



CONSERVATION ENHANCEMENT ACTIVITY

E666115Z1

CONSERVATION STEWARDSHIP PROGRAM

Converting loblolly and slash pine plantations to longleaf pine to retain soil moisture

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest

RESOURCE CONCERN ADDRESSED: Insufficient Water

PRACTICE LIFE SPAN: 10 YEARS

Enhancement Description

Longleaf pine has greater wildlife habitat value, is more resistant to insects and disease, and is better able to withstand hurricane-force winds than other southern pines, particularly loblolly and slash pines. Because of rapid early growth, loblolly and slash pines have often been planted on soils and sites better suited to longleaf. Loblolly has a higher rate of evapotranspiration than longleaf and can deplete soil moisture. Loblolly and slash pine plantations can be converted to longleaf by clearcutting and planting seedlings but mature tree cover is then lost for 20 or more years. This enhancement will gradually convert an existing loblolly or slash pine plantation to longleaf while at the same time maintaining mature tree cover with the associated benefits of wildlife habitat and visual quality, and moderating effects on soil temperature, soil moisture and understory plants.

Criteria

- States will apply general criteria from the NRCS National Conservation Practice Standard (CPS) 666 as listed below, and additional criteria as required by the NRCS State Office.
- The enhancement will be applied to sites presently occupied by loblolly or slash pine but well-suited to longleaf pine. Loblolly/slash pine trees will be at least 15 years old but not more than 50 years old.



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- Locate any existing openings in the loblolly/slash plantation and enlarge them to an average of $\frac{1}{2}$ acre (166 feet in diameter). Create additional $\frac{1}{2}$ acre openings, if needed, until about 20% of the plantation is in $\frac{1}{2}$ acre openings.
- Thin the remaining portions of the plantation, removing about 40% of the trees per acre or leaving a residual basal area of 60 sq. ft., whichever results in the greatest residual basal area. Reserve the most vigorous dominant trees with the best crown ratios.
- In the openings, apply appropriate site preparation and plant containerized longleaf pine seedlings as early in the planting season as possible at a rate of approximately 600/acre (6 x 12 or 7 x 10).
- Apply prescribed fire at 2-year intervals to control competing vegetation, especially loblolly/slash pine seedlings.
- Repeat the steps above at 10 year intervals, enlarging existing openings or creating new $\frac{1}{2}$ acre openings across another 20% of the plantation and thinning the remaining timber as described above. Plant seedlings and burn as above.
- An uneven-aged longleaf pine stand will be the final result when the last loblolly/slash trees are cut, with a 40-year difference between the youngest and oldest longleaf trees.
- It is assumed that each timber harvest will be commercial, so no financial assistance is offered for the cutting and removal of timber.
- Refer to WIN-PST criteria in NRCS Conservation Practice Standard (CPS) Code 595, Integrated Pest Management, and comply with applicable State and local laws if an herbicide will be used.
- Time tree felling to avoid buildup of insect or disease populations.
- Implement forest stand improvement activities in ways that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.



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- Protect site resources by selecting the method, felling direction and timing of tree felling, and equipment operation. For temporary access use NRCS CPS Code 655, Forest Trails and Landings, to protect soil and site resources from vehicle impacts.
- Use NRCS CPS Code 560, Access Road, for more heavily used roads associated with forest stand improvement activities.
- Where slash and debris will be generated, use NRCS CPS Code 384, Woody Residue Treatment, to appropriately treat slash and debris, as necessary, to assure that it will not present an unacceptable fire, safety, environmental, or pest hazard. Remaining woody material will be placed so that it does not interfere with the intended purpose or other management activities.
- Do not burn vegetative residues except where fire hazard or threats from diseases and insects are of concern or when other management objectives are best achieved through burning. When slash and other debris will be burned onsite use NRCS CPS Code 338, Prescribed Burning.

Documentation Requirements

- Plans and specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, implementation requirements, technical notes and narrative statements in the conservation plan, or other acceptable documentation.
- Additional documentation as required by NRCS State Office.