



**CONSERVATION ENHANCEMENT ACTIVITY**

**E6660**

**CONSERVATION STEWARDSHIP PROGRAM**

Snags, den trees, and coarse woody debris for wildlife habitat

**Conservation Practice 666: Forest Stand Improvement**

**APPLICABLE LAND USE: Forest, Associated Ag Land, Farmstead**

**RESOURCE CONCERN: Animals**

**ENHANCEMENT LIFE SPAN: 10 Years**

**Enhancement Description**

Improve wildlife habitat through creation and retention of snags, den trees, wolf trees, forest stand structural diversity, and coarse woody debris on the forest floor, to provide cover, shelter, and other habitat features for native wildlife species.

**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 desired wildlife species that use snags, den trees, wolf trees, coarse woody debris, and/or brush piles for shelter, cover, perches, nest sites, rearing sites, etc.
- Manage for specific tree species, or a selected mix of species, size-classes, and stocking rates at the appropriate scale to meet desired wildlife habitat requirements.
- Create, recruit, and maintain sufficient snags, wolf trees, nest trees, cavity/den trees, and coarse woody debris to meet requirements of desired species. Arrange downed woody material into brush piles as appropriate for desired wildlife species. Refer to criteria in NRCS Conservation Practice Standard Upland Wildlife Habitat Management (Code 645) for manipulation of vegetation.

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- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.
  
- When determining which trees will be killed for snag creation, and/or used to create cavities/dens or perches, consider effects on the remaining stand.
  - 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.
  - 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.
  - Consider using downed woody material to create brush piles for additional wildlife habitat.



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## Documentation and Implementation Requirements:

### Participant will:

- Prior to implementation, participant will work with NRCS to identify the desired wildlife species that use snags, den trees, coarse woody debris, perches, and/or brush piles for shelter, cover, nest sites, and/or rearing sites, and are likely to benefit from the enhancement.

Desired Wildlife Species

- Prior to Implementation, participant will work with professional forester or NRCS to delineate on a map the acres that the enhancement would be applied.
- Prior to implementation, participant will work with professional forester or NRCS to estimate how many snags, wolf trees, den trees, coarse woody debris, and/or brush piles are present per acre on the acres identified.
- Prior to implementation, work with NRCS to determine how many snags per acre per size class would be needed in addition to those present that will benefit the wildlife species.

Snags and Woody Residue size classes	Estimated Snags/Den Trees per Acre	Desired Snags/Den Trees per Acre	# of Snags/Den Trees per Acre to be Created
Snags 6-10 inch diameter at breast height.		2 or more	
Snags 10-20 inch diameter at breast height		2 or more	
Snags >20 inch diameter at breast height		2 or more	
Large Woody Debris >20 inch diameter		1 or more	
Brush piles		1	

- During implementation, notify NRCS if any planned changes to verify they meet the enhancement criteria.
- During implementation, keep a written log and take digital photos of snag/den trees created and approximate locations on a map.
- After implementation, notify NRCS that the work has been completed; submit digital photos.



**Documentation and Implementation Requirements:**

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**Participant will:**

- Prior to implementation, participant will work with NRCS to identify the desired wildlife species that use snags, den trees, coarse woody debris,
- After implementation, retain digital photos for NRCS to verify practice has been completed.

**NRCS will:**

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- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement.
  - Forest Stand Improvement (Code 666)
  - Upland Wildlife Habitat Management (Code 645)
- Prior to implementation, assist participant in determining which wildlife species will benefit from snags, den trees, coarse woody debris, and/or brush piles for shelter, cover, nest sites, and/or rearing sites.
- Prior to implementation, assist the landowners to delineate on a map the acres that the enhancement would be applied.
  - Prior to implementation, assist the participant to determine the number of snags (by size class), den trees, coarse woody debris, and/or brush piles exist on the acres delineated by the enhancement. Determine the desired number, with the difference being the # of snags, den trees, coarse woody debris, and/or brush piles need to be created to meet criteria of the enhancement.
- During implementation, as needed, evaluate any planned changes to verify they meet the enhancement criteria.
  - After implementation, verify that the number of snags, den trees, coarse woody debris, and/or brush piles have been created.

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**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

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### E6660

#### Additional Criteria for Washington

- Create snags in locations where they will not pose immediate danger to people or structures, or risk blocking roads or falling on power lines.
- In addition to the criteria specified in the National job sheet E6660 the following additional criteria apply in Washington:
  - Use Forestry Technical Note 10 Table 2 for flexibility in creating structural diversity for wildlife habitat. Consider, variable density thinning with skips and gaps and crop tree management as thinning methods for increasing structural diversity in the living forest.
  - Prioritize retention of old-growth remnants or other legacies offering unique, larger-dimension habitat structures.
  - **Woodland Fish and Wildlife publications** as well as Washington Department of Fish and Wildlife’s **Living with Wildlife** fact sheets provide habitat requirements for target wildlife species and/or species groups:  
<https://woodlandfishandwildlife.com/> and <https://wdfw.wa.gov/species-habitats/living/species-facts>
  - See WDFW’s **Snags-The Wildlife Tree**, for tips on creating and maintaining snags:  
[https://wdfw.wa.gov/sites/default/files/2020-07/snags-the\\_wildlife\\_tree-1.pdf](https://wdfw.wa.gov/sites/default/files/2020-07/snags-the_wildlife_tree-1.pdf)
  - In addition, see Woodland Fish and Wildlife’s publication, **Wildlife-Friendly Fuels Reduction in Dry Forests of the Pacific Northwest** for general guidance on structural diversity to promote wildlife habitat:  
<https://woodlandfishandwildlife.com/publications/eastside-dry-habitats/wildlife-friendly-fuels-reduction-in-dry-forests-of-the-pacific-northwest/>

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- The following criteria will be considered and implemented where field conditions are suitable for creating snags and down logs:

- ✦ Snags and coarse woody debris will be created from a mix of conifer and hardwood trees when both are present in the stand. If present, utilize non-native tree species that are competing with native trees and shrubs for the creation of snags or downed woody debris. Snag establishment is recommended in locations within 1000 feet of water, or near forest edges, gaps, openings, fields, and prairies.

- ✦ Create additional snags within the forested acres by girdling/killing live trees. When choosing trees to kill, consider that the majority of cavity nesting/denning animals prefer the largest available snags, which often extend above the forest canopy and retain bark for a longer period of time. Also focus on creating snags from trees that are undesirable for quality forest products due to species or form. Have a mixture of snags (standing dead trees) and den trees (live trees with natural holes or cavities, often hardwoods).

- ✦ If creating snags by girdling, you may either remove a single strip of bark 4 inches wide all the way around the circumference of the trunk, cutting down through the bark and cambium to the wood, or you may make 2 cuts 2 inches wide and six inches apart, completely circling the trunk and cutting through the bark and cambium. Topped trees (trees with tops removed) are acceptable and will develop into den trees or snags.

- ✦ Evaluate whether creation of the planned number of snags in a single cohort (season) may foster excessive bark beetle populations, in the context of the current condition of the stand as well as that of the surrounding landscape. Where the number or density of newly created snags may be a concern, one may divide the snag creation into cohorts separated by at least two years. Consulting a forester and/or existing forest health data may be helpful. The Washington State Department of Natural Resources conducts annual surveys of forest health conditions; their aerial survey information is available (100k quad maps) at: <https://www.dnr.wa.gov/InsectsAndDisease>

- ✦ Placement of coarse or downed wood (logs or habitat piles) is recommended within 1000 feet of water. Downed wood located closer to water, even



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seasonal wet areas, will provide more habitat benefits. If large down logs (20" diameter small end) logs are not available, linear log piles can be assembled using smaller diameter trees.

- ✦ Minimum size of brush piles for habitat are 10 feet in diameter and 6 feet in height. NRCS planner will provide the recommended design of the brush piles to improve adequacy of cover/shelter for target wildlife species.
- ✦ Secondly to the priorities specified above (including the retention of legacy structure, and emphases on locations near water/edges and, typically, larger trees), habitat structures should tend to be distributed evenly across the treated acres
- ✦ All snags (existing or created) 20 inches diameter or larger will be marked as wildlife trees with a permanent sign.

### **Additional Documentation Requirements for Washington**

- In addition to the documentation requirements specified in the National job sheet E666O the following additional documentation requirements apply in Washington:
  - ✦ 1. Treatment methods used for creating structural diversity, snags, den trees, creating and placing down wood and creating brush piles.
  - ✦ 2. Timing of treatment –
    - To avoid disturbing nesting birds, perform the activities within this enhancement between August 1st and March 1st.
    - To protect soils sensitive to rutting, compaction and erosion, use machinery only when the soil is dry or frozen.
  - ✦ 3. Record the locations of the wildlife structures (snag, down log or brush pile) created on the property by map, GPS, or other method that will make it easy to again locate these structures.