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Reports-Whitman
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"Effectiveness of Western Yellow Pine"

Whitman National Forest Service Oregon

January 13, 1916.

By

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The reason for this study was to determine the accuracy of past deductions made by reconnaissance parties for the percentage of defect in various stands in this region and also to form a basis upon which to make future calculations in Western Yellow Pine in the Blue Mountains.

Three different areas were used in the study, two on the W. H. Eccles sale and one on the area sold to the Hilgard Lumber Co.

Messrs. Donaldson and Waterbury the scalers on the W. H. Eccles sale and Hilgard sales, respectively, helped materially in the conduct of this study. They not only scaled the logs removed but after the company had completed an area they went over it and scaled and tallied all cull logs, small merchantable tops, broken chunks, etc.

Tract 1.

This area of approximately 100 acres was situated in the SW ¼ of Sec. 2, T. 11 S., R. 36E., W. M., on the area sold to the Hilgard Lumber Co.

The principal tree was Western Yellow Pine with a small amount of Western Larch, Douglas Fir, and Lodgepole Pine in mixture.

A portion of the stand was on a flat, near the logging railroad, on which the timber was short, one to two logs per tree, and where there was a large amount of defect. Several of the trees did not produce a single, merchantable log. On the slopes and in the draws, the timber was of a better quality, with longer boles, and less defect. The average quality for the entire area was far below normal and the author believes that an estimator will seldom encounter a more defective tract in this region. The logs were small, running 7 ½ per thousand, but were very mature.

The soil was shallow with much loose rock and I believe that this poor site condition has a direct enfluence upon the soundness of the timber growing thereon. This was not only noticed on this area but in many other places, especially on several rocky, south slopes on the Baker White Pine Lumber Co. area. The timber here would be of good size and possessed fairly clear boles, but would be very rotten.

The amount of breakage was also kept on this tract but was negligible, there being 95 board feet which would amount to about one tenth of one per cent. The topographic features would indicate a large per cent of breakage, being rocky on the lower end and steep on the upper. Tall, slender boles and density of stand are the big factors in considering breakage and these conditions were lacking here as the timber was short, small size and very open.

Tract 1 – Hilgard Lumber Co.

Deductions in Scale of Logs Removed From Woods.

Tabulated According to Defect.

M. ft. B. M.

Species	Heart Rot	Stump Rot	Fire Scar	Crook	Split and Broken Ends	Pitch	Check and Shake	Total
Western Yellow Pine	76.05	2.03	4.25	.87	.90	.93	.24	85.27
Western Larch	.34	.68	1.78	.08	.26	--	[o]2.66	5.80
Douglas Fir	.13	.32	1.07	.27	.05	--	.61	2.45
Lodgepole Pine	.03	--	.04	--	--	--	--	.07
Totals	76.55	3.03	7.14	1.22	1.21	.93	3.51	93.59

[o]Shake

	W.Y.P	W. L.	D. F.	L. P.	Totals
Scale for Tract 1	732.23	103.63	52.41	3.35	891.61
Defect of Logs Removed	85.27	5.80	2.45	.07	93.59
Defect left in Woods	40.64	6.01	.72	--	47.37
Totals	858.14	115.43	55.58	3.42	1,032.57

Percentage of defect for W. Y. P.	14.7%
Percentage of defect for W. L.	10.2%
Percentage of defect for D. F.	5.7%
Percentage of defect for L. P.	2.0%
Average Percentage of defect	13.6%

Tract 2.

Tract 2 was logged during 1914 and comprised 95 acres consisting of the SE ¼ of Forty No. 123, S ½ of No. 124, all of No. 132, E ½ of No. 133 and a portion of No. 143. This area sloped to the north at the extreme south end of what is locally known as Donkey Draw. From this area was cut 2,

123,48 M. ft. giving an average stand of 22.35 M. ft. per acre. This figure shows that there was a comparatively heavy stand. This was of good quality and had little defect as shown by the tables.

The field data on this area was not separated as in the other two tracts, but because of the large scale, the defect percent is thought well worth while to record.

Total Defect Removed and Left on Ground.

W. Y. P.	W. L.	D. F.	W. F.	L. P.	Total
98.63	2.5	2.49	1.33	.84	105.79

This amount of defect applied to the gross scale plus the amount left in the woods gives 4.7% for all species.

Tract 3.

This area contained approximately 75 acres on the W. H. Eccles sale, and comprised most of the # ½ of Forties No. 103 and No. 118 and portions of Forties No. 104 and No. 117 as numbered on the timber sale map to this company. The main drainage was to the north; the area taking in both slopes of the dry draw. The pine was of good quality with a medium, heavy stand of inferior species.

The area was logged during the month of July, 1915, cutting 1,171.50 M. of the three principal species. The logs run 5 1/5 to the M.

Tract 3—W. H. Eccles Lumber Co.

Deductions in Scale of Logs Removed from Woods.

Tabulated According to Defect.

M. ft. B. M.

	Heart Rot	Stump Rot	Fire Scar	Crook	Pitch and Catface	Check and Shake	Totals
Western Yellow Pine	8.14	3.36	2.48	.70	.45		15.13
Western Larch	.24	.37	.47	.03	.08	.36	1.55
Douglas Fir	.71	1.29	.91	.12	--	.29	3.32
Totals	9.09	5.02	3.86	.85	.53	.65	20.00

	W.Y.P.	W.L.	D.F.	Total
Scale for month of July, 1915	838.68	107.51	225.31	1,171.50
Defect of logs removed	15.13	1.55	3.32	20.00
Defect left in the woods	32.73	1.44	4.36	38.53
Totals	886.54	110.50	232.99	1,230.03

Percentage of defect for W. Y. Pine	5.4%
Percentage of defect for W. Larch	2.7%
Percentage of defect for D. Fir	3.4%
Average percentage of defect	4.8%

Summary

The estimation of defect in any stand is largely a matter of judgment coupled with the ability to observe certain signs of unsoundness in a tree, as fungus fruiting bodies, rotten limbs, spike tops, etc. However, it is hoped that this study will assist in establishing the limits for defectiveness as the author believes that seldom will a mature area be found of any extent in the Blue Mountains, with less than 4% defect for Yellow Pine nor more than 15%.

One interesting point brought out is the low defectiveness of Douglas Fir and Western Larch as I am informed that reconnaissance parties have deducted as much as 12% for similar stands.

Lodgepole Pine as expected showed little defect; on Tract 1, two percent, and on the other areas practically nothing.

It is realized that this study is only preliminary and I believe a more intensive study should be inaugurated at some future date.

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