



**CONSERVATION ENHANCEMENT ACTIVITY
E666F**

**CONSERVATION
STEWARDSHIP
PROGRAM**

**Reduce forest stand density to create
open stand structure**

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Plant, Animal

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description:

Reducing forest stand density creates open forest conditions with a low basal area which promotes the health and vigor of the residual trees. The open stand structure allows a significant amount of sunlight to reach the forest floor and stimulates the growth of understory vegetation. Understory vegetation management, along with the wide spacing between trees or clumps of trees, provides visual appeal, lowers the risk of wildfire, and provides food, cover, and shelter for many at-risk and listed wildlife species. The enhancement creates conditions that facilitate a follow-up treatment with prescribed burning.

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.

- Develop or update a forest management plan in consultation with NRCS personnel and a professional forester to direct the management of the property.
- Thin the stand to a target basal area of 50 to 60 square feet/acre. This creates an open stand and stimulates the growth of herbaceous vegetation on the forest floor. Preferentially remove unhealthy individual trees, undesirable species, and trees with visible defects including forked or broken tops, thin crowns or damaged trunks. Retain desired species and individual trees with large healthy crowns and undamaged trunks.



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- The stand may have been previously thinned or may be in need of thinning. Merchantable trees may be sold. Reduce stand density sufficiently to get light to the forest floor. The overstory thinning must be completed prior to the understory treatment.
- Trees that cannot be sold may be cut or killed to reduce the canopy and allow sunlight to reach the forest floor. Use NRCS Conservation Practice Standard Woody Residue Treatment (Code 384) as needed to treat felled wood.
- Minimize damage to residual trees during the thinning process.
- Time tree felling to avoid buildup of insect or disease populations.
- Understory vegetation in fire-adapted forest types will receive the greatest benefit from treatment with prescribed burning. Use NRCS Conservation Practice Standard Prescribed Burning (Code 338), and follow all applicable federal, state and local laws. If prescribed burning is not feasible or not appropriate for the site, understory vegetation may be treated with mechanical methods like mulching, mowing, chainsaws, or small dozers.
- Control measures should be used on undesirable competing vegetation, to favor the development of desirable vegetative communities on the site. 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).
- 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).



- Where machinery is being used, operate under dry conditions when the machinery will not cause rutting and/or soil compaction.
- Do not conduct activities during the nesting season for ground nesting birds.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.

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Documentation and Implementation Requirements:

Participant will:

- Prior to implementation, use the NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) conservation practice standard or appropriate state approved NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) Job Sheet to meet the criteria of this enhancement.
- Prior to implementation, provide to NRCS a current or updated Forest Management Plan that includes activities addressing this enhancement.
- Prior to implementation, set guidelines to maintain the stand in a fully stocked condition along the B line on the site appropriate stocking chart. Reduce the overstory tree density to create open stand of trees allowing sunlight to the forest floor.
- Prior to implementation, develop a strategy to manage the understory vegetation to favor wildlife food producing plants using prescribed burning, chemical methods or mechanical methods. (If prescribed burning is used - have a prescribed burn plan in place, for chemical treatments – have recommendations from an approved source, and for mechanical methods follow state BMP guidelines).
- During implementation, thin the stand to the B line on the stocking chart to open the canopy while maintaining a fully stocked stand of trees. If thinning is not an option, reduce the canopy by chemically treating selected trees to open the canopy while maintaining a fully stocked stand of trees.
- During implementation, avoid making large areas of woody debris.
- During implementation, strive to minimize volatile vegetation and reduce ladder fuels if present.
- During implementation, control undesirable vegetation using prescribed burning, chemical treatments or mechanical methods. Follow the appropriate guidelines (prescribed burn plan, chemical recommendations or state BMP guidelines).
- After implementation, the participant will provide the date completed, acres treated, methods used and a map delineating treated acres.

NRCS will:

- Prior to Implementation, assist with interpretation and updates to the Forest Management Plan and activities recommended in the acres targeted for management.



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- Prior to implementation, provide and explain guidance in the NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) and how it relates to the use of this enhancement.
- Prior to implementation, provide assistance with the development of appropriate state approved NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) Job Sheets and discuss the details with the participant.
- Prior to implementation, discuss the need for managing the understory vegetation along with the overstory. The understory should be managed using prescribed burning, chemical or mechanical treatments. Be sure that there is a prescribed burn plan, chemical recommendations or mechanical treatments following state BMP guidelines in implementing this enhancement.
- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards (CPSs) as they relate to implementing this enhancement.
 - Brush Management (Code 314)
 - Forest Stand Improvement (Code 666)
 - Forest Trails and Landings (Code 655)
 - Herbaceous Weed Control (Code 315)
 - Integrated Pest Management (Code 595)
 - Woody Residue Treatment (Code 384)
 - Prescribed Burning (Code 338)
- During implementation, provide technical assistance as requested by the participant.
- After Implementation, verify the enhancement was completed according to the enhancement criteria and NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) practice specifications.

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 _____



Oregon SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY

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Additional Criteria for Oregon

In addition to the criteria specified in the National job sheet E666F the following additional criteria apply in Oregon:

- This enhancement is only available for forests that are in the Ponderosa Pine and Douglas-fir habitat types, as well as the dry Grand-fir habitat types or with consultation of the state forester.
- Enhancement activities must be completed outside of the nesting season (April 1 –August 1).
- For the purpose of applying this enhancement in Idaho, Prescribed Burning does not apply to the burning of slash piles. Eligible prescribed burning activities include broadcast burning, maintenance burning, understory burning, and other similar burns which are done in order to restore ecologic functionality to the stand.
- The treated stand must have 75% or more of the residual basal area (50-60 ft²/ac by national standard) comprised of early seral species (those species vary by habitat type, but include collectively Ponderosa pine, Western larch and Western White pine). This requirement applies to the sawtimber component within the stand(10" and greater DBH).
- Where the understory shrub component exceeds 75% ground cover, treatment will be applied with will reduce the coverage to 25% or less. Treatment can include Prescribed Burning (338), brush managementI (314), or any other practice that acheives the same result in reducing the level of understory brush.



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Additional Documentation Requirements for Oregon

In addition to the documentation requirements specified in the National job sheet E666F the following criteria 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 targeted basal area of 50 to 60 square feet/acre, 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 management plan will detail the treatment activities, how those activities will be implemented to meet the enhancement objectives, 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.
- An inventory of the pre-treatment stand conditions (conifer species, sawtimber size class at a minimum) must be included with the forest management plan.