United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY E666118Z

CONSERVATION STEWARDSHIP PROGRAM

Enhance development of the forest understory to capture nutrients in surface water

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest

RESOURCE CONCERN ADDRESSED: Water Quality Degradation

PRACTICE LIFE SPAN: 10 YEARS

Enhancement Description:

Forest stand improvement to manage the structure and composition of overstory and understory vegetation so that additional moisture is captured and filtered through the vegetation and soil, thus minimizing nutrient loss through ground water. Managing the understory vegetation will increase available water to plants, minimize run-off and erosion, and improve water quality.

This enhancement provides for management of the understory vegetation in a forested area, using mechanical, chemical or manual methods to improve the plant species mix and the health of the residual vegetation. These practices encourage development of a forested ecosystem that efficiently utilizes available water and captures nutrients.

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 which have an uncharacteristically dense understory of shrubs and small trees that limit development of ground cover.
- Develop or update a forest management plan in consultation with NRCS personnel and a professional forester to direct the management of the property.
- Describe the current and desired future condition of each stand that will be treated. Include the species, cover type, and size-class distribution. Stocking will be described in terms of crop

trees per acre, basal area per acre, trees per acre, between-tree spacing, or by any other appropriate and professionally accepted density or stocking protocol.

- Identify and retain preferred tree and understory species to achieve all planned purposes and landowner objectives.

- Use available guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained. Schedule treatments to avoid overstocked conditions using approved silvicultural/stocking guides.

- Vegetation may be treated by chemical methods such as spraying or single stem treatments, or mechanical methods like a heavy duty brush cutter or similar equipment. Refer to criteria in NRCS Conservation Practice Standard (CPS) Integrated Pest Management (Code 595).

- 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. Protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation. For temporary access use NRCS CPS Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.

- Where slash and debris will be generated, use NRCS CPS Woody Residue Treatment (Code 384) 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 Prescribed Burning (Code 338).

- The acres planned must have an “acceptable growing stock” level of at least the B line on an appropriate stocking chart.

- *This enhancement requires implementation of the following activities (a through d) in the area where the enhancement applies.*

    a. Excessive volatile live vegetation and woody debris –When volatile, live grasses and shrubs and/or woody debris are present, a reduction of these fuels may be accomplished by using heavy duty brush cutters or similar equipment.

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b. Closed canopy – When trees form a continuous closed canopy, thin the stand to allow for heat escape and to improve the health of residual trees and understory vegetation. Open the canopy by cutting or killing selected trees to allow sunlight to reach the forest floor. Reduce slash from the cut trees by cutting off the limbs as needed. An alternative is to use single tree injections to reduce the density of poor quality trees and open up the canopy.
c. Ladder fuels – When ladder fuels form connections between the ground and the higher levels of the canopy, thus increasing the risk of fire spreading into tree crowns, break the continuity of fuel between the ground and the upper canopy. Complete removal is not required as long as the continuity is disrupted.
d. Undesirable Vegetation – Use control measures to reduce or eliminate undesirable vegetation and favor desirable vegetation for the site.

- Minimize damage to residual trees during the treatment process.
- If machinery is being used, operate under dry conditions when the machinery will not cause rutting and/or soil compaction.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.

Documentation Requirements:

- Site suitability (from WebSoil Survey) and acceptable growing stock left on the site (from a field inventory).
- Map delineating the treated areas, dates completed, and size of areas treated.
- The method(s) utilized.
- Evidence to support the treatment activities were completed, including representative photos, receipt from contractor etc. Location of representative photos must be indicated on the map delineating treated areas.
- Additional documentation as required by NRCS State Office.