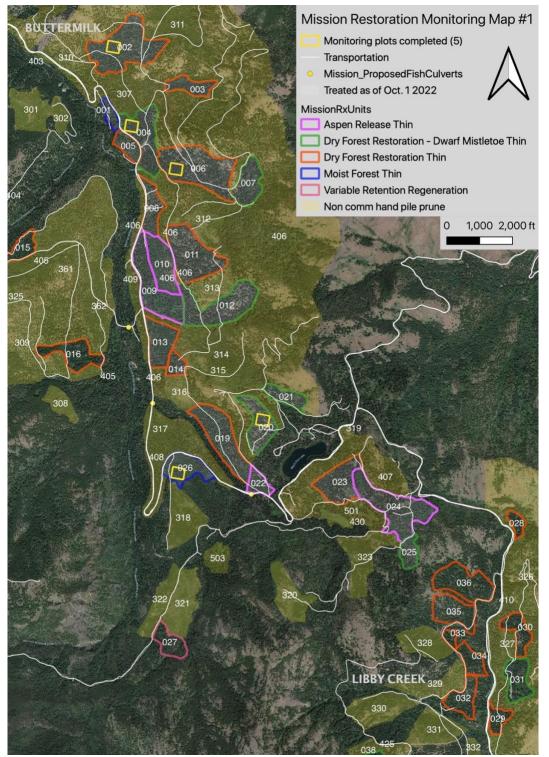
Treatment Monitoring Report #1 - Mission Restoration Project

Methow Valley Ranger District, Okanogan-Wenatchee National Forest - Winthrop, WA Monitoring and report by Sam Israel, Methow Valley Citizens Council October 28, 2022



Map 1. Northern half of the Mission Restoration Project planning area

Summary

- Three acre monitoring plots were installed in 5 different units with varying prescriptions in the Mission Restoration Project. All retained trees were tallied using a "Quick Map" method.
- In all 5 units, vegetation treatments shifted the structure and composition of the forest. In some cases, density was reduced to below target levels and larger trees were not clearly favored. Both ladder fuels and dwarf mistletoe were significantly reduced. Some small- to medium-sized snags were retained.
- 3. In the monitoring plots, post-harvest spatial patterns could be characterized as having low variability. Two unit's monitoring plots, unit 20 and 26, were found to have low tree densities and had very little to no variability. They consist of well-distributed, individual trees and openings. The monitoring plots in the other three units consisted of trees that were somewhat uniformly spaced. The proportion of widely spaced individual trees was high and the number of small clumps (2-4 trees) was low, while the number of medium and larger clumps was very low. While each of these 5 units had openings, those did not fall in the 3 acre monitoring plots. The plots are representative of areas outside of major openings.

Introduction

The Okanogan-Wenatchee National Forest Restoration Strategy provides guidance for restoration treatments that seek to increase forest resilience and achieve other ecological functions. The Strategy describes a desired management approach that, in its words, "aims to enhance the resilience and sustainability of forests through treatments that incrementally return the ecosystem to a state that is within a historical range of variability of conditions tempered by potential climate change impacts." The Strategy also stresses the importance of monitoring that can inform adaptive management to continually improve management approaches.

To better understand ongoing forest health treatments and support adaptive management, the Wilderness Society provided funding to monitor the short- and intermediate-term changes resulting from treatments that are part of the Mission Restoration Project in the Methow Valley Ranger District. Of particular interest is the extent to which treatments resulted in spatially variable conditions created by clumps, openings, and complex patches. The monitoring evaluates stand-level forest structure, composition and the number of residual trees per acre. The primary goal of this monitoring effort and report is to provide a data-driven, objective assessment of treatments that can be used by partners to inform future projects. It should be noted that prescriptions have multiple objectives in addition to restoring the forest's historical spatial pattern, retaining larger trees, releasing aspen, reducing ladder fuels, and reducing dwarf mistletoe. It is not always possible to achieve all of these objectives in every stand simultaneously. The results of this monitoring effort should be interpreted in this light.

Field Data Collection and Inquiry

A total of 5 treatment units were evaluated (Map 1). Unit selection was done after a thorough review of project documents and the subsequent DxP prescription. The 5 units span a range of dry forest thin treatment types and all of the units had been harvested. Aspen Release Thin, Variable Retention Regeneration and non-commercial fuel reduction prescriptions will be monitored in an additional repot. To assess the post-harvest conditions, a method of field data collection called "quick mapping" was used to identify clumping levels, the number of trees per acre and the basal area. LeFevre et al (2020) and others have used similar monitoring protocols and methods to evaluate the treatment effectiveness of meeting the prescription's stated objectives, such as achieving density, composition and spatial variability targets.¹ 3-acre plots are relatively effective in capturing the spatial variability and density of larger contiguous areas.

In each of the 5 units a 3-acre square plot was identified at random. In this case, a simple quick map obtained sufficiently accurate data to quantify basic stand-level spatial patterns. Clumps are groups of connected trees within a specified inter-tree distance measured from tree to tree. A 20' fixed inter-tree distance, is the distance provided in EA project documents that defines clumping. Trees that have no neighbors within 20' or do not share interlocking canopies, are termed an 'individual.' Retained Douglas fir trees over 7" dbh and ponderosa pine trees over 9" dbh were identified in the field using this fixed distance. For individual trees (no neighbors within 20'), dbh and species were recorded. For trees in clumps, tree count (clump size), an average diameter of those trees included in the clump and their species were recorded. Results includes a post-harvest TPA, an estimated residual basal area and a basic clumping score. Clumping scores correspond to the percent of trees retained in clumps inside the monitoring plot. Retained snags were identified in the monitoring plot. Detailed species lists are available upon request. Data were collected using the ICO APP. This APP was designed for Quickmap forest monitoring (see https://scholarworks.umt.edu/ico/).

Additional inventory plots need to be considered to verify that conditions within the 3-acre square monitoring plots are consistent with those found in the full spatial extent of the treatment units.

¹ LeFevre, Miles E., et al. "Evaluating restoration treatment effectiveness through a comparison of residual composition, structure, and spatial pattern with historical reference sites." *Forest Science* 66.5 (2020): 578-588.

Results

A summary of post-harvest conditions can be reviewed below, Table 1 entitled "Plot summary data." Table 2 provides provisions from the DxP prescription for comparison to those in the Mission Restoration Project Environmental Assessment (EA) Appendix A, "Proposed Thinning and Prescribe Fires Treatments."

Unit #	Post-harvest TPA	DxP TPA	ΕΑ ΤΡΑ	Clumping score^	Residual BA
2	18	30-40	30-50	Low (14%)	35
4	17	20-30	30-50*	Low (12%)	21
6	17	30-40	30-50	Medium (31%)	40
20	12	20-30	20-30~	None	23
211 (26)	13	Unknown	40-50	None	16

Table 1. Plot summary data

*Assuming warm-dry PAG, ~assuming hot-dry PAG, ^ percent of trees clumped inside monitoring plot

<u>Unit 2</u> is located along the northeast boundary of the Project Area and has been treated with the Dry Forest Restoration Thin prescription and as a Warm-Dry plant associations per the DxP prescription. The EA specifies post-harvest trees per acre (TPA) as a range from 30-50 residual trees. Actual post-harvest TPA is 18. The number of clumps is low to minimal and 12% or 7 trees out of 56 were retained in small, 2-3 tree clumps. This unit was mainly flat ground and included in the monitoring plot are a number of areas with significantly displaced soils from rutting. This unit was chosen for monitoring after it was decided that this unit looked more variable than others following an initial visual reconnaissance.

Unit 4 is located along the 4300 road and has been treated with the Dry Forest Restoration Thin with Dwarf Mistletoe Reduction prescription (DFDMT). A plant association is not defined and the DxP prescription designated this unit to be treated with the DFDMT prescription to achieve a 20-30 post-harvest TPA. Actual post-harvest TPA is 17 in this unit. The number of clumps is low to minimal and 14% or 7 trees out of 51 were retained in small, 2-3 tree clumps. This unit was located on flat ground and included some openings that were not captured in the monitoring plot.

<u>Unit 6</u> is located adjacent to Unit 4, just above the 4300 Rd and has been treated the Dry Forest Restoration Thin prescription and as a Warm-Dry plant association per the DxP prescription. The EA specifies post-harvest TPA in the range from 30-50 and the DxP specifies a range of 30-40 residual trees per acre. Actual post-harvest trees per acre is 17 TPA. Clumping levels are low to medium and 31% or 19 trees out of 61 were retained in small, 2-3 tree clumps. The plot included one larger 5 tree clump composed of smaller diameter trees. There were no snags present in the monitoring plot. This unit was on a slope and included elevated levels of mechanical damage and bole rub. This unit was chosen for monitoring after it was decided that this unit looked more variable than others following an initial visual reconnaissance.

<u>Unit 20</u> is centrally located adjacent to the Black Pine Lake and has been treated with the Dry Forest Restoration Thin with Dwarf Mistletoe Reduction (DFDMT) prescription. A plant association is not defined and the DxP designated this unit to be treated with the DFDMT prescription to achieve a 20-30 post-harvest TPA. Actual post-harvest tree per acre is 12. All of the 37 trees retained post-harvest are individuals, with no trees were left in clumps. 5 snags are included in the TPA count (so closer to 10 or 11 live TPA). Snags are small diameter and weakened trees. This unit was located along a gentle slope.

<u>Unit 211</u> is located along the 4300 road and has been treated. It is unclear what prescription was used to treat this unit. This unit is not listed as part of the DxP prescription. This unit corresponds to the EA Unit 26, which specifies it to be a Moist Forest Thin prescription with a post-harvest TPA range of 40-50. Actual post-harvest trees per acre is 13. All of the 41 trees retained post-harvest are individuals, with no trees left in clumps. Unit 26 is linked to the project's purpose #3, vegetation composition and structure. This unit is located on a gentle slope.

EA Unit number	2	4	6	20	211 (26)
Unit size (acres)	48	20	40	12	unknown
Monitoring plot size (acres)	3	3	3	3	3
Post-harvest trees per acre, current condition	18	17	17	12	13
DxP TPA	30-40	20-30	30-40	20-30	unknown
EA approximate average number of trees per acre per	30-50	20-30, assuming hot- dry*	30-50	30-50, assuming warm- dry	40-50
Clump size bins and tree per target (Individuals, 2-4, 5-9,10-14, 15-30+)	49/32, 7/27,0/27, 0/21, 0/0	44/27, 7/23, 0/19, 0/8, 0/0	33/32, 13/23, 6/23, 0/14, 0/0	37/27, 0/19,0/19, 0/12, 0/0	41/45, 0/38, 0/38, 0/30, 0/0
Percent tree clumped	14%, assuming 35 TPA (DxP average)	12%, assuming 25 TPA (DxP average)	31%	None	None
Post-harvest BA estimate	36	21	40	23	16
Rx	Dry Forest Restoration Thin	Dry Forest Restoration Thin with Dwarf Mistletoe Reduction (DFDMT)	Dry Forest Restoration Thin	Dry Forest Restoration Thin with Dwarf Mistletoe Reduction (DFDMT)	Moist Forest Thin

Table 2. Plot data: post-harvest TPA, clumping levels, Environmental Assessment and DxP prescription provisions

EA	Page 341	Page 343	Page 341	Page 343	Page 344
Prescription		C C			C
provisions	Maintain and restore	This treatment is	Maintain and restore	This treatment is similar	Conifers of
	elements of historic forest	similar to the	elements of historic forest	to the previously	merchantable diameter
	stand structures including	previously described	stand structures including	described dry forest	would be harvested to
	tree density, large and old	dry forest restoration	tree density, large and old	restoration thin	reduce subalpine
	trees, species composition,	thin treatment with an	trees, species composition,	treatment with an	fir/Engelmann spruce
	and spatial patterns	emphasis on reducing	and spatial patterns	emphasis on reducing	forest cover and
	(including tree clumps,	Douglas-fir dwarf	(including tree clumps,	Douglas-fir dwarf	promote Douglas-fir and
	individual trees, and canopy	mistletoe infection	individual trees, and canopy	mistletoe infection levels	lodgepole pine forest
	openings) to increase stand	levels in treated stands.	openings) to increase stand	in treated stands.	cover in two stands
	and landscape resiliency to		and landscape resiliency to		totaling an estimated 37
	natural disturbances including	The Dry Forest	natural disturbances including	The Dry Forest	acres (units 26 and 27).
	forest insect attacks, tree	Restoration Thin	forest insect attacks, tree	Restoration Thin harvest	This treatment would be
	diseases, and wildfires.	harvest treatment	diseases, and wildfires.	treatment would be	applied in mesic and dry
	Desired residual tree density,	would be applied	Desired residual tree density,	applied throughout areas	mixed conifer stands
	species composition, and	throughout areas that	species composition, and	that are adequately	stocked with subalpine
	spatial patterns within stands	are adequately stocked	spatial patterns within stands	stocked with vigorous	fir, Engelmann spruce,
	are derived from data	with vigorous and	are derived from data	and disease-free trees to	Douglas-fir, and
	collected in reference stands	disease-free trees to	collected in reference stands	meet density, species	lodgepole pine trees in
	located in the eastern	meet density, species	located in the eastern	composition, and spatial	multiple canopy layers
	Washington Cascades (Nature	composition, and	Washington Cascades (Nature	pattern treatment	(young forest multistory
	Conservancy et al. 2016;	spatial pattern	Conservancy et al. 2016;	objectives.	stand structure).
	Ohlson and Schellhaas. 2002;	treatment objectives.	Ohlson and Schellhaas. 2002;		
	Ohlson 1996) and previously		Ohlson 1996) and previously	Young and mature trees	Portions of these stands
	implemented projects on the	Young and mature	implemented projects on the	(with an estimated age of	have experienced
	Methow Valley Ranger	trees (with an	Methow Valley Ranger	less than 150 years) 20	lodgepole pine mortality
	District.	estimated age of less	District.	inches DBH and smaller	caused by mountain
		than 150 years) 20		infected with dwarf	pine beetle attacks.
	Dwarf mistletoe and root	inches DBH and smaller	Dwarf mistletoe and root	mistletoe would be	With the exception of
	disease may be present in	infected with dwarf	disease may be present in	harvested throughout	subalpine fir, the largest
	individual trees or small	mistletoe would be	individual trees or small	treatment units to	and most vigorous
	pockets and are not	harvested throughout	pockets and are not	achieve dry forest	conifers (with regard to
	widespread throughout	treatment units to	widespread throughout	restoration thin tree	height, bole diameter
	treated stands. Anticipated	achieve dry forest	treated stands. Anticipated	retention objectives	and live crown volume)
	tree mortality caused by post-	restoration thin tree	tree mortality caused by post-	(including heterogeneous	of the most preferred

harvest fuels treatments	retention objectives	harvest fuels treatments	spatial patterning of	species present would
would be taken into	(including	would be taken into	residual trees) and	be retained in clumps of
consideration during	heterogeneous spatial	consideration during	reduce the proportion of	various sizes to achieve
development of timber	patterning of residual	development of timber	infected trees in treated	the target or desired
marking guidelines to achieve	trees) and reduce the	marking guidelines to achieve	stands.	residual stocking level of
desired live tree density	proportion of infected	desired live tree density		approximately 40 to 50
levels.	trees in treated stands.	levels.	Vigorous trees with low	trees per acre.
			infection levels (dwarf	
Target numbers of trees to	Vigorous trees with low	Target numbers of trees to	mistletoe infection	Tree species retention
remain will vary within	infection levels (dwarf	remain will vary within	ratings generally of 2 or	preference in
harvest units based on plant	mistletoe infection	harvest units based on plant	less; Hawksworth 1977)	descending order is
association group and would	ratings generally of 2 or	association group and would	would be retained where	Douglas-fir followed by
be reduced based on root	less; Hawksworth 1977)	be reduced based on root	needed to achieve tree	ponderosa pine,
disease and the presence of	would be retained	disease and the presence of	retention objectives.	Engelmann spruce and
dwarf mistletoe. Hot-dry	where needed to	dwarf mistletoe. Hot-dry	Infected trees 21 to 24	lodgepole pine. Standing
ponderosa pine and Douglas-	achieve tree retention	ponderosa pine and Douglas-	inches DBH with an	dead and down
fir 20-30 TPA, Warm-dry and	objectives. Infected	fir 20-30 TPA, Warm-dry and	estimated age of less	lodgepole pines in
warm-mesic Douglas-fir 30-50	trees 21 to 24 inches	warm-mesic Douglas-fir 30-50	than 150 years would be	excess of snag and large
TPA and Cool-dry Douglas-fir	DBH with an estimated	TPA and Cool-dry Douglas-fir	harvested on a case by	woody debris retention
and subalpine fir 40-50 TPA.	age of less than 150	and subalpine fir 40-50 TPA.	case basis consistent with	objectives would be
	years would be		stand treatment	removed for firewood or
The desired spatial pattern or	harvested on a case by	The desired spatial pattern or	objectives.	other forest products.
horizontal arrangement of	case basis consistent	horizontal arrangement of	Treatment objectives	All trees greater than 24
residual trees within stands	with stand treatment	residual trees within stands	include reducing future	inches DBH and all trees
can best be described in	objectives.	can best be described in	susceptibility to Douglas-	21 inches DBH and
terms of individual trees, tree	Treatment objectives	terms of individual trees, tree	fir dwarf mistletoe	larger with an estimated
clumps, and canopy openings	include reducing future	clumps, and canopy openings	infection in treated	age of 150 years or
(Churchill et al. 2014; Larson	susceptibility to	(Churchill et al. 2014; Larson	stands. Infected trees 21	greater (based on
and Churchill 2012; Larson et	Douglas-fir dwarf	and Churchill 2012; Larson et	inches DBH and larger	criteria described in Van
al. 2012). A clump of trees is	mistletoe infection in	al. 2012). A clump of trees is	would be retained as	Pelt 2008) would be
defined as two or more trees	treated stands.	defined as two or more trees	isolated individuals or	retained.
in close enough proximity	Infected trees 21	in close enough proximity	discrete clumps with the	
that a portion of their crowns	inches DBH and larger	that a portion of their crowns	removal of smaller	Live defective trees and
are interlocking.	would be retained as	are interlocking.	Douglas-firs located	dying trees would be
Approximately 65 percent of	isolated individuals or	Approximately 65 percent of	within 50 feet to reduce	retained as needed to
residual trees in dry forest	discrete clumps with	residual trees in dry forest		provide cavity

restoration thin harvest units	the removal of smaller	restoration thin harvest units	the spread of dwarf	dependent habitat.
would be retained in clumps	Douglas-firs located	would be retained in clumps	mistletoe (Schmitt 1997).	Complex patches which
of various size with a spacing	within 50 feet to	of various size with a spacing		include large snags, live
of 20 feet or less between	reduce the spread of	of 20 feet or less between	Removal of suppressed,	defective trees, large
leave tree boles.	dwarf mistletoe	leave tree boles.	diseased or dwarf	and old trees, or large
Approximately 35 percent of	(Schmitt 1997).	Approximately 35 percent of	mistletoe susceptible	dwarf mistletoe infected
residual trees would be		residual trees would be	trees may result in post-	trees would be retained.
retained as individual trees	Removal of suppressed,	retained as individual trees	harvest conifer stocking	
located more than 20 feet	diseased or dwarf	located more than 20 feet	levels up to	No aspen or other
away from all other leave	mistletoe susceptible	away from all other leave	approximately 25 percent	deciduous broadleaf
trees.	trees may result in	trees.	less than the respective	trees would be
	post- harvest conifer		dry forest restoration	harvested. Aspen clones
Canopy openings would be	stocking levels up to	Canopy openings would be	thin (DFR) desired	one quarter acre and
comprised of those areas	approximately 25	comprised of those areas	residual tree stocking	larger in size included
where the distance between	percent less than the	where the distance between	numbers displayed	within harvest units 26
residual tree boles is greater	respective dry forest	residual tree boles is greater	above.	and 27 would receive
than 3 times the maximum	restoration thin (DFR)	than 3 times the maximum		the Aspen Release
"clumped" tree distance (60	desired residual tree	"clumped" tree distance (60	Canopy openings larger	(Aspen) harvest
feet). Canopy openings,	stocking numbers	feet). Canopy openings,	than two acres created	treatment previously
generally expected to be one	displayed above.	generally expected to be one	by harvest and post-	described in this
third acre in size or less,		third acre in size or less,	harvest fuels treatments	document.
would occur on	Canopy openings larger	would occur on	would be assessed to	
approximately 20 percent of	than two acres created	approximately 20 percent of	determine if	
treatment areas.	by harvest and post-	treatment areas.	reforestation with pines	
	harvest fuels		or other non-susceptible	
Live defective trees and dying	treatments would be	Live defective trees and dying	species is needed to meet	
trees would be retained as	assessed to determine	trees would be retained as	treatment objectives.	
needed to provide cavity	if reforestation with	needed to provide cavity		
dependent habitat. Complex	pines or other non-	dependent habitat. Complex		
patches which include large	susceptible species is	patches which include large		
snags, live defective trees,	needed to meet	snags, live defective trees,		
large and old trees, or large	treatment objectives.	large and old trees, or large		
dwarf mistletoe infected		dwarf mistletoe infected		
trees would be retained.		trees would be retained.		

es 21"-24" may be cut if y are competing with a ter tree, with in 20 feet of rger tree or has mistletoe ection Hawksworth 2 or ater. nove all Douglas-fir ected with mistletoe wksworth rating 3 or ater) between 7 and 23.9"	Trees 21"-24" may be cut if they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	Trees 21"-24" may be cut if they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe (Hawksworth rating 3 or	Trees 21"-24" may be cut if they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	units or provisions are included in the contract.
y are competing with a ger tree, with in 20 feet of rger tree or has mistletoe action Hawksworth 2 or ater. hove all Douglas-fir acted with mistletoe wksworth rating 3 or ater) between 7 and 23.9"	cut if they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	if they are competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	included in the contract.
ier tree, with in 20 feet of rger tree or has mistletoe action Hawksworth 2 or ater. nove all Douglas-fir acted with mistletoe wksworth rating 3 or ater) between 7 and 23.9"	competing with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	with a larger tree, with in 20 feet of a larger tree or has mistletoe infection Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	
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nove all Douglas-fir acted with mistletoe wksworth rating 3 or ater) between 7 and 23.9" nning from below, remove	Hawksworth 2 or greater. Remove all Douglas-fir infected with mistletoe	Remove all Douglas-fir infected with mistletoe	Remove all Douglas-fir infected with mistletoe	
ected with mistletoe wksworth rating 3 or ater) between 7 and 23.9" nning from below, remove	Remove all Douglas-fir infected with mistletoe	infected with mistletoe	infected with mistletoe	
wksworth rating 3 or ater) between 7 and 23.9" nning from below, remove	infected with mistletoe			
ater) between 7 and 23.9" nning from below, remove	infected with mistletoe	(Hawksworth rating 3 or		
nning from below, remove			(Hawksworth rating 3 or	
		greater) between 7 and 23.9"	greater) between 7 and	
	(Hawksworth rating 3		23.9″	
	or greater) between 7	Thinning from below, remove		
additional trees to reach	and 23.9"	all additional trees to reach	Thinning from below,	
desired TPA listed in		the desired TPA listed in	remove all additional	
le 3 below. Average TPA	Thinning from below,	Table 3 below. Average TPA	trees to reach the desired	
ll be determined on a per	remove all additional	shall be determined on a per	TPA listed in Table 3	
t basis. When Douglas fir	trees to reach the	unit basis. When Douglas fir	below. Average TPA shall	
tletoe is present with in	desired TPA listed in	mistletoe is present with in	be determined on a per	
subdivision, 75% of the	Table 3 below. Average	the subdivision, 75% of the	unit basis. When Douglas	
ve trees per acre target	TPA shall be	leave trees per acre target	fir mistletoe is present	
be acceptable. When	determined on a per	will be acceptable. When	with in the subdivision,	
ining, trees incorporated	unit basis. When	thinning, trees incorporated	75% of the leave trees	
n the fence lines may not	Douglas fir mistletoe is	with the fence lines may not	per acre target will be	
cut.	present with in the	be cut.	acceptable. When	
	subdivision, 75% of the	The contractor many of the in	thinning, trees	
• •	•		-	
	0		•	
utting.	thinning, trees			
	incorporated with the		The contractor may, at	
	fence lines may not be		their expense designate	
	cut.		trees prior to cutting.	
er	ontractor may, at their nse designate trees prior tting.	ontractor may, at their nse designate trees prior tting.	ontractor may, at their nee designate trees prior tting.	ontractor may, at their nse designate trees prior tting.leave trees per acre target will be acceptable. When thinning, trees incorporated with the fence lines may not beThe contractor may, at their expense designate trees prior to cutting.incorporated with the fence lines may not beThe contractor may, at their expense designate trees prior to cutting.incorporated with the their expense designate trees prior to cutting.incorporated with the their expense designate

		The contractor may, at their expense designate trees prior to cutting.		Cut all trees with Douglas fir mistletoe less than 24.0" DBH	
		Cut all trees with Douglas fir mistletoe less than 24.0" DBH			
Names and date	SI, MD 9/22	SI, KD 10/1	SI, MD 9/22	SI, KD 10/1	SI, MD 9/22

*updated to reflect site condition

Photos



Unit 2 post-harvest monitoring plot



Unit 2 post-harvest monitoring plot and greater unit



Unit 4 post-harvest monitoring plot



Unit 6 post-harvest monitoring plot



Unit 6 post-harvest monitoring plot



Unit 20 post-harvest monitoring plot



Unit 20 post-harvest conditions



Unit 211 (26) post-harvest monitoring plot



Unit 211 (26) post-harvest condition