



CONSERVATION ENHANCEMENT ACTIVITY

E666E

**CONSERVATION
STEWARDSHIP
PROGRAM**

Reduce height of the forest understory to limit wildfire risk

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Plants

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description:

Forest stand improvement that manages forest structure to reduce the risk of wildfire, and creates conditions that facilitate prescribed burning. The fire risk reduction is accomplished by reducing the height of the woody understory and midstory, creating space between the ground cover and the tree canopy. 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, and reduce the risk of wildfire. In appropriate stands, the treatment creates conditions that favor prescribed burning. Forest stand improvement (FSI) activities are used to remove trees of undesirable species, form, quality, condition, or growth rate. The quantity and quality of forest for wildlife and/or timber production will be increased by manipulating stand density and structure. These treatments can also reduce wildfire hazards, improve forest health, restore natural plant communities, and achieve or maintain a desired native understory plant community for soil health, wildlife, grazing, and/or browsing.

Criteria:

States will apply general criteria from the NRCS National Conservation Practice Standard Forest Stand Improvement (Code 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.



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- 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 Integrated Pest Management (Code 595), Brush Management (Code 314), or Herbaceous Weed Control (315).
- 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 Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.
- Where slash and debris will be generated, use NRCS Conservation Practice Standard 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 Conservation Practice Standard 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.



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- 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.
 - 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.

North Dakota Sideboards:

Must develop Forest Stewardship Plan with North Dakota Forest Service.

Limited to Pine Forest Area of Western North Dakota.



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Documentation and Implementation Requirements:

Participant will:

- Prior to implementation, work with a professional forester to develop or update a forestry management plan for the property.
- Prior to implementation, work with a professional forester to include **current** species, cover type, and size class distribution for stands to be treated in the plan.
- Prior to implementation, work with a professional forester to include **current** 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 for stands to be treated in the plan.
- Prior to implementation, work with a professional forester to include **desired** species, cover type, and size class distribution for stands to be treated in the plan.
- Prior to implementation, work with a professional forester to include **desired** 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 for stands to be treated in the plan.
- Prior to implementation, work with a professional forester to include in the updated or developed plan to identify and retain preferred tree and understory species to achieve all planned purposes and landowner objectives to get from **current to desired** conditions for the stands to be treated. This would be part the silviculture prescription.
- Prior to implementation, work with a professional forester using 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 to get from **current to desired** conditions for the stands to be treated. This would be part the silviculture prescription.
- Prior to implementation, work with professional forester and NRCS to delineate on a map the treatment areas and dates.
- Prior to implementation, discuss with professional forester or NRCS if NRCS Conservation Practice Standard Forest Trails and Landings (Code 655) will be necessary for access or to reduce erosion from vehicles/equipment.
- Prior to implementation, discuss with professional forester and NRCS if NRCS Conservation Practice Standard Woody Residue Treatment (Code 384) to appropriately treat slash and debris.
- Prior to implementation, discuss with professional forester and NRCS if NRCS Conservation Practice Standard Prescribed Burning (Code 338) to appropriately treat slash and debris.
- During implementation, notify NRCS of any planned changes to verify they meet the enhancement criteria.



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- During implementation, keep evidence to support the treatment activities were completed using representative photos. Location of representative photos must be indicated on the map delineating treated areas.
- After implementation, notify NRCS that treatment has been completed and submit pictures and map to support this.

NRCS will:

- Prior to implementation, provide and discuss with participant, as needed, NRCS Conservation Practice Standards Forest Trails and Landings (Code 655), Woody Residue Treatment (Code 384), and Prescribed Burning (Code 338).
- Prior to Implementation, verify that participant plan has been developed or updated by a professional forester.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester to include **current** species, cover type, and size class distribution for stands to be treated.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester to include **current** 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 for stands to be treated.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester and includes **desired** 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 for stands to be treated.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester and includes **desired** 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 for stands to be treated.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester and identifies and retains preferred tree and understory species to achieve all planned purposes and landowner objectives to get from **current to desired** conditions for the stands to be treated. This would be part the silviculture prescription.
- Prior to implementation, verify that participant plan has been developed or updated by a professional forester and uses 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 to get from **current to desired** conditions for the stands to be treated. This would be part the silviculture prescription.



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- Prior to implementation, assist the landowner, as needed, to delineate on a map the treatment areas and dates of treatment.
- During Implementation, verify any planned changes in plan will meet the enhancement criteria.
- After Implementation, verify that the treatment has been completed and meets enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date