

Appendix A

Tee Timber Sale Project Design Criteria

The following are design features of the proposed action and describe the details of the timber sale cutting boundaries or actions that would be incorporated into the timber sale contract or post-sale plans or are legally-required through consultation with regulatory or permitting agencies and are therefore not optional:

<p>A density reduction thinning prescription for the uplands would be used to space the trees and accelerate the conifer growth rate. The thinning treatment would reduce stand density to an average of 90 to 150 trees per acre.</p>
<p>A riparian management zone, 340 feet on each side of perennial fish bearing streams and 170 feet on each side of perennial and intermittent streams, would be designated. Density reduction activities would be permitted within portions of the management zone. Cut trees would be directionally felled away from the streams.</p>
<p>Fifteen acres of one 15-year old conifer plantation within the Tee Timber Sale planning area would be pre-commercially thinned to accelerate conifer growth (Unit 41). A site-adapted/structure based silvicultural prescription will be used to produce a variable spacing of the leave trees. The thinning treatment would reduce the stand density to approximately 250 trees per acre.</p>
<p>Remnant legacy features (snags and large down logs) would be preserved whenever possible. In identified areas devoid of these features, snags and coarse woody debris would be created.</p>
<p>Units are configured and logging systems prescribed such that slopes steeper than 30 percent would be cable or helicopter yarded. Machinery would not be permitted on slopes steeper than 30 percent.</p>
<p>Within Riparian Reserves, hardwoods would only be cut or girdled for conifer release.</p>
<p>Trees felled within Riparian Reserves would be felled away from the stream, and those felled outside Riparian Reserves would be felled away from the Riparian Reserves.</p>
<p>Western hemlock (70%), and/or western red cedar (30%) would be planted on a 12' x 12' spacing within Riparian Reserves.</p>
<p>Native plant materials are the first choice in revegetation for restoration and rehabilitation where timely natural regeneration of the native plant community is not likely to occur.</p>
<p>Save topsoil on site from areas to be disturbed and replace over disturbed soil before replanting.</p>
<p>Vexar® tubing with 2 stakes should be installed 24-48 hours after the planting of the</p>

western redcedar to deter animal browsing.	
For ground-based logging systems, treetops attached to the last log would be yarded to the designated landings.	
All re-constructed roads would be designed to control surface road drainage to minimize erosion and sedimentation. All drainage structures would be designed to accommodate the 100-year flood and associated debris.	
Skyline logging would require a slack pulling carriage for lateral yarding. One-end suspension would be required, with full suspension through riparian areas.	
Prior to felling, skid trails would be pre-designated and approved for all ground-based equipment operations, and spaced a minimum of 150 feet apart. Existing skid trails and roads would be used if possible rather than creating new ones.	
Timber would be felled to lead to the skid trails.	
All equipment would be confined to approved temporary roads, skid trails and landings during yarding and brush disposal operations. Skidders would remain on approved skid trails and winch logs as necessary.	
To minimize the wounding (bark slough) of residual trees, restrict log skidding from April 15th to July 1st, except within units designated for helicopter logging systems. This does not apply to tree felling or slash piling activities.	
Buffers, in addition to 170' or 340' Riparian Reserves:	
Unit 1	90 ft. radius buffer, centered on <i>Corydalis aquae-gelidae</i> population located adjacent to spring on the northern edge of unit. During thinning operations, timber should be directionally felled away from these reserves.
Unit 5	Large-tree stand type where these sites occur was removed from the unit.
Unit 6	The single <i>Tetraphis geniculata</i> site on the southern edge of the unit will be protected by a 120 ft. radius buffer centered on the population.
Unit 8	90 ft. buffer centered on <i>Peltigera pacifica</i> population. During thinning operations, timber should be directionally felled away from known site, but may fall within reserve.
Unit 15	During thinning operations, timber should be directionally felled away from the known sites of <i>Peltigera pacific</i> .
Unit 16	<i>Tetraphis geniculata</i> on the northern side will be protected by a 75 ft. radius buffer centered on population.
Unit 18	75 ft. Riparian Reserve adjacent to the spring, and along the stream on the western boundary of the unit up to the crossing of FR 4104, and a 75 ft. Riparian Reserve along the stream located parallel to the the eastern boundary of the unit.

	During thinning operations, timber should be directionally felled away from these reserves.
Unit 19	75 ft. radius distance (centered on <i>Tetraphis geniculata</i> population) from harvest edge.
Unit 21	<i>Tetraphis geniculata</i> sites will be protected through implementation of 75 or 120 ft. buffers centered on populations, where appropriate (on the ground measurement will be required to determine proximity of sites to harvest boundaries, which will determine width of buffer).
Units 23 & 24	<i>Tetraphis geniculata</i> sites will be protected through implementation of 75 or 120 ft. buffers centered on populations, where appropriate (on the ground measurement will be required to determine proximity of sites to harvest boundaries, which will determine width of buffer).
Unit 28	90 ft. buffer centered on population. During thinning operations, timber should be directionally felled away from known <i>Peltigera pacific</i> site, but may fall within reserve.
Unit 29	50 ft. radius buffer centered on <i>Cetrelia cetrarioides</i> population. During thinning operations, timber should be directionally felled away from reserve. Maintain hardwood trees and shrubs along riparian corridor and adjacent to wetland.
Unit 39	Distance of <i>Tetraphis geniculata</i> population from harvest boundary should be measured to ensure that a 75 ft. radius distance from harvest edge will be maintained.
Unit 42	50 ft. radius buffer centered on <i>Cetrelia cetrarioides</i> population. During thinning operations, timber should be directionally felled away from reserve. Maintain hardwood trees and shrubs along small drainage.
Unit 48	Sites will be protected through implementation of 75 or 120 ft. buffers centered on <i>Tetraphis geniculata</i> populations, where appropriate (on the ground measurement will be required to determine proximity of sites to harvest boundaries, which will determine width of buffer).
Unit 50	Distance of <i>Tetraphis geniculata</i> population from harvest boundary should be measured to ensure that a 75 ft. radius distance of population from harvest edge will be maintained.
In coordination with Wildlife project design criteria, leave large woody debris within the stand, preferably within 300 meters of sites of <i>Tetraphis geniculata</i> – this will provide future habitat for this species.	
Control specified invasive plants at helicopter landings, culvert replacement sites, and along Tee Timber Sale access roads for 1/2 mile preceding areas of ground disturbance (i.e. staging areas, and harvest units adjacent to roads), to 1/2 mile following area of ground disturbance, and within timber harvest units, as specified below:	
During the season before the ground disturbing phase of project implementation begins,	

<p>weeds shall be hand pulled, bagged and disposed of outside of Gifford Pinchot National Forest boundaries (unless Forest NEPA analysis allows for alternative treatment). Hand control efforts should occur before invasive species have set seed for the year (May or June).</p>
<p>During seasons of project implementation weed re-occurrences along access roads shall be controlled as specified above.</p>
<p>For two field seasons following project completion, weed re-occurrences at helicopter landings, and along access roads, shall be controlled as specified above. In addition, harvest units shall be surveyed for invasive plant establishment and/or encroachment. If new invasive plant populations are located within harvested units invasive plants shall be controlled, as specified above.</p>
<p>Minimize road maintenance clearing zones, as much as safety regulations will allow, to maintain shady conditions that help minimize invasive plant population expansion.</p>
<p>During years of project implementation, conduct road brushing activities during spring-early summer, before seed heads mature, in order to prevent formation and release of viable seeds that could be dispersed along hauling corridors by vehicles, and/or when wind-borne seeds could disperse into newly harvested Units.</p>
<p>Treat known site of <i>Polygonum cuspidatum</i> site twice annually, starting the year prior to that in which ground-disturbing activities will occur, until population is extirpated. During project implementation, avoid passing ground-based equipment over or near the site, as small fragments of this plant can re-establish at new sites.</p>
<p>Cut down 4-5 holly trees that were found growing along the lower slopes of Unit 21. If additional holly trees are found within Tee Timber Sale Units during harvest, cut them down.</p>
<p>During the season before the ground disturbing phase of project implementation begins, and during seasons in which the project is being implemented, hand pull perennial pea from along FS Road 4205524 where it occurs, including above Unit 35 (unless NEPA analysis allows for alternative treatment). Return to site for two subsequent years following completion of project for follow up treatment, as necessary. This mitigation will prevent perennial pea from being dispersed along haul routes to areas with fresh ground disturbance caused by timber harvest.</p>
<p>During the season before the ground disturbing phase of project implementation begins, and during seasons in which the project is being implemented, hand pull <i>Arctium minus</i> (common burdock) where it grows in dense patches along FS Road 42 (unless NEPA analysis allows for alternative treatment). This mitigation will prevent common burdock from being dispersed along haul routes to areas with fresh ground disturbance caused by timber harvest.</p>
<p>During the season before the ground disturbing phase of project implementation begins, and during seasons in which the project is being implemented, hand treat scotch broom site located near Unit 29. Plants shall be hand pulled (unless NEPA analysis allows for alternative treatment). Return to site for two subsequent years following completion of</p>

<p>project for follow up treatment, as necessary.</p>
<p>Units 6, 8, 25, 48, and 49 would be located a minimum of 100 feet away from Forest Road 42. The objective is to avoid the appearance of disturbance (stumps and slash) as viewed by motorists on Road 42. This also negates the need LRMP required mitigation to soften the appearance of disturbance.</p>
<p>Tread on the Summit Springs Trail #173 will be re-established to standard (e.g. 24 inch width) if inadvertently disturbed by logging operations in Units 43 or 44 to maintain the integrity of the Summit Springs Trail.</p>
<p>Following log yarding in Units 43 and 44, logging slash within 10 feet on either side of Summit Springs Trail #173 will be pulled back and dispersed. Slash pull back would also occur on this trail between Units 43 and 44 (Divot Unit 28). The objective is to maintain this system trail by removing slash impeding trail travel and reducing the appearance of disturbance.</p>