

- 1. DxPre Specifications:** Unless otherwise stated within the comments (col 5 of the DxPre table), the criteria within the DxPre Table (Item 3) shall be met by retaining the trees described to be marked within the Leave Tree Guidelines (Item 2). If an alternative to marking is agreed upon, references to “mark” should be replaced with “retain”. The DxPre Specifications are met when the marking or cutting meets the DxPre Specifications.

Leave-TreeGuidelines: Italicized groups of words are defined in definitions portion of Attachment A.

Abbreviations; Rx= Silvicultural Prescription, TPA = *Trees per acre*. BA = *Basal area*, expressed as square feet per acre (ft²/ac). SP= Species including PP (ponderosa pine), WL (western larch), DF (Douglas fir), WWP (western white pine), WRC (western red cedar) ES (Engelmann spruce), GF (grand fir), WH (western hemlock), SAF (subalpine fir), LPP (lodgepole pine), QA (quaking aspen) and PB (paper birch).

I. Leave Tree Marking:

- A. The **stump mark** shall be a minimum size of 6 inches long and 2 inches wide. It shall be placed at the base of every leave tree and on the downhill side. Place in a crevice if one is available on the downhill side.
- B. A horizontal **band** at least 2” wide must encircle the tree between 5 and 7’ above the ground.
- C. Paint marks shall be visible for a distance of at least 100’ in all directions until harvest operations are complete.

II. Mark to leave:

- A. **ALL live trees having a dbh \geq 21”.**
- B. **ALL Wildlife Trees having a dbh \geq 14”** : Trees with bird holes, large nests, *live snags* and trees with more cull material than sawlog material. That is when 51% or more of the tree does not contain 8 foot logs that are 40% sound.
- C. **ALL WL, PP, or WWP having Most Desirable (D1) characteristics.** Trees with D1 characteristics do not have any indicator of disease or poor form and they are not crowded. These shall be retained regardless of stocking level.
- D. **In order to meet the Stocking Level (Col. 3 of the DxPre Table) first mark trees defined as Most Desirable (D1) followed by trees defined as Less Desirable (D2).**

- 1. Most Desirable Trees/Suitable:** Trees that possess the following characteristics shall be the first choice for desirable leave trees:

- a. **Dominant and Co-dominant Preferred Species:** These trees are taller on the average when compared to other trees in the unit. The Preferred Species are in order of preference PP, WL, WWP, DF and WRC. WRC is not a preferred species in areas dominated by PP. When the preferred species does not possess desirable tree characteristics, *vigor/growth* is given preference.
- b. **Health:** With the exception of WL and WWP, foliage shall be dark green in color. The crown shall cover one third or more of the tree all the way around it. A healthy WL will have long straight limbs all the way around the tree for 20% or more of its height. Healthy trees are free of *severe insect or disease problems* and are not stressed. See definition of Severe Insect or Disease Problems in Appendix A.
- c. **Straight Bole:** The bole or stem of the tree shall be relatively straight and have a single terminal leader.
- d. **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.

- e. In addition to above described healthy dominant/co-dominant preferred species, healthy WWP \geq 4" dbh are also Most Desirable Trees.

2. Less Desirable Leave Trees also Suitable: When the average basal area 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: Preferred species with minor defect such as a minor crook, a small amount of animal damage, or mistletoe < *Hawksworth rating* 3.
- b. Intermediate preferred species followed by dominate or co-dominate ES, WH, & GF having desirable tree characteristics.
- c. Intermediate non-preferred species (ES,WH,GF,SAF,LPP) having desirable tree characteristics. Intermediate trees are approx. $\frac{1}{2}$ the height of dominate/co-dominate trees.
- d. Other Live Trees: Trees other than insect or disease damaged trees with at least 30% live crown and *height to diameter ratio* \leq 1:100.
- f. Forked Trees: Those trees with two or more terminal leaders.
- g. Physical Damage: Trees that have physical damage on less than half the bole circumference and less than three feet in length. Physical damage may be caused by equipment, falling trees, lightning, wind, animals, etc.

III. Vary the Density:

- A. The characteristics of available trees shall determine stocking level at most locations. In areas with mandatory leave trees (described in II.A.B.C), the stocking level may be high. How high will depend on how many of these trees exist. In areas with Most Desirable trees the basal area may be 20-40 ft²/ac higher than required average providing only Most Desirable and mandatory trees are marked. The amount of required leave trees and Most Desirable Trees will determine how many Less Desirable trees should be marked.
- B. There may be units where the stocking level will not be achieved due to a lack of suitable leave trees. This is acceptable providing the suitable trees are marked to leave. Suitable trees are those with characteristics described in E1 or E2 (above). Unsuitable trees are described in IV (below).
- C. In general, retain a higher BA within stands dominated by WRC and WH; lower BA within stands dominated by DF and PP.

IV. Do Not Mark A-I (below): An exception shall be made for required leave trees (II.A.B.C). Where clumps are required an exception would be made for E.

- A. Dead trees, hardwoods, or trees < 4" dbh.**
- B. Trees not expected to live for 10 years.**
- C. Trees with severe insect or disease problems**
- D. Species listed as Do Not Retain (Col 4).**
- E. Other species within 30' (stem to stem) of healthy Dominant or Co-dominant PP, WL or WWP.** This may be an individual or several of these species. i.e. Healthy PP, WL, WWP should be marked within 30' and beyond.
- F. WL and DF with a *Hawksworth Mistletoe rating* of 3 or more.** See definition in Attachment A.
- G. Conifer trees with a poor height to diameter ratio.** See definition in Attachment A.
- H. Trees within 50' of an *Aspen or Birch* stands.**
- I. WRC in areas dominated by PP and/or DF (i.e. dry sites).**

3. DxPre Table

Subdivision No. (Col 1)	Acres (Col 2)	Unit-average residual stocking (Col. 3)	Do Not Retain (Col. 4)	Comments (Col. 5)
1	11	110 ft ² /ac	LPP < 21" dbh	No Change from Leave-Tree Guidelines.
3	9	70 ft ² /ac	N/A	No Change from Leave-Tree Guidelines.
4	13	12 TPA	LPP < 21" dbh	The mistletoe rating is the only change from the Leave-Tree Guidelines. Remove WL with any mistletoe.
5	43	100 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
7	44	85 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
9	14	80 ft ² /ac	N/A	In this unit some LPP may need to be retained in order to meet Stocking Level. Healthy LPP that will likely increase diameter (younger/smaller) are preferable to the mature/larger LPP. LPP remains last on the species preference.
10	121	100 ft ² /ac	LPP < 21" dbh	The Leave-Tree Guidelines and Col. 3 and Col 4 do not apply to the 17 acres that have been mapped and ITM marked. This part of the subdivision is not available for marking. The Marking Guidelines, Stocking Level and Col. 5 apply to the remainder of the subdivision (104 acres).
17	85	110 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
18	48	100 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
19	22	n/a	LPP,GF,WH,ES < 20" dbh GF,WRC <18" dbh Except Wildlife Trees (II.B).	In Addition to All trees ≥ 21" dbh and those defined as Wildlife Trees (II.B), mark to leave all suitable PP, WL and WWP. Leave All suitable LPP, GF, WWH, ES ≥ 20" dbh and suitable GF, WRC ≥ 18" dbh. Unsuitable trees are those defined in Marking Guideline IV.
20	64	110 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
21	28	110 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
26	2	N/A	LPP < 21" dbh	Remove all blue painted trees and LPP <21" dbh. This subdivision is not available for marking.

DxPre Table Cont.				
Subdivision No. (Col 1)	Acres (Col 2)	Unit-average residual stocking (Col. 3)	Do Not Retain (Col. 4)	Comments (Col. 5)
32	40	80 ft ² /ac.	n/a	No Change from Leave-Tree Guidelines.
33	22	N/A	All trees meeting A.2 specification with the exception of PP and Orange Painted Trees.	This unit was leave tree marked (LTM) with Orange Tracer Paint (with the exception of the PP). All PP and Orange Painted Trees are leave trees. Other Leave-Tree Guidelines are not applicable. This subdivision is not available for marking.
34	10	30 TPA	n/a	No Change from Leave-Tree Guidelines.
36	36	90 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre.
37	51	100 ft ² /ac	LPP < 21" dbh	No Change from Leave-Tree Guidelines.
40	16	140 ft ² /ac	LPP < 21" dbh	No Change from Leave-Tree Guidelines.
42	60	100 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
43	69	100 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
54	54	110 ft ² /ac	LPP < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
55	85	110 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
56	32	80 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
58	11	80 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
59	65	90 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
60	18	110 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
62	142	110 ft ² /ac	LPP, GF < 21" dbh	In addition to the Leave-Tree Guidelines leave 2-3 <i>clumps</i> per acre
330	12	100 ft ² /ac	LPP < 21" dbh	No Change from Leave-Tree Guidelines.
590	24	90 ft ² /ac	LPP,GF < 21" dbh	In addition to the Leave-Tree Guidelines: leave 2-3 <i>clumps</i> per acre.