

ATTACHMENT A - MANDATORY STEWARDSHIP PROJECTS

Project Number 001- Snag Creation

The end result of treatment is to create 151 lopped-off live trees in 42 units to replace snags in corridors and/or skid trails. Units, acreages and numbers of snags are listed in the Table 1.

Location and spacing in unit of created snags:

1. Created snags should be at least 200 feet from an open road.
2. Snags can be created in groups of up to 3 trees.

Specifications of created snags:

1. Created snags should approximate the size of snags removed, or a minimum of 12" dbh.
2. Created snags should be at least 15 feet tall and preferably as tall as possible.
3. Created snags should retain at least 1 whorl of live limbs below cut area.
4. Tree species for snags in descending order of preference: western larch, Douglas-fir, lodgepole pine, ponderosa pine, Engelmann spruce, alpine fir.

Trees to avoid:

1. Vigorous, full-crowned, dominant or super-dominant trees
2. Trees with dead tops, conks, or fading crowns.

Table 1 - Unit in which snags are to be created.

Unit#	Acres	Number of snags to create	Unit#	Acres	Number of snags to create	Unit#	Acres	Number of snags to create
14	6	1	78	20	2	132	11	1
23	28	3	80	6	1	134	49	4
25	40	3	81	39	3	140	30	3
31	44	4	84	14	2	142	13	1
35	107	9	92	11	1	143	57	5
40	73	6	93	115	9	147	10	1
41	253	19	97	48	4	149	2	1
52	46	4	105	13	1	152	36	3
58	96	8	106	50	4	154	4	1
61	20	2	107	14	2	160	12	1
62	52	4	108	16	2	242	3	1
66	79	6	119	28	3	260	8	1
71	31	3	121	83	7			
75	47	4	122	65	5			
77	46	4	124	22	2			

Project Number 002 - Additional Marking to Meet Prescriptions

The end result is to retain the best available trees to the specified stocking level or other desired condition as summarized in the Designated by Prescription (DxPre) Marking Plan listed in Table 2. Designated leave trees shall be marked with non-tracer orange paint supplied by the Contractor and approved by the Forest Service. The Contracting Administrator shall determine the number of acres to be marked and will review/approve the marking prior to harvest. Skips will be differentiated from the rest of the marked leave trees in the units.

DxPre Units (1,493 acres):

108, 119, 121, 122, 134, 140, 143, 147, 152, 154, 160, 260, 23, 31, 35, 41, 52, 58, 62, 66, 71, 75, 77, 78, 80, 81, 84, 92, 93, 97

SPECIFICATIONS

Thinning: The process of selecting and leaving the largest, most fire resistant trees (including those showing good health characteristics), to meet the average spacing rate listed for the units.

Trees that are selected to be left to meet the stocking level specified shall be desirable leave trees. The Contractor shall first select the most desirable species of trees as defined in item 1 below. The Contractor shall then select the most desirable leave trees as defined in item 2 below. In areas where there are not enough trees with the most desirable characteristics available to meet the specified stocking level, the Contractor shall select less desirable leave trees listed in item 3.

1. Desirable Species - the most fire tolerant defined as follows:
Ponderosa pine, white pine, western larch, Douglas-fir, lodgepole pine and others in this order of preference. Criteria for selection between species is as follows, preferred species that are at least half the height of a less preferred species will be left as the leave tree, given desirable tree characteristics are present.
2. Most Desirable Leave Trees: Trees that possess the following characteristics shall be the first choice for desirable leave trees:
 - a. Dominant Trees: Trees which are taller on the average when compared to other trees in the unit. These trees are not severely suppressed.
 - b. Codominant Trees: Trees that are taller on the average when compared to other trees in the unit. These trees are not severely suppressed.
 - c. Healthy Foliage: Foliage shall be dark green in color with a full crown over one third or more of the trees.

- d. Straight Bole: The bole or stem of the tree shall be relatively straight. Trees shall have a single branch terminal.
- e. Free of Physical Damage: Trees shall not have physical damage from fire, animals or weather on more than one-fourth of the circumference of the bole or more than three feet of length of the bole.
- f. Free of Disease Damage: Trees shall not have disease damage such as dwarf mistletoe, gall rust, peridermium cankers and stalactiform rust. Symptoms of gall rust are galls on the branch and stem. Symptoms of peridermium cankers are the presence of cankers on the bole and branches. Symptoms of stalactiform rust are elongated, diamond-shaped cankers and associated resin.
- g. Free of Insect Damage: Trees shall not have insect damage from Mountain Pine Beetles and Ips Beetles. Symptoms of Mountain Pine Beetles are small red to yellowish pitch tubes (less than one-fourth inch) and boring dust in bark crevices and round the base of the tree. Symptoms of Ips Beetles are dead tops and group killings without pitch tubes.

3. Less Desirable Leave Trees: When the prescribed stocking level of most desirable leave trees cannot be achieved with trees that possess the most desirable characteristics, the Contractor shall select trees with less desirable characteristics in the priority listed below:

- a. Minor Defect: Trees with minor defect such a sharp crook or a small amount of animal damage.
- b. Suppressed Trees: Trees that have been severely suppressed. Extremely short or nonexistent internodes, twisted gnarled stems, or an extreme sparseness of foliage usually characterizes them.
- c. Other Live Trees: Trees other than insect or disease damaged trees with $\frac{1}{4}$ live crown.
- d. Forked Trees: Those trees with two or more terminal leaders.
- e. Physical Damage: Trees that have physical damage on half or more of the bole circumference and greater than three feet in length. Physical damage may be caused by equipment, falling trees, lightning, wind, animals, etc.

Spacing: The horizontal distance from the trunk of one leave tree to the trunk of the next nearest leave tree. Average spacing is calculated from the leave trees per acre.

Streamcourse: The area along a stream with riparian vegetation and other riparian characteristics. Stream courses are noted on the Contract Area Map.

Leave trees: 1) All snags that do not pose a hazard to operations as defined by the Washington State Labor and Industry standards, or are not identified for removal in the fireline construction end products specifications shall be considered leave trees and left uncut. 2) all designated leave trees both in the treatment units shall be left uncut and undamaged. Operations shall be conducted in such a manner so as to not damage any leave trees during operations

Resource Protection: The Contractor shall exercise extreme care to prevent damage to existing facilities, developments, and resources in all aspects of the contract work.

Tree Species Abbreviations:

PP Ponderosa Pine
DF Douglas-fir
RC Western Red Cedar
WL Western Larch
LP Lodgepole Pine
AF Alpine Fir
ES Engelmann Spruce

DMT - Douglas-fir Mistle Toe

Table 2

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
23	May have 3 to 4 gaps of less than 2 acres totaling less than 7 acres if needed to cut out DMT.	40-60 ft ² BA/acre, including the blue marked trees already present. Take all LP. Take all DMT greater than 3 H-rating.	7-20.9" DBH	PP, WL	10 per acre of up to 3 trees (healthy ones only!) within 3 feet of each other	If the 21.0"+ DBH tree is in poor shape, retain it and the largest tree within a 30' radius. Blue Marked**
31	NA	40-60 ft ² BA/acre. Retain WL.	7-20.9" DBH	PP w/o beetle sign	10 per acre of up to 3 trees (healthy ones only!) within 2 feet of each other.	
35	NA	60-80 ft ² BA/acre. Take all DMT greater than 3 H-rating. Take all LPP.	7-20.9" DBH	PP, WL	Trees within 1' of leave tree bole face should be left as a clump.	Blue Marked**
41	Already marked in yellow. Clear 50' feet radius from yellow marked trees.	40-60 ft ² BA/ac. Take DF with DMT rating greater than 3. Cut LP less than 18"DBH except in SAF/Spruce In area of AF and Spruce, only clear around yellow marked trees.	7-20.9" DBH			Buffer trail and trailhead for 30-50 feet. Aspen. Protect snags. Old Blue paint in Unit.

** Blue Marked - these trees will be cut and removed by the contractor. Apply the DxPre to meet the end result knowing that Blue marked trees will be not be there.

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
52	Openings of up to 2 acres in DMT, for a total of less than 10 acres	Take all WL and DF DMT greater than 3 H-rating or with signs of systemic infection. Take all LP. Thin rest to 40-60 ft ² BA/acre.	7-20.9" DBH	Healthy mix of PP, DF and WL		
58	Openings of up to 2 acres for a total of less than 20 acres will occur where needed in DMT.	Take all WL and DF DMT greater than 3 H-rating or systemic. Take all LPP. Thin rest 40-60 ft ² BA/acre. There is not much mistletoe in the east part.	7-20.9" DBH	PP,WL	6/ac. Up to 3 trees per clump within 4 ft of each other.	
62	NA	Take all DMT greater than 3 H-rating. Thin rest 60-80 ft ² BA/acre.	7-20.9" DBH	PP Preference for healthy trees within a 2" size class.	Clumps may be left as they occur Up to 3 trees per clump. Within 2 ft.	Aspen Where 21 inch leave trees are in poor form, leave a second replacement tree within the growing space. Old Green, Black, Orange, Blue Paint.

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
66	1 acre openings in areas of bad DMT (see comment).	Cut LP and Spruce , cut DF with current beetle frass, Cut WL, DF DMT 3+ SE for grouse), space rest 20-30 feet, leaving the healthiest most vigorous trees.	7-20.9" DBH	WL Preference for healthy trees within a 4" size class. DF tends to have bigger diameters for the same height.	6/ac. Up to 3 trees per clump. Within 4 ft. of each other.	Aspen Grouse in the SE part of the unit-DF with lower brooms and Hazard ratings of 1 or 2 can be left as grouse habitat, 8/ac. Old Blue/Orange Paint
71	2 acre openings in area of bad DMT infection and/or beetle frass, for a total of less than 8 acres	60-80 ft ² BA/acre, clearing more around 12"+ trees.	7-20.9" DBH	PP		Clear 100 feet from aspen clumps
75	Up to Four: 2- 3 acre groups in areas of bad DMT, frass, poor form	60-80 ft ² BA/acre	7-20.9" DBH	PP, WL		

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
77	NA	90-110 ft ² BA/acre. Cut all LP. Protect snags. Leave stand patchy and clumpy.	7-20.9" DBH	Mix of healthy trees.		Where 21" DBH leave trees are in poor form, leave a second replacement tree within the growing space. Leave in clumps where they occur; for example: Where two 21"DBH trees are in a clump with an 18" one, leave the 18".
78	Two: 2-3 acres group openings as needed to remove insect/disease and poor form/ vigor	60-80 ft ² BA/acre. Take all LP.	7-20.9" DBH	PP		
80	Leave Gap in root rot pocket by clearing 50 feet from dead trees in root rot pocket.	50-70 ft ² BA/acre	Leave LP>19"DBH 7-20.9" DBH for other tree species.	WL		Leave all PP with Live Crown Ratio > than 35% (leaving eleytroderma is OK). Recent blowdown in unit. For Grouse, retain at least 8 winter roost trees/acre (largest ponderosa pine or Douglas-fir, including mistletoe-infested Douglas-fir) in dusky grouse existing roosting habitat.

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
81		60-80 ft ² BA/acre. Take DF DMT rating>4.	7- 18" DBH	PP		Ignore old blue flagging and inventory plot in unit.
84	<u>Two</u> , 2-3 acre openings. 1 Gap already marked.	Remove all WL and DF less than 10"DBH with DMT, remove 10" and greater with DMT ratings greater than 3. Take all LP less than 19"DBH. For the rest of the stand, 60-80 ft ² BA/acre.	LP 7- 19" DBH; 7-20.9" DBH		Where spruce is leave tree, leave a group of 4-6 trees.	Aspen. Grouse: Retain at least 8 winter roost trees/acre (largest ponderosa pine or Douglas-fir, including mistletoe-infested Douglas-fir) in dusky grouse existing roosting habitat.
92	<u>One</u> , 2-3 acre group in worst DMT	70-90 ft ² BA/acre. Cut LP less than 21"DBH.	7-20.9" DBH	WL		
93	<u>Ten</u> , 2-3 acre group openings or gaps as needed in areas of poor vigor, beetle activity and bad DMT	Cut LP less than 21"DBH. 60-80 ft ² BA/acre Don't count natural openings in average BA.	PP 7-18" DBH; 7-20.9" DBH for other species.	PP		Aspen Snags

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
97	Already marked in yellow. Clear 50 feet from yellow marked trees. (2 Gaps)	50-70 ft ² BA/acre, Cut all LPP less than 21"DBH. Trees with DMT H Rating of greater than 3.	7-20.9" DBH	Healthy Mix, favoring PP.		Aspen
108		60-80 ft ² BA/acre. Take all DMT greater than 3 H-rating. Take all LPP.	7-20.9" DBH	WL, PP	Trees within 1' of leave tree bole face should be left as a clump.	Blue Marked
119, 121	<u>Three - four,</u> 2 acre openings in areas of bad DMT and Root rot	40-60 ft ² BA/acre	7-20.9" DBH		Leave 6/acre clumps of 2-4 trees within 2 feet of each other	Cut LP, DMT with ratings greater than 3. Target intermediate and suppressed.
122, 134		60-80 ft ² BA/acre. Cut LPP	7-19" DBH.	WL, PP	Leave 6/acre clumps of 2-4 trees within 4 feet of each other	If Leave tree greater than 19" DBH is in poor shape, leave a nice replacement tree nearby within the growing space.

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
140	Gaps will be located in bad DMT or LPP. Three, 2 acre gaps in the larger unit and 1 in the smaller. 4 Gaps already present.	40-60 ft ² BA/acre. Cut all LP. Cut systemic DF DMT as well as hazard ratings of greater than 3.	7-20.9" DBH	WL,PP		Aspen Orange paint in unit. Leave intact groups of WL snags as a skip.
143	NA	Space an average of 25 feet (20-30) or 60-80 ft ² BA/acre Leave all WL and don't count in spacing.	7-20.9" DBH	WL,PP	2-3 trees within 2 feet, 6 per acre.	
147	Already marked in yellow. Clear 50 feet from yellow marked tree. (2 gaps)	Cut all DF and WL with DMT H rating of 3 or more. Cut all LP. Space PP so crowns don't overlap.	PP 7-18.0" DBH; 7-20.9" DBH for other species	PP		

Table 2 (continued)

UNIT	GAPS Size/no./Total Acres	Marking Guides	DBH range to be marked	Preferred Leave species	CLUMPS	COMMENTS
152	Already marked in yellow. Clear 50 feet from yellow marked tree.(2 gaps).	Cut LP, cut DF with current beetle frass Cut WL, DF DMT 3+ (but leave 2/ac in SE for grouse), space rest 20-25 feet.	7-20.9" DBH	WL Preference for healthy trees within a 4" size class (DF tends to have bigger diameters for the same height.)	2-3 trees within 2 feet, 6 per acre.	Thin conifers 100' from Aspen, black/blue paint in unit, one or two trees with orange.
154		50-70 ft ² BA/acre Cut LP	7- 20.9"DBH	WL,PP		Grouse: Retain at least 8 winter roost trees/acre (largest PP or DF, including mistletoe-infested DF) in dusky grouse existing roosting habitat.
160,		90-100 ft ² BA/acre	7- 20.9"DBH	Healthy WL		Old Orange paint in unit.
260		90-100 ft ² BA/acre	7- 20.9"DBH	Healthy WL		