



CONSERVATION ENHANCEMENT ACTIVITY

E666L

CONSERVATION STEWARDSHIP PROGRAM

Forest Stand Improvement to rehabilitate degraded hardwood stands

Conservation Practice 666: FOREST STAND IMPROVEMENT

APPLICABLE LAND USE: Forest

RESOURCE CONCERN: Plant, Animal

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description

Hardwood forestland has been subject to poor logging practices (“high-grading”) for decades. Without professional forestry assistance the best species and individual trees are removed, often before maturity (“diameter-limit cutting”), leaving the poorest species and individual trees to regenerate the stand. Reversing this process requires cutting or killing poor quality trees while retaining any desirable species that might still be present. A combination of 3 silvicultural methods are applied: crop tree release, group selection (all trees removed from an area 0.25 to 1.0 acre in size) and small clear-cuts (all trees removed from an area 1-3 acres in size).

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.

- Identify tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.). Some crop tree species will meet multiple objectives (oak, cherry, black walnut, tulip-poplar, pine, spruce).
- Crop trees will receive a crown-touching release: any undesirable trees touching a crop tree crown will be cut or killed.

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- Areas of 0.25 acre or more with no crop trees will be clear-cut, up to 3 acres in size.
- Forest stand improvement activities will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by the state's NRCS Wildlife Habitation Evaluation Guide (WHEG) and will be managed to achieve or maintain a value of 0.75 or greater.
- Invasive species will be controlled before tree cutting begins.
- Refer to criteria in NRCS Conservation Practice Standard Integrated Pest Management (Code 595) 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.
- Treatment activities will be conducted during periods of the year that accommodate reproduction and other life-cycle requirements of the targeted wildlife and pollinator species.
- Retain a diversity of tree species, where possible, to reduce the potential impact of an epidemic event (e.g. insect outbreak) that may kill trees of some species.
- Trees removed that have marketable quality can be sold.
- Killed trees that do not interfere with tree regeneration shall be left standing to provide wildlife habitat, except where snags will become a safety hazard (within 100 ft. of a building, power line, road, etc.) or create a fire hazard. Snags that must be cut for safety reasons shall be left on site to become coarse woody debris on the forest floor (unless they create a fire hazard).
- As applicable, cut damaging vines away from crop trees
- 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.
- Use NRCS Conservation Practice Standard Access Road (Code 560), for more heavily used roads associated with forest stand improvement activities.



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- 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 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, work with professional forester to develop forest management plan documenting which of the three methods will be used (crop tree release, group selection, or clear cut) and in what stands they will be implemented.
- Prior to implementation, work with professional forester and/or NRCS to determine ways to implement the enhancement that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
- Prior to implementation, work with professional forester and/or NRCS to protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation.
- Prior to implementation, work with professional forester and/or NRCS if temporary access use NRCS Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.
- Prior to implementation, work with professional forester and/or NRCS to delineate areas to be treated on a map (s).
- Prior to implementation, work with professional forester and/or NRCS to complete an Implementation Requirements sheet for NRCS Conservation Practice Standard Forest Stand Improvement (Code 666). Depending on method(s) specified in the plan, address:
 - Identify tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.).
 - Identify areas of 0.25 to 1 acre in size that will have group selection.
 - Identify areas of 1-3 acres in size that will be clear cut.
 - Specify how undesirable trees and shrubs will be cut or killed.

Stand #	Treatment Option

- Invasive species will be treated prior to implementation or concurrently with cut.



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- During implementation, notify NRCS of any planned changes to verify they meet the enhancement criteria.
- During implementation, verify that killed trees/snags that do not interfere with regeneration are left standing or cut and left on site (if safety hazard).
- During implementation, cut damaging vines away from crop trees.
- After implementation, notify NRCS that implementation has been completed.

NRCS will:

- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement.
 - Integrated Pest Management (Code 595)
 - Woody Residue Treatment (Code 384)
 - Prescribed Burning (Code 338)
 - Access Road (Code 560)
- Prior to Implementation, provide and explain, as needed, NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) and assist the participant in completing an Implementation Requirements sheet. Depending on method(s) specified in the plan address:
 - Identify tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.).
 - Identify areas of 0.25 to 1 acre in size that will have group selection.
 - Identify areas of 1-3 acres in size that will be clear cut.
- Prior to implementation, assist landowner to determine ways to implement the enhancement that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
- Prior to implementation, assist landowner to protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation. Provide and document with Participant on NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) Implementation requirements sheet.
- Prior to implementation, if temporary access is needed, provide participant with NRCS Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.



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- Prior to implementation, as needed, provide assistance in delineating treatment area on a map(s).
- Prior to implementation, verify that invasive species have been treated or treating concurrently with cut.
- Prior to implementation, Wildlife Habitat Evaluation Guide (WHEG) or State equivalent must be completed. **Existing condition WHEG score:** _____ **Planned after implementation WHEG score:** _____
- During implementation, as needed, evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation, verify that killed trees/snags that do not interfere with regeneration are left standing or cut and left on site (if safety hazard).
- After implementation verify that damaging trees have been removed from crop trees.
- After implementation, Wildlife Habitat Evaluation Guide (WHEG) or State equivalent must be completed and have a value of 0.75 or greater. **After implementation WHEG score:** _____
- After Implementation, verify the enhancement was implemented according to the NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) specifications 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



**WASHINGTON SUPPLEMENT TO
CONSERVATION ENHANCEMENT ACTIVITY**

**CONSERVATION
STEWARDSHIP
PROGRAM**

E666L

Additional Criteria for Washington

- In addition to the criteria specified in the National job sheet E666L the following additional criteria apply in Washington:
 - Use this Enhancement for Oregon white oak, aspen and hardwood dominated riparian forests. Other hardwood dominated forests such as Pacific madrone, big leaf maple or birch may also be appropriate for this enhancement. Use WebSoil Survey soils reports for Ecological Site Descriptions (ESD), Forest Productivity and Rangeland and Forest Vegetation Classification to determine if site is appropriate for target plant communities. Natural Heritage Program ecological sites or USFS plant associations may be substituted for ESDs, if ESDs are unavailable.
 - "Crown-touching release" is a Crop Tree Management technique. Crop Tree Management is a stand density management method commonly used in multi-storied uneven aged management or in the transition from even aged management to uneven aged management. Group selection patch cuts and small patch clearcuts are also designed to achieve multi-storied uneven aged management.
 - The Wildlife Habitat Evaluation Guide for here in WA, is Biological Technical Note 14 and its Upland woodland and Riparian tabs are appropriate for evaluation of general wildlife habitat on forestland. For habitat needs for specific wildlife species or forest habitats of concern see the Washington Wildlife Action Plan.
 - Publications such as Woodland Fish and Wildlife series, WDFW's Living with Wildlife series and other Extension or peer reviewed publications are good sources of habitat requirements for individual wildlife species or composition and structure requirements for individual forest habitat types.
 - To protect ground nesting birds stand improvement activities will occur between August 1st and March 1st.



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- Based on WebSoil Survey soil suitabilities and limitations, protect soils sensitive to rutting, compaction and erosion, by using machinery only when the soil is dry or frozen, managing water runoff on the road surface, and/or vegetating the roads, trails and landing. All work done on Forest roads will be in compliance with WA Forest Practices Regulations (See WAC 222-24 and guidelines in Board Manual Section III)
- Use the Conservation Practice 384 Woody Residue Treatment Specification Guide (FOTG, Section IV), USFS forest residue photo series, or use some other professionally accepted protocol for estimating the amount of down wood on site and/or created by silviculture activities. In fire prone areas (dry forests) keep down woody debris (forest slash) to 9 tons/acre or less. The 9 tons will be lopped and scattered and < 2' in height. The woody debris should be distributed across the site and break continuity in order to disrupt the spread of a fire. Woody debris amounts greater than 9 tons/acre will need to be treated through piling, chipping, crushing or removal (See WAC 332-24-652). In moist forests, keep down woody debris > 9 tons/acre outside of the Extreme Fire Hazard areas described in WAC 332-24-650.
- **NRCS WA does not provide technical or financial assistance for prescribed burning. See WA Dept. of Natural Resources (WA DNR) for all assistance associated with prescribed burning such as burn plans and burn permits. In addition, contact WA DNR for all assistance associated with WA Forest Practices Rules and Applications.**

Additional Documentation Requirements for Washington

- In addition to the documentation requirements specified in the National job sheet E666L the following additional documentation requirements apply in Washington:
 - Provide Implementation Requirements for Forest Stand Improvement (666) which documents hardwood forest habitat type to be restored and pre- and post- treatment inventory of crop trees and competing vegetation.
 - Document current and post treatment forest residue/fuel loading. Also document which method was used for estimating the amount of forest residue.
 - If WA DNR Forest Practice Application (FPA) is requirement, document the FPA requirements have been met.