

Project #1 - Small Tree-Topping
Project #2 - Down Wood Creation

End Result: Improve stand structure and species diversity in even-aged monoculture plantations of Douglas-fir. The end result will create old growth habitat for the marbeled murrelet and spotted owl, and other old growth dependent species.

Measure of accomplishment: Trees topped and trees felled
Quantity: 204 for Project #1, 85 for Project #2

Project Specifications

Subdivision Numbers	8	9	13	14	16	16A	17
Subdivision Acres	14	13	8	56	1	5	5
Project #1 - number of trees to top	28	26	16	112	2	10	10
Project #2 - number of trees to fall	14	0	8	56	1	1	5

- 1) Trees selected for treatment will consist only of plantation trees, and will be distributed following the criteria described below in the identified subdivisions.
- 2) All trees selected will be live Douglas-fir or hemlock trees. Hemlock will not be cut where this species is less than 50% of the specific treatment area. Trees selected will be sound: shall not have forked or broken tops, crooked boles, large scars, or other detrimental structural characteristics.
- 3) **Distribution shall be clumped or grouped. Groups and clumps shall be at least 100' from a stream or open road and at least 75' uphill and 50' downhill from any other road.**
 - a) Mingle topped trees and down wood (Tree Falling) in large clumps, but combined opening size should not exceed ½ acre; for example 120' wide and 200' long.
 - b) Clump is defined as an area containing 10 or more treated trees that are within 50' of another treated tree of the same clump. Clumped trees should be a combination of felled or topped trees. Total affected area when mingling treatments shall not exceed ½ acre; Minimum size of a clump should be 10 treated trees; such as 5 felled and 5 topped. Distance between clumps with more than 10 treated trees shall be 400-800 feet.
 - c) Group is defined as 2 to 9 treated trees that are within 50' of another treated tree of the same group. Distance between groups shall be 200-400 feet.
 - d) Location of treatment areas should be along secondary ridges and gentler slopes where possible. Locate clumps first around any big leaf maple trees - if present, second around large alder (> 8" dbh) - if present, and third around one or two "dominant" live conifer trees.

Chainsaw topping: intent is to create snags and live topped trees in equal proportion, but a ten percent tolerance is acceptable; e.g., 40% snags and 60% live topped or vice versa. Handsaws are permitted during nesting and fire restricted seasons. (Other methods of tree topping are not permitted, such as blasting tops out.)

- 4) **Chainsaw topping: Snag trees.** Intent is to create a dead tree/snag.
 - a) **Snag trees will have two to four live limbs over five feet in length and will be at least 35' tall.**
 - b) Remove epicormic branches, limbs shorter than 5 feet and any other live limbs below treatment, except for the 2-4 required.
 - c) The sawed surface will have 4 grooves, each at least 4 inches deep. Grooves will be created in a tic-tac-toe grid formation.

- 5) **Chainsaw topping: Live trees.** The intent is to promote development of a stove-pipe cavity in a live tree. Topping to the specified standards will provide good conditions for fungi that cause heart-rot, and retaining adequate amount of live limbs below topping site should keep the tree alive and allow upper most limbs to grow vertically and eventually provide cover over the developing cavity.
 - a) Live trees will be in the largest size class available.
 - b) Live trees shall retain at least 15 live limbs that are at least five feet in length. Retain all epicormic branches and shorter live limbs.
 - c) Live tree diameter (outside bark) at topping height shall be greater than 6 inches.
 - d) Live trees will have a minimum of 1-foot of bole area above the last whorl of green limbs. This will facilitate rot development above last live whorl of branches. The sawed surface will have 4 grooves, each at least 4 inches deep. Grooves will be created in a tic-tac-toe grid formation.
 - e) Trees meeting these specifications (a, b, c and d) for Live trees will be dominant trees with full crowns (30-50% crown ratio).
- 6) **Tree felling**
 - a) At least 70% of felled trees shall be felled side-hill (within fifty degrees of horizontal). Over-lap felled trees where possible.
 - b) Minimum outside bark diameter at breast height (dbh) of felled trees will be 10".
- 7) **Marking treated trees**
 - a) **Topping: Contractor will paint topped trees** with a band of orange paint at dbh level and orange tree number above dbh level and wrap orange and white striped flagging around the trees. "Wildlife Tree" signs will be placed at dbh. Nails shall not be completely nailed into the tree to allow for continued diameter growth on all live trees.
 - b) **Tree felling:** Contractor will establish an untreated tree as the clump identification tree by wrapping orange and white striped flagging around trees and painting two bands of orange paint around a tree and painting the clump or group number on the tree; e.g., C1 or G1.
- 8) **The Contractor will furnish paint, flagging, aluminum nails. Government will furnish "Wildlife Tree" signs.**
- 9) **Contractor will map** location of each clump/group with GPS. GPS location of individual trees is not required. Coordinates are NAD 83, UTMs. Contractor must provide an electronic and written file of coordinates to the SA. Electronic transfer can be accomplished by submitting a CD or by sending an email with the attached file. Acceptable electronic methods are listed below and shall include coordinates and corresponding name, number, and clump number for each clump. These methods are:
 - a) A GDB file with locations of clumps from Mapsource or similar program.
 - b) An electronic spreadsheet containing X column and Y column coordinates, and a column identifying corresponding data.
- 10) Contractor will label a Reference Tree at each treated subdivision that is live and easily visible from a main, drivable road. Mark with a band of orange paint and "R" painted above the band. Two pieces of orange and white striped flagging shall be tied on a branch or around the bole and shall extend a minimum of two feet, with point of tie facing the road. The contractor shall record the project name, project area number, bearing and approximate distance to the treated tree closest to the road, and the treated tree number on the flagging with a permanent marker. If the reference tree is over 200 feet from the closest treated tree, flag the route to the tree with orange and white striped flagging.
- 11) The Contractor is REQUIRED to submit a weekly plan of work at least two days before implementing each weekly plan. This plan shall be submitted to the project Sale Administrator (SA).

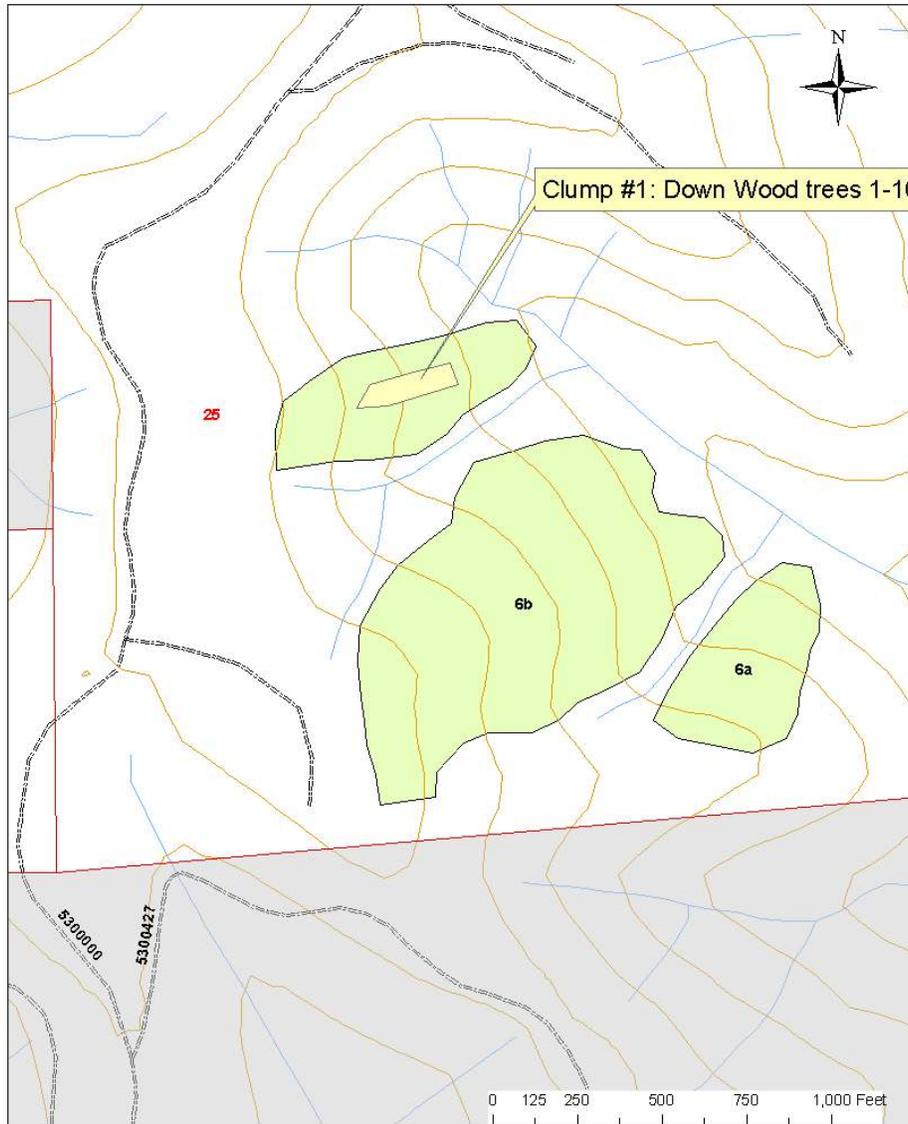
The Contractor is REQUIRED to inform the project contract administrator within 7 days of when a subdivision has been accomplished and provide a completed tree register form with signature and a map showing accurate location of clumps or groups of treated trees and their corresponding tree-numbers. See attached example of completed map and tree register form.

When: Work can occur anytime of year, with the following requirements, unless otherwise agreed:

- After yarding is completed and accepted for the subdivision.
- In wind-prone areas of harvested subdivisions (as identified by Forest Service), allow at least 1 year after harvest to complete the felling and topping.
- **For operating restrictions, use restrictions described in K-G.3.1.5# PROJECT OPERATION SCHEDULE**

Inspection details: contractor will provide inspection reports as detailed in their Quality Control Plan.

Earley School Unit Example - Unit 6



Project #3 - Meadow Enhancement

End Result: Increase early seral habitat for wildlife, reconnect existing meadows, and prepare ground fuels for a light to moderate underburn.

Measure of Accomplishment: All Green Bio Cv material meeting minimum specifications in A.2 cut, removed, and scaled from Subdivisions 1-5, 11. All trees less than 7 inches DBH and not meeting minimum specifications in A.2 cut and removed from Subdivisions 1-5, 11. Logging slash^{1/} removed from unit in Subdivisions 1-5, 11 and 18.

Project Specifications, Subdivisions 1, 2, 3, 4, 5 and 11: Cut, remove and scale all Green Bio Cv material meeting minimum specifications in A.2. Cut and remove all trees less than 7 inches DBH and not meeting minimum specifications in A.2. Stumps need to be flush cut (no greater than 3" above ground level). Remove logging slash^{1/} from unit. Minimize soil compaction and soil disturbance to meadows and protect improvements.

Project Specifications, Subdivision 18: Remove logging slash^{1/} from unit.

Project #4 - Campground Biomass Treatment

End Result: Increased sun exposure to ground, encouraging growth of grasses and forbs.

Measure of Accomplishment: All Green Bio Cv material meeting minimum specifications in A.2 cut, removed and scaled from Subdivision 7 (campground). All trees less than 7 inches DBH and not meeting minimum specifications in A.2 cut and removed from Subdivision 7. Stumps should be no greater than 3" above ground level. Remove logging slash^{2/} from unit.

Project Specifications, Subdivision 7: Cut, remove and scale all Green Bio Cv material meeting minimum specifications in A.2. Cut and remove all trees less than 7 inches DBH and not meeting minimum specifications in A.2. Stumps need to be flush cut (no greater than 3" above ground level). Remove logging slash^{2/} from unit.

^{1/} Logging slash is defined as any material generated by contractor's operations that is greater than 1 inch in diameter and greater than 3 feet long.

^{2/} Logging slash is defined as any material generated by contractor's operations that is greater than 1/2 inch in diameter and greater than 3 feet long.