



NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

WOODY RESIDUE TREATMENT

CODE 384 (ACRE)

DEFINITION

The treatment of residual woody material that is created due to management activities or natural disturbances.

PURPOSE

- Reduce hazardous fuels.
- Reduce the risk of harmful insects and disease.
- Protect/maintain air quality by reducing the risk of wildfire.
- To improve access for management purposes.
- Improve access to forage for livestock and wildlife.
- Develop renewable energy systems.
- Enhance aesthetics.
- Reduce the risk of harm to humans.
- Improve the soil organic matter.
- Improve site for natural regeneration.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all lands, except active cropland, where woody residue requires treatment. This standard is not intended for sites where biomass will be harvested as a product.

CRITERIA

General Criteria Applicable to All Purposes

- Slash treatment and the condition and extent of residual slash shall be planned and the method selected based on the intended purpose(s) of the treatment.
- Slash treatment methods (i.e., burning, chipping, lop and scatter, removal, crushing) will achieve landowner objectives while adequately protecting land and water resources.
- Wisconsin Forestry Best Management Practices for Water Quality will be followed for all planned treatments.
- Care shall be taken to minimize injury to or function of the residual plant communities.
- Timing of treatment shall coincide with intended purpose(s) and minimize impact on other resources.

- Slash and other debris resulting from forest management operations shall be removed from stream courses, lakes, and ponds, neighboring lands, right-of-way clearings, roads and landings. Do not pile slash or move slash into riparian areas, floodplains, wetlands or vernal pools.
- Any burning activities shall comply with Wisconsin NRCS Conservation Practice Standard (WI NRCS CPS), Prescribed Burning (Code 338).
- Slash and debris left on the site after treatment will not present an unacceptable fire, safety, environmental, or pest hazard. Such remaining material will not interfere with the intended purpose of the treatment or other management activities.
- Retain slash and debris on sites that may be inhabited by threatened, endangered or special concern species if beneficial to specific species microhabitat requirements.

Additional Criteria Applicable to Reduce Hazardous Fuels

- Reduce height of slash to a maximum of 2.0 feet above the soil surface where wildfire is a concern and where the potential for damage by fire is moderate or high. Slash materials 3 inches in diameter and greater will be addressed.
- See WI NRCS CPS, Tree/Shrub Pruning (Code 660), to address reduction of ladder fuels in conjunction with this practice.

Additional Criteria to Reduce the Risk of Harmful Insects and Disease

- Degree, intensity and timing of slash treatment shall take full advantage of insect and disease characteristics and life cycles to minimize the impact of disease or insects on the forest vegetation.
- Pine Engraver - During harvesting and thinning operations in pine stands, scatter slash as much as possible to aid drying and breakdown of the material. Avoid piling fresh slash next to standing trees.
- Conifer Bark Beetles – During harvesting and thinning operations, remove potential bark beetle breeding material, including logs and tops down to 2 inches in diameter. Scatter remaining slash as much as possible to aid drying and breakdown of material. Material can also be scattered into openings to aid in drying.
- Treat slash in forests containing Emerald Ash Borer infected trees to halt the spread of the insect. Follow “Emerald Ash Borer and Forest Management” guidelines developed by Wisconsin Department of Natural Resources Division of Forestry.
- Utilize slash treatment as much as possible when making partial cuts in Black Cherry stands to address Peach Bark Beetle.
- Comply with WI NRCS CPS, Integrated Pest Management (Code 595), when pesticide applications are planned and applied.

Additional Criteria to Protect/Maintain Air Quality by Reducing the Risk of Wildfire

- Activities will be consistent with established regulations and guidelines for PM10 and PM 2.5 emissions, ozone precursors (NOx and VOCs), as well as smoke and dust, and state and local permit requirements.
- When feasible, use chipping, shredding, bio-fuel composting, or other technique in lieu of burning.
- Remove slash created by thinning and/or pruning to reduce available fuel.

Additional Criteria to Improve Access to Forage for Livestock and Wildlife

- Slash shall be piled or removed sufficiently to allow access to forage by the site's livestock and to maximize forage growth as part of an agro-forestry system.

Additional Criteria to Develop Renewable Energy Systems

- Removal of woody material shall not be detrimental to the site and will adequately protect soil and water resources. Adequate woody material will be left to maintain or improve nutrient and organic matter cycling.

Additional Criteria to Enhance Aesthetics

- Treat slash within 150 feet of a public road, trail or path and neighboring property boundaries.
- Slash that is scattered or piled and left on the site will be further treated to be no more than 18 inches above the soil surface. Slash that is piled and left on the site will be chipped and evenly distributed not to exceed a depth of 3 inches.

Additional Criteria to Reduce the Risk of Harm to Humans and Livestock

- Slash that is scattered or piled and left on the site will be further treated to meet client objectives and any state or local requirements for safe use of the area.
- Slash from forest management activities will be removed from right-of-way and within a strip 10 feet in width measured from the edge of clearings for utilities such as telephone lines, power lines, pipelines and other facilities.
- The tops of felled trees shall not be left hanging in standing trees. All trees cut shall be completely felled and not left leaning
- Slash from construction site clearings shall be treated concurrently with the construction operations.

Additional Criteria to Improve Soil Organic Matter

- Slash will be treated to create as much contact with the soil surface as practical to accelerate decomposition.
- Retain existing [coarse woody debris](#) and do not remove stumps or underground material.
- Retain slash less than 4 inch diameter in place.
- Minimize topsoil displacement and mixing into piles or windrows when machine piling slash and debris.

Additional Criteria to Improve the Site for Natural or Artificial Regeneration

- Slash will be treated to complement treatments specified in WI NRCS CPS, Tree/Shrub Site Preparation (Code 490).
- Retain slash material in areas susceptible to heavy browse for use as protection of seedlings.

CONSIDERATIONS

Additional recommendations relating to design that may enhance the use of, or avoid problems with, this practice but are not required to ensure its basic conservation functions are as follows:

- When determining method and timing of slash treatment consider air quality regulations, burning requirements, available resources, ability to use woody biomass and regeneration needs.
- Consider wildlife needs when performing and timing treatment.
- Consider the beneficial and other effects on cultural resources, and threatened and endangered species, natural areas, and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes and narrative statements in the conservation plan, or other acceptable documentation.

Plan documentation shall include:

- Plan/Site map with treatment area identified.
- Detailed guidance regarding timing, selected treatment(s) and specific results expected.
- Identify specific criteria for the selected treatment (residual height, % residual contact with soil surface, depth of chipped material, location & dimensions for slash piles, etc.)
- Identify targeted pest, disease or wildfire hazard as applicable.

OPERATION AND MAINTENANCE

Monitor populations and the potential of damage to site resources by harmful pests and take controlling actions as necessary. Comply with WI NRCS CPS, Pest Management (Code 595).

FEDERAL, TRIBAL, STATE, AND LOCAL LAWS

Users of this standard should be aware of potentially applicable federal, tribal, state and local laws, rules, regulations or permit requirements governing woody residue treatment. This standard does not contain the text of federal, tribal, state, or local laws.

REFERENCES

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Brown, James K., Reinhardt, Elizabeth D., Kramer, Kylie A., 2003, Course Woody Debris: Managing Benefits and Fire Hazard in the Recovering Forest. General Technical Report RMRS-GTR-105.

Chequamegon-Nicolet National Forests-2004 Land and Resource Management Plan, Chapter 2 Standards and Guidelines.

Craighead, F. C., 1949 Insect Enemies of Eastern Forests, United States Department of Agriculture Miscellaneous Publication No. 657.

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Graham, Samuel Alexander, 1939 Principles of Forest Entomology, McGraw-Hill, Book Company, Inc.

Guidelines. PUB-FR-435-2009. WI DNR Division of Forestry and Wisconsin Council on Forestry; Madison, WI. 51 pp.

Herrick, S.K., J.A. Kovach, E.A. Padley, C.R. Wagner, and D.E. Zastrow. 2009. Wisconsin's Forestland Woody Biomass Harvesting.

Heyd, Robert L., Red Pine Insect and Disease Problems: A Summary, Michigan State University Extension.

Silviculture and Forest Aesthetics Handbook 2431.5, Wisconsin Department of Natural Resources – Division of Forestry.

USDA, NRCS Wisconsin Field Office Technical Guide (FOTG), Section IV, Practice Standards and Specifications.

Wisconsin Fire Prone Areas, WDNR-Division of Forestry, 2006.

Wisconsin Forest Management Guidelines, PUBFR226 2003. Wisconsin Department of Natural Resources (DNR), Division of Forestry, Madison, WI.

Wisconsin Slash Disposal Law S.26.12

DEFINITIONS

Coarse woody debris (CWD) or **coarse woody habitat (CWH)** refers to fallen dead trees and the remains of large branches on the ground in forests and in rivers or wetlands. A dead standing tree is known as a snag and provides many of the same functions as coarse woody debris. The minimum size required for woody debris to be defined as “coarse” is 3 inches in diameter.

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