



CONSERVATION ENHANCEMENT ACTIVITY

E666G

CONSERVATION STEWARDSHIP PROGRAM

Reduce forest density and manage understory along roads to limit wildfire risk and improve habitat

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Plant, Animal

ENHANCEMENT LIFE SPAN: 10 YEARS

Enhancement Description:

Opening the tree canopy along roads ("daylighting") and providing space between ground vegetation and tree crowns minimizes the spread of wildfires that often start along roads and improves wildlife habitat and food sources for many species. Some trees near a forest road are removed through harvesting, cutting, mulching, or another option available at the site, with the objective of creating a partially open forest canopy bordering the road. A semi-open canopy allows more sunlight to reach the forest floor to promote herbaceous understory plants and reduces maintenance needs by allowing moisture to evaporate from roads. The reduced canopy and herbaceous understory limit woodland fuel buildup and reduce fire intensity.

Criteria:

States will apply general criteria from the NRCS National Conservation Practice Standard (CPS) Forest Stand Improvement (Code 666) as listed below, and additional criteria as required by the NRCS State Office.

- Apply the enhancement to sites where vegetation on roadsides presents a fire risk, is inadequate for wildlife habitat, or is detrimental to road maintenance. Treat a strip of forest on both sides of the road, as needed and if feasible. Implement the enhancement for a distance of at least 35 feet into the forest stand from the edge of the road, and extend the distance as needed up to 100 feet based on slope, aspect, soils, fuel type, etc. Use criteria in NRCS CPS Fuel Break (Code 383).
- 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



United States Department of Agriculture

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E666G

CONSERVATION STEWARDSHIP PROGRAM

E666G Reduce forest density and manage understory along roads to limit wildfire risk and improve habitat	May 2020	Page 1
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CONSERVATION STEWARDSHIP PROGRAM

Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.

- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.
- Wetland compliance and highly erodible land regulations must be followed.
- Trees removed as part of the treatment process that have marketable quality may be sold. Retain desirable species with large healthy crowns, and trees and shrubs that provide a diversity of wildlife food sources. Remove trees that are:
 - At high risk of mortality or failure (unless retained as a wildlife tree at a safe distance from the road)
 - Of low crown vigor
 - Of poor stem form and quality
 - Less-desirable species.
- Trees that cannot be sold may be removed by cutting, mulching, firewood distribution, or other means to reduce the canopy and allow sunlight to reach the forest floor. Trees further away from the road may be killed and left standing as snags, if they will not fall onto the road.
- Minimize damage to residual trees during the daylighting process.
- Refer to criteria in NRCS Conservation Practice Standard Integrated Pest Management (Code 595) Brush Management (Code 314), or Herbaceous Weed Control (Code 315) to assist with site-specific strategies for pest prevention, pest avoidance, pest monitoring, and pest suppression. Time tree felling to avoid buildup of insect or disease populations.
- 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).



CONSERVATION STEWARDSHIP PROGRAM

- The understory vegetation can be maintained by prescribed burning where appropriate. Use NRCS CPS Prescribed Burning (Code 338). If prescribed burning is not an option, alternative methods may be used to manage the understory vegetation, such as mowing or fall disking.
- The daylighted area may be treated with herbicides to control noxious and invasive plants and undesirable woody vegetation to promote herbaceous plants. 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 (Code 315)
- No daylighting activities should take place during the nesting season for ground nesting birds.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements:

Participant will:

- Y Prior to implementation, review NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) which contains information needed to meet criteria for this enhancement.
- Y Prior to implementation, develop an understanding of management practices that reduce tree density, and the types of understory vegetation that will be encouraged by these practices. (Request NRCS technical assistance, as needed.)
- Y Prior to implementation, recognize that other NRCS Conservation Practice Standards may be needed to apply this enhancement. These may include:
 - o Brush Management (Code 314)
 - o Herbaceous Weed Control (Code 315)
 - o Integrated Pest Management (Code 595)
 - o Woody Residue Treatment (Code 384)
 - o Prescribed Burning (Code 338)
- Y Prior to implementation, acquire all necessary approvals and permits (i.e. local, state, or federal, as applicable).
- Y Prior to implementation, work with a professional forester who will mark trees and groups of trees to remove and will develop a strategy for controlling undesirable understory vegetation.
- Y Prior to implementation, if prescribed burning will be used, work with NRCS and a professional forester or biologist to obtain a prescribed burn plan. If chemical methods will be used, obtain recommendations from an approved source.
- Y Prior to implementation, take pre-treatment photos of the site to show representative conditions.
- Y During implementation, follow criteria in NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) and specifications provided by NRCS, to ensure that:
 - o Overstory trees are removed or retained to achieve all planned purposes and landowner objectives.
 - o The desired spacing, density, size-class distribution, number of trees, and amount of understory is achieved.
 - o The operation avoids or minimizes damage to desirable vegetation.



CONSERVATION STEWARDSHIP PROGRAM

- Y During implementation, follow state-approved Forestry Best Management Practices (BMPs) to protect streams, water quality, and minimize soil loss.
- Y During implementation, treat a strip of forest on both sides of the road, if needed and feasible. Implement the enhancement for a distance of at least 35 feet into the forest stand from the edge of the road, and extend the distance as needed up to 100 feet from the road based on slope, aspect, soils, fuel type, etc.
- Y During implementation, focus on retaining healthy trees and when available retain trees that provide wildlife benefits such as oaks, hickories, etc.
- Y During implementation, remove trees that are at risk of mortality, trees with low crown vigor, trees with poor form and quality, and less-desirable species.
- Y During implementation, control undesirable competing vegetation using appropriate methods for the tree species and site conditions.
- Y During implementation, limit the size of debris piles to minimize wildfire hazards.
- Y During implementation, as needed, evaluate and review with NRCS any planned changes to verify they meet the enhancement criteria.
- Y After implementation, take digital photos showing representative post-treatment conditions.
- Y After implementation, notify NRCS that the work has been completed and make treatment documentation available for NRCS review and certification.

NRCS will:

- Y Prior to implementation, provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement.
 - o Fuel Break (Code 383)
 - o Brush Management (Code 314)
 - o Herbaceous Weed Control (Code 315)
 - o Forest Stand Improvement (Code 666)
 - o Woody Residue Treatment (Code 384)
 - o Forest Trails and Landings (Code 655)
 - o Integrated Pest Management (Code 595)
 - o Prescribed Burning (Code 338)

- Y As needed, prior to implementation, NRCS will provide technical assistance in:



CONSERVATION STEWARDSHIP PROGRAM

- Interpreting enhancement criteria relative to tree species to retain and remove or kill, and strategy for controlling undesirable understory vegetation.
- Preparing specifications for applying this enhancement for each site using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
- Υ Prior to implementation, ensure that the participant has an appropriate prescribed burn plan, herbicide recommendations from an approved source and an understanding of how these practices will be applied on the property.
- Υ Prior to implementation, provide and explain the state’s Forestry BMP guidelines.
- Υ During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- Υ During implementation, provide technical assistance if requested by the participant.
- Υ After implementation, review documentation and photographs to verify the enhancement was completed according to specifications in this enhancement and NRCS Conservation Practice Standard Forest Stand Improvement (Code 666).

NRCS Documentation Review:

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

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Sign



**Oregon SUPPLEMENT TO CONSERVATION
ENHANCEMENT ACTIVITY E666G**

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Additional Criteria for Oregon

In addition to the criteria specified in the National job sheet E666G the following additional criteria apply in Oregon:

- This enhancement should be applied on dry to moderately warm, moderately moist (habitat types where the natural fire return interval and severity class has shifted primarily due to fire exclusion. As a result, current fuel loads increase the probability of catastrophic fires.
- Ladder fuels currently have a separation distance of 3X (three times the height of the contributing ladder fuel) from base of the overstory crown layer.
- Ladder fuels will be treated to reduce the separation distance to less than 3X.
- When this enhancement is applied along jurisdictional roads (ie federal, state or county roads), the edge of the road is the furthest edge of the legal right of way.
- The requirement to implement tree removal for 35 feet "or more" is clarified to be "at least 35 but no greater than 100 feet" into the forest stand from the edge of the road. Consider a 1 to 2X the height of the co-dominate tree.
- Enhancement activities must be completed outside of the nesting season (April 1 –August 1).
- For all slash burning activities refer to CPS 384 and CPS 338.



CONSERVATION STEWARDSHIP PROGRAM

- For jurisdictional roads with high traffic volumes, notify the jurisdictional entity of the intent to increase food sources (which will potentially increase vehicle/animal collisions) before selecting this enhancement.

Additional Documentation Requirements for Oregon

In addition to the documentation requirements specified in the National job sheet E666G the following additional documentation requirements apply in Oregon:

- Forest Management or Stewardship Plan, written by an NRCS or partner forester, describing the existing and planned ecological perimeter for the site as well as documenting the reduction in trees along the road (following criteria in Practice 383), the desirable trees that will be left post treatment, and to ensure snags and downed woody material is left in place as appropriate for the site. The Forest Management or Stewardship Plan should detail the treatment activities, how it is going to improve and diversify the understory composition and what is expected after the treatment has been performed.
- 645 Upland Wildlife Habitat Management Job Sheet specifying what species the enhancement is targeting and how the planned activities will provide habitat for the species.

Design Approvals & Acknowledgements:

Design Approval	Date	Job Approval Authority
Designed by:		
Approved by:		

Client's Acknowledgement Statement:

The client acknowledges:

- I have received a copy of the specification and understand the contents and requirements.
- It is my responsibility to obtain all necessary permits and/or rights and to comply with all ordinances and laws pertaining to the application of this practice.
- I will not begin installation of this practice until I have received appropriate approval to do so. I understand NRCS also has Federal and state laws to comply with that may take some time to address (e.g. cultural resources).

Client's	Date
Signature	

Certification Documentation:

	Field Evaluation: Post-treatment inventory, measurements, notes, as-built, and supporting documentation (document completion in conservation plan), as required.
	Map(s): Including field numbers, fields treated, and units treated (may document on conservation plan map), as required.
	Photos or other supporting documentation (e.g., seed tags, soil tests, receipts, invoices, spray records, fertilizer records, etc.)
Brief Description of Work Accomplished (types of equipment used, date of application, extents and quantities installed, etc.)	

Certification Statement:

The employee certifies the implementation of this conservation practice:

- Meets the purpose, general criteria, and any required additional criteria as documented in the conservation practice standard and/or enhancement sheet.
- Meets the specifications contained herein and is complete.
- Conforms to my existing Job Approval Authority controlling factors and levels.

Name	Date	Job Approval Authority

Field Level Certification – For multiple applications of this design.				
Land Unit/ Contract Item Number	Date	Unit(s)	Amount Installed	Certifier