

TREE AND SHRUB ESTABLISHMENT (612) CONSERVATION PRACTICE DOCUMENTATION WORKSHEET

CLIENT/OPERATING UNIT: _____ LOCATION: _____
 FARM: NO.: _____ TRACT: _____ FIELD(S): _____ JOB APPROVAL CLASS: _____
 NRCS TECHNICIAN: _____ CONTRACT NO. | ITEM No.: _____

Tree and Shrub Establishment is the practice of establishing woody plants by planting seedlings or cuttings, direct seeding, or natural regeneration. This practice may 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., Windbreak/Shelterbelt Establishment (Code 380); Critical Area Planting (Code 342); or, Hedgerow Planting (Code 422).

PURPOSE: (check all that apply)

- | | |
|--|----------------------|
| Forest Products such as Timber, Pulpwood, and Energy Biomass | Wildlife Habitat |
| Long-term Erosion Control and Improvement of Water Quality | Treating Waste |
| Storing Carbon in Biomass | Energy Conservation |
| Improving or Restoring Natural Diversity | Enhancing Aesthetics |

Installation of this practice shall be in accordance with the following drawings, specifications and special requirements. No changes are to be made in the drawings or specifications without prior approval of the certifying NRCS technician.

AREA TREATED: Acres RANGE IN SLOPE: to % DOMINANT SLOPE: %

Planting Type Direct Seeding Pole Cuttings Bare Root Containerized

Area to be planted is identified on conservation plan map?

Area to be planted is identified on map specific to planting? *Map Attached* *Map in Case File*

Conservation Practice Tree and Shrub Site Preparation Practice documentation Worksheet Completed?
NV-CPA-490 in Case File *NV-CPA-490 Attached*

Soil Suitability: reference to Table 1, Table 2, and Table 3

	WELL SUITED	MODERATELY -WELL SUITED	POORLY SUITED	NOT SUITED
Soil Suitability for Hand Planting				
Soil Suitability for Mechanical Planting				
Soil Suitability for Direct Seeding				

Direct Seeding :	PLANNED	AS PLANTED				
Describe method of seeding.						
	<i>Drill; Broadcast/Rake; Broadcast/Harrow or Chain; Hand placement of seed</i>					
Direct Seeding:	PLANNED					
List tree or shrub species to be seeded, percent of each species in seed mixture, planned PLS seeding rate for each species, depth of seed placement for each species, size of area to be planted, and planned date of seeding.	PLANT SPECIES/CULTIVAR	PERCENT	RATE	DEPTH	ACRES	DATE

Direct Seeding:	AS PLANTED					
	PLANT SPECIES/CULTIVAR	PERCENT	RATE	DEPTH	ACRES	DATE
List plant species seeded, percent of each species in seed mixture, PLS seeding rate, depth of seed placement, size of area planted, and date of seeding.						

Cuttings and Pole Plantings:	PLANNED				AS PLANTED			
	PLANT SPECIES	DIAMETER	LENGTH	DEPTH	PLANT SPECIES	DIAMETER	LENGTH	DEPTH
List woody species planted, minimum stem diameter, average total length of cuttings or poles, and depth planted.								

Cuttings and Pole Plantings:	PLANNED				AS PLANTED			
	DATE	NO. ROWS	SPACING	OFFSET	DATE	NO. ROWS	SPACING	OFFSET
List date of planting, number of rows planted, spacing between rows; check box to indicate that cuttings have been staggered or offset with those in adjacent rows. Do not check box if cuttings are not offset.								
	NOTES:							

Cuttings and Pole Plantings:	PLANNED		AS PLANTED	
	NUMBER PLANTS/ACRES	TOTAL	NUMBER PLANTS/ACRES	TOTAL
Enter number of plants per acre and total number of trees or shrubs planted.				

Container and Bareroot Plantings:	PLANNED			AS PLANTED		
	SPECIES	SIZE	SPACING	SPECIES	SIZE	SPACING
List species planted, container size (i.e., 5-gallon), and spacing between plants. For bareroot stock, enter BR and caliper in SIZE column.						

Container and Bareroot Plantings:	PLANNED			AS PLANTED		
	DATE	NUMBER OF TREES/ACRE	TOTAL	DATE	NUMBER OF TREES/ACRE	TOTAL
List date of planting, number of trees per acre and total number of trees/shrubs planted.						
	NOTES:					

Fertilization:	PLANNED			APPLIED		
	FERTILIZER	RATE	DATE	FERTILIZER	RATE	DATE
List kind fertilizer(s) to be used (i.e., 16-20-0), application rate, and dates of application.						

Irrigation:	PLANNED		APPLIED	
	IRRIGATION TYPE	WATER SOURCE	IRRIGATION TYPE	WATER SOURCE
If treated area is irrigated, list type of irrigation to be used (sprinkler, surface, micro-irrigation, hand-watering, etc.) and source of irrigation water. <i>Complete Irrigation Water Management practice documentation worksheet when an irrigation system is installed (i.e., for irrigation other than hand or spot watering).</i>				
	NOTES:			

Weed Control	PLANNED			APPLIED		
List chemical(s) used for weed control following stand establishment. Enter rate of application and dates applied.	CHEMICAL	RATE	DATE	CHEMICAL	RATE	DATE
	NOTES:					

Other Requirements:	PLANNED	AS INSTALLED
List other details important to the establishment and survival of plantings.		

NOTES:

OPERATION AND MAINTENANCE

Periodic monitoring of this practice is essential to determine: 1) whether competing vegetation adequately controlled and if insects or disease are affecting plant survival; 2) if the planned facilitating practices are installed, maintained, and adequate; and, 3) if modifications to this practice are needed.

Land owner/operator assumes all responsibility for acquiring necessary permits and/or easements and for compliance with ordinances and laws pertaining to the installation of this practice.

Land owner/operator acknowledges responsibility for notifying all utilities affected by this project.

Land owner/operator has received a copy of practice specifications and related drawings/maps and that he/she understands the requirements for practice installation.

Practice specifications have been reviewed and practice application as planned above is *agreed to*:

Cooperator
Date
NRCS Planner

I certify that the above practice has been applied and meets NRCS Practice Standards and Specifications.

NRCS Planner
Date

Table 1 - Soil Rating Criteria for Hand Planting Suitability

FACTOR	WELL SUITED	MODERATELY-WELL SUITED	POORLY SUITED	NOT SUITED	FEATURE	IMPACT
Slope	<35%	35-80%	>80%	--	Slope	Reduced efficiency
Depth to Restriction - Cementation class: ≤ WC MC > SC	>0" >12" ----	----- 8-12" ----	----- <8" ----	----- -----" <12"	Restrictive Layer	Obstruction
Particle Size Separates: Layers ≥3" thick within 12" of the surface	----	>85% more coarse than vfs	----	----	Texture	Sloughing
Plasticity Index: Greatest value of any layer within 12" of the surface	<20	20-30	>30	----	Stickiness	Reduced efficiency
Rock fragments within 12" of the surface: Greatest value of any layer: ≥3" <3" ≥3" on the soil surface	<15% <35% <3%	15-35% 35-75% 3-15%	36-75% >75% 16-50%	>75% ----- >50%	Coarse Fragments	Obstruction
Water Depth: Year around	≥12"	<12"	----	-----	Wetness	Reduced efficiency
Ponding:				Year around	Wetness	Reduced efficiency

Table 2 - Soil Rating Criteria for Mechanical Planting Suitability

FACTOR	WELL SUITED	MODERATELY-WELL SUITED	POORLY SUITED	NOT SUITED	FEATURE	IMPACT
Slope:	<5%	5-15%	15-25%	>25%	Slope	Reduced efficiency
Depth to Restriction - Cementation class: ≤ MC SC, VS IND	>0" ---- ----	---- <12" ----	---- ---- ----	---- -----" <12"	Restrictive Layer	Obstruction
Particle Size Separates: Layers ≥3" thick within 12" of the surface	----	>85% more coarse than vfs	----	----	Texture	Sloughing
Plasticity Index: Greatest value of any layer within 12" of the surface	<20	20-30	>30	----	Stickiness	Reduced efficiency
Rock fragments within 12" of the surface: Greatest value of any layer: ≥3" <3" ≥3" on the soil surface	<5% <15% <0.1%	5-15% 15-35% 0.1-3%	16-35% 36-50% 3-15%	>35% >60% >15%	Coarse Fragments	Obstruction
Water Depth: Year around	≥12"	6-12"	<6"	-----	Wetness	Reduced efficiency
Ponding:				Year around	Wetness	Reduced efficiency

TABLE 3. Guide for Rating Soils According to Their Relative Suitability for Direct Seeding of Trees and Shrubs

SOIL PROPERTY	WELL SUITED	MODERATELY-WELL SUITED	POORLY SUITED
Moisture regime	Aquic, Xeric, Ustic, and Xeric and Ustic bordering on Aridic or Torric	Aridic and Torric bordering on Aquic, Xeric or Ustic.	Aridic and Torric.
Effective Moisture ¹	>10-inches	7 to 10-inches	<7-inches
Available Water Capacity	Surface 10-inches: >1.25-inches Soil profile: >4-inches	Surface 10 inches: 0.75 to 1.25-inches Soil profile: 2.5 to 4 inches	Surface 10 inches: <0.75- inches Soil profile: <2.5-inches
Texture Surface 7 inches	LVFS, COSL, SL, FSL, VFSL, L SIL, SCL, and CL SICL with <35% C	VFS, LFS, SC, SIC, C and CL and SICL with >35% C	LS, LCOS, FS, COS
Rock Fragments in Surface 7 inches	GR <35%; CB <15%; ST <3%. Total rock fragments <35%	GR <35%; CB 15 - 35%; ST 3 - 15. Total rock fragments <35%	GR >35%; CB >35%; ST >15%. Total rock fragments >35%
Depth to Abrupt A-B Texture Boundary ²	>10-inches	>10-inches	<10-inches
Depth to Bedrock or Hardpan	>20-inches	10 to 20-inches	<10-inches (Not Suited)
Electrical Conductivity - (Saturation Extract @ 25 degrees C)	<2-mmhos/cm in upper 20-inches	2 to 4-mmhos/cm in upper 10-inches and 4 to 8-mmhos/cm in 10 to 20- inches	>4-mmhos/cm in upper 10-inches and/or >8-mmhos/cm in 10 to 20-inches
Sodium Adsorption-Ratio	<8 in upper 20-inches	8 - 13 in upper 10-inches and <20 in 10 to 20-inches	>13 in upper 10 inches and/or >20 in 10 - 20 inches
K × Percent Slope (%) ³	<4 ⁴ ; <6 ⁵	4-6 ⁴ ; 6-8 ⁵	>6 ⁴ ; >8 ⁵
I × C ⁶	<60	<60	>60
Soil Surface Morphological Types ⁷	Type I & II 60%; Type IV <53%; or with mollic epipedon ^{8/}	Types I & II 20-60%; Type IV <10% ⁸	Type III <60%; Type IV >10% ⁸

¹ Moisture from precipitation, run-on, and groundwater budgeted to actual evapotranspiration.

² Rate Vertisols and Vertic subgroups as poor.

³ Sheet and rill erosion hazard (bare soil).

⁴ For Ustic bordering on Aridic or Torric, and Aridic or Torric bordering on Xeric moisture regimes

⁵ For Xeric, Xeric bordering on Aridic or Torric, and Aridic or Torric bordering on Xeric moisture regimes

⁶ Wind erosion hazard (bare soil)

⁷ See: (1) Final Report. Properties, Occurrence and Management of Soils with Vesicular Surface Horizons, 1977. Contract No. 52500-CT 5(N). USDI-BLM and UNR-Ag Exp. Sta. Eckert, Peterson, Wood, and Blackburn; and (2) Final Report. properties, Occurrence and Management of Soils with Vesicular Surface Horizons- - Effects of Trampling on Seedling Emergence. 1979. Contract No. YA 512-CT 7-14. SDI BLM and UNR-Ag. Exp. Sta. Stephens, Eckert, and Peterson.

⁸ Soils without crusting morphology are to be included in Types I & II for rating.