/operator name and title (type or print):		
Landowner/operator Signature:		Date:

**RECORD OF COMPLETION AND CHECK OUT CERTIFICATION:**

Units (_____)	Date Completed by Client:	Date Certified:	Approver's Initials:

I have job approval authority and certify this practice has been applied and meets design specifications:

NRCS Representative name and title (type or print):		
NRCS Representative Signature:		Date:
Notes:		