December 31, 1917

Descriptive Report
of the

POWDER RIVER TIMBER SURVEY PROJECT

Minam National Forest

1917

Alfred A. Griffin

And

Charles J. Conover,

In Charge

Contents

DESCRIPTIVE REPORT

INTRODUCTION

The Powder River timber survey project covers 28,604 acres of government land, badly broken up by nearly the same amount of patented land. It is located on the southwest side of the Minam National Forest between 3500 and 6450 feet elevation, about twenty miles north of Baker, Oregon. The area lies between the Catherine Creek-Big Creek divide on the north, the Eagle Creek Canyon on the east, and the Forest boundary on the south and west. The cruise approximates 180 million feet B.M.

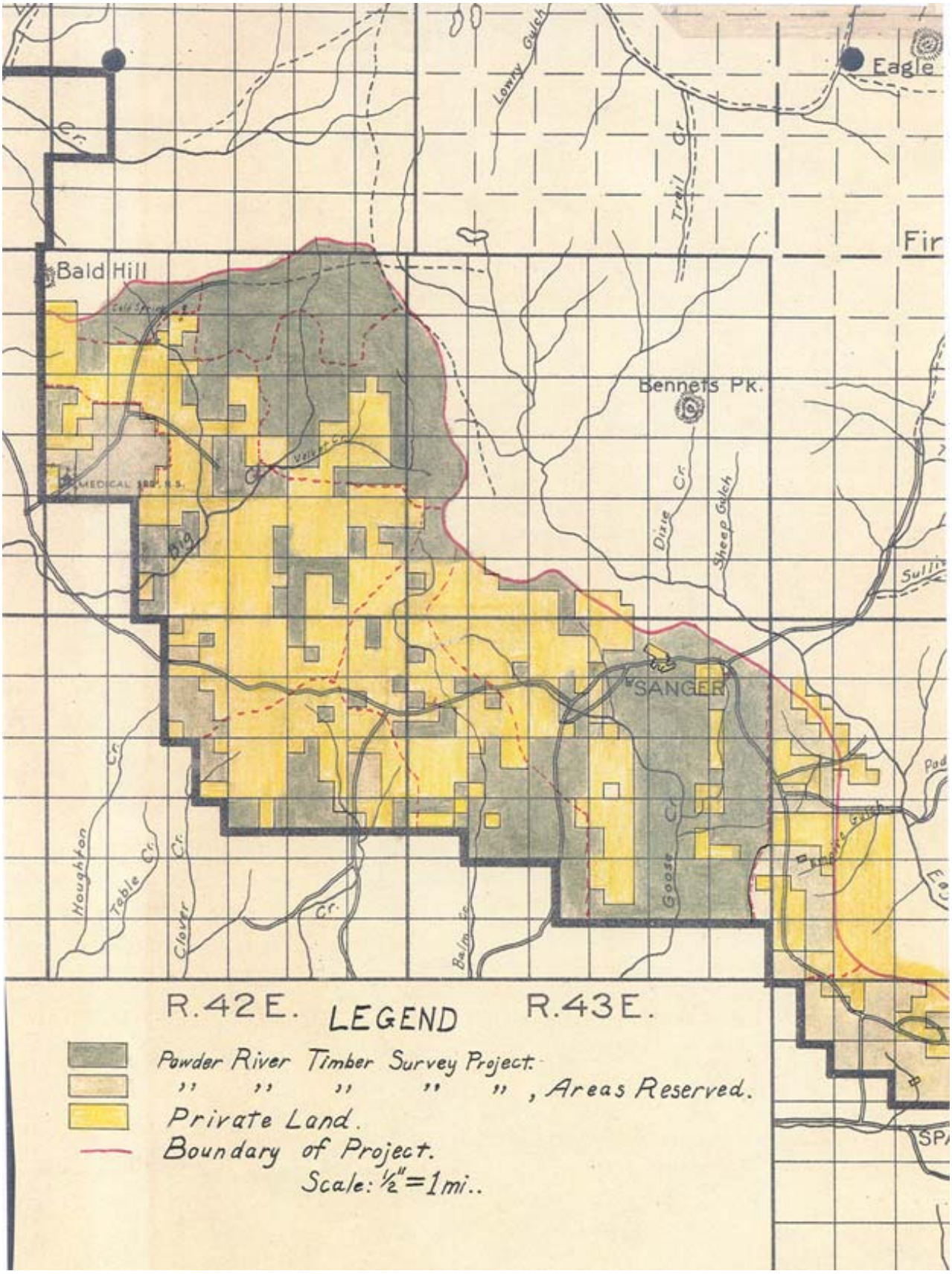
The project is the direct result of application for a timber sale by Mr. Alex. Allardyce of Spokane, Washington, who is interested in the associated private timber land. Work was begun August 30 and completed October 15, 1917, by a party averaging eight men. The temporary men were Field Assistants E.H. Chapman, H.W. Elofson, G.E. Field, E.G. Mason, L.J. Tuttle, C.W. Watson, and A.P. Wood, the last two for four weeks only. The yearlong men were A.A. Griffin, chief of the party, and C.J. Conover, in charge during October.

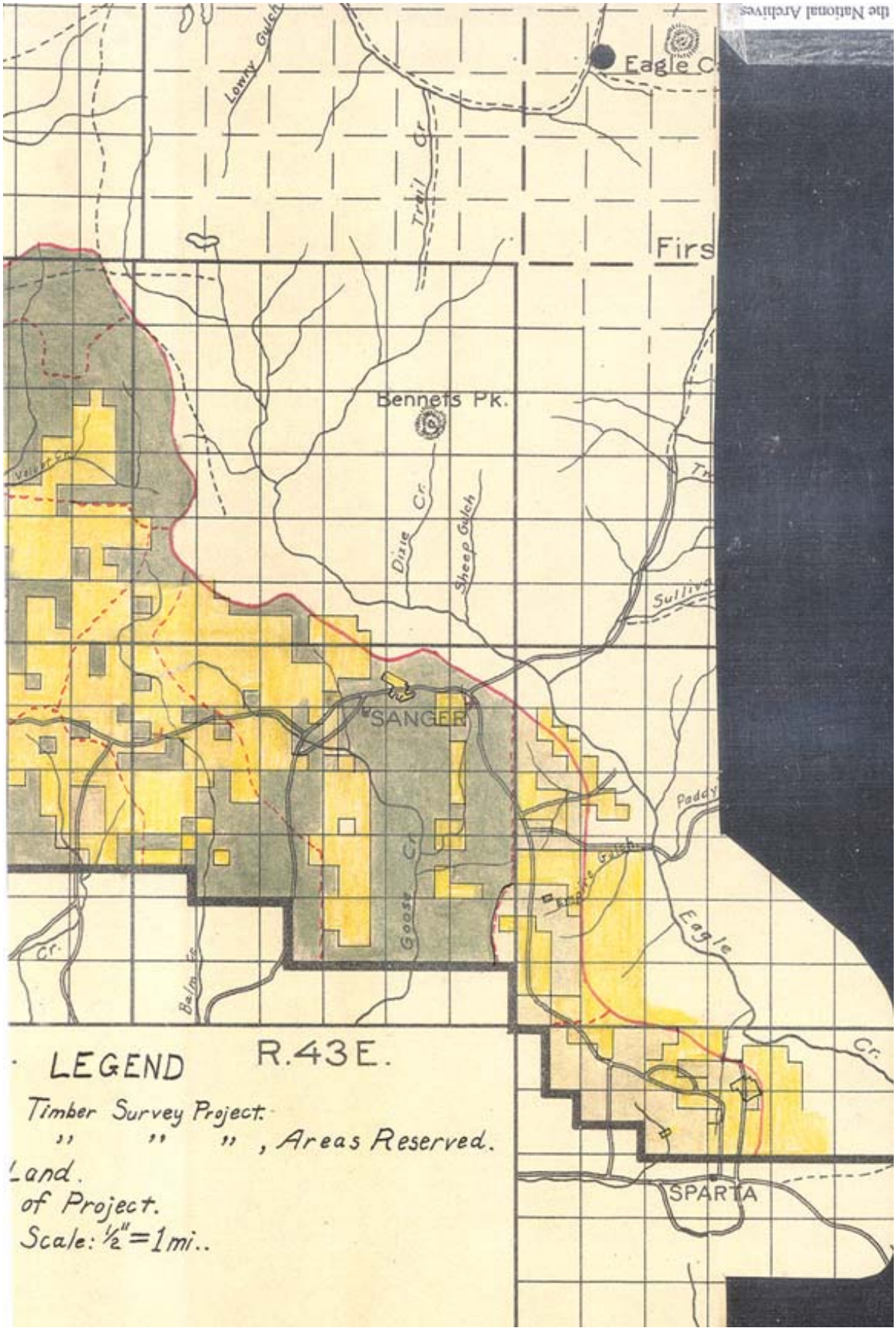
The estimates were computed by Miss Erma F. Bell and Mr. G.A. Bright of the District Office. Especial mention should be made of the assistance given by District Ranger J.F. Irwin, with his thorough knowledge of the country, and by Supervisor Barnes, both in Baker and in his frequent trips to the camps of the timber survey crew.

In marketing the government timber, the large areas of private land intermixed must also be taken into account, practically all of the large bodies of National Forest stumpage being so located that they should be logged together with some of the adjacent private stumpage. The sale units can vary considerably with the ability of the operator to obtain this stumpage. As the requirements of nearby ranchers must also be taken into consideration, it will probably be advisable to set aside suitable areas for their use. Thus alienations and local demands, as well as topography and merchantability, are the bases for division into logging chances as shown in the maps and tabulations.

STATUS AND OWNERSHIP

The 25,633 acres of patented land within this project consists principally of timber patents, with nine mining claims, and two mill sites, several homesteads and 720 acres of school land. There are two homestead entries pending and a great many mining claims, all but a few of which have been long abandoned. Other private interests include about ten miles of the Sparta irrigation ditch, a short stretch of the Hogem ditch, the Balm Creek irrigation reservoir, three small sawmills with timber sales, five miles of unused transmission and telephone line of the Eagle River Electric Power Co. (at present in a receivership), about fifty salt troughs built by the local stock association, and a cooperative fire-lookout house on Sparta Butte. The old Union-Cornucopia stage road, now a county road, traverses the project east and west. It and the branch roads to the sawmills, the Basin Mine and Powder Valley, are passable for automobiles during the summer. There are many branch woods roads of varying length and quality.





The Forest Service telephone line extends from Medical Springs Ranger Station east to Eagle Creek Forks and south to the Balm Creek reservoir. Third class Forest Service trails follow the telephone line where it is not along a road, and extend several miles up Big and Velvet Creeks from their junction. The Sand Pass Sheep Driveway follows the Eagle Creek divide and goes south between Balm and Goose Creeks to the Forest boundary.

Of the two administrative withdrawals on the project, Sanger has only an unused pasture, while Medical Springs is headquarters for the District Ranger, has a house and three other buildings, a telephone and pasture.

SILVICAL DESCRIPTION

Conditions are in general typical of many Blue Mountain regions, with thin soil and frequent grass areas, trees are short and rocky ridges frequent. About one quarter of the timber is seriously decadent; the remainder is equally divided between thrifty and mature.

Reproduction under the old stand is evenly divided between the four grades of stocking – full, two-thirds, one-third, and zero, with a little advantage to the "two-thirds" class. Yellow pine is best represented, especially on the east side, where it makes up two-thirds of the total number of seedlings. On the tract as a whole, however, Douglas fir with 29%, white fir 14%, larch 8%, etc., make up a slight majority.

The largest stand per Section is 6,433 M.B.M. of which 5,031 M is yellow pine, on Sec. 16, T 7 – 43. Though a few government forties have a stand of 15 M per acre, the average for the entire project is 6.3 M per acre, of which 4.7 M is yellow pine and the rest principally Douglas fir.

Yellow Pine Type

The mature western yellow pine type includes 15,706 acres, over one half of the project. The trees are comparatively small and usually of only 3 or 4 logs height. Trees 40 inches d.b.h., or 6 logs in merchantable length are scarce and usually decadent. Douglas fir and white fir are commonly found in admixture, the Douglas fir being more common, especially on the rocky, shallow-soiled ridges. Western larch does not occur frequently or in large trees, though the trees which are present are of good form. The composition of the type is best shown by a stand table taken from cruising tallies.

Table I

The Number of Trees per Acre by Diameter Classes
in Representative
Western Yellow Pine Type

(Averaged from five selected 4-acre tally sheets)

D.B.H. Inches	W.Y.P.	D.F.	W.L.	W.F.
4 – 7	2	1		1
8 – 11	1	1		
12	1			1
14	1			
16	1	1		
18	1		1	
20	2			
22	1	1		
24	1			1
26	1			
28	1	1		
30	1			
32				
34	1			
Total trees	15	5	1	3
Vol. Ft. B.M.	5,070	1,900	200	300

The areas of yellow pine poles and saplings are but 358 and 171 acres respectively, and usually the result of old cuttings rather than of natural agencies. Douglas fir reproduction is usually intermixed but in smaller proportions.

Larch-Fir Type

The area of mature larch-fir type is 4,301 acres, about one seventh of the total area of the project. This type occurs in irregular patches mainly at high elevations on the north and east slopes, and seldom over a half-mile wide. The trees are generally small but with a total merchantable height of 80-120 feet. Douglas fir is the leading species below the 5500 foot contour and occasionally up to 6000 feet, where white fir is more abundant. Douglas fir is especially predominant on, and going east from, Goose Creek. Here the trees are taller and more thrifty. The composition of the average stand of mature larch-fir type is shown in Table 2.

A mixture with lodgepole occurs most frequently on the north end of the project and with Engelmann spruce on the northeast side.

Immature larch-fir type occurs on an old burn in the north end of the project, to the extent of 1,121 acres well stocked with larch, white fir, and Douglas fir respectively in the order of their abundance.

Table 2

Number of Trees per Acre by Diameter Classes in Representative Larch – Fir Type.

(Averaged from five selected 2-acre tally sheets)

D.B.H. Inches	W.Y.P.	D.F.	W.L.	W.F.	E.S.	L.P.
4 – 7	1	3	2	4	1	1
8 – 11	1	4	3	3	2	2
12		3	2	3	1	1
14	1	2	2	2		
16		3	1	2		
18	1	2	1	2		
20		1		1	1	
22		1		1		
24		1		1		
26	1	1				
28				1		
30		1				
32	1					
Total No.	6	22	11	20	5	4
Vol. Ft. B.M.	2,770	3,940	1,050	1,850	550	40

Lodgepole Type

There are 72 acres of thrifty mature lodgepole pine in with the larch-fir on Balm Creek. The 489 acres of immature lodgepole, on an old burn on the Cold Spring and Big Creek areas, are thrifty and fully stocked with a six-year-old stand. A large number of old poles still standing make a serious fire danger, however.

Sagebrush Type

There is but little sagebrush in the timber. Most of the 2,980 acres of this type is at the lower timberline near the Forest boundary. The brush is generally low, with considerable grass and weeds.

Grassland

Open areas occur at frequent intervals on the rough "scab" ridges of most of the area. Because of the very shallow soil and long droughts, the growth is usually sparse. It consists principally of

weeds, wild onion, sedges, and pine, bunch and other grasses, with scattering sagebrush, choke cherry and other shrubs. Rocks, however, cover most of the surface on all of the 3,374 acres.

Damage

Fires have burned over all of this area repeatedly, resulting in a large amount of accumulated damage in fire-scarred butts, fungus and insect infestations, destroyed humus and deficient reproduction. Most of the burns are twenty to forty years old and older. There are also two small areas on Velvet Creek burned over in 1917 on one of which, in fir-larch timber, most of the trees appear to be dead over about 80 acres. The big fire of 1910 denuded an area of about one thousand acres on the high flat between Big and Lick Creeks. This is rapidly being recovered with lodgepole and larch-fir, the natural forest types. These severe burns include but a small percentage of the total area, the greater damage resulted from the old fires which repeatedly covered the entire area. An average of 25% of the yellow pines still show scars from these old burns. Other species are less apt to retain scars.

Insects are present in the usual small amounts of scattered infestation "normal" to the region. In addition there are small but serious attacks bordering the slashings at Perry's sawmill. These can be controlled by immediate utilization in a proposed sale to the mill. Similarly other small attacks can be covered by free use and S-22 sales. No other important infestations were noted. The broken and irregular distribution of the forest types is probably a deterring factor, but which may be counterbalanced by the shallow soil.

Fungus damage or conk is, as usual, very prevalent in the white fir and to a less extent in Douglas fir. Larch and the smaller pines appear to be sound. Top rot in yellow pine is not so common as heart rot, the spike-topped trees being generally pitchy but sound. The average allowance for defect in yellow pine is about 8%.

Mistletoe is a serious damage to the western larch, as it has already killed many of the larger trees. Although the damage is very serious and the infested trees are a considerable danger to the rest of the forest, it appears that the damage has been almost as great for many years past. To mature yellow pine, the brooming by mistletoe seems to be of less immediate danger, as it occurs principally at the ends of branches, but on the smaller saplings the deformities have rendered many trees valueless. Douglas fir and some lodgepole also show serious attacks, usually on the older trees.

Cuttings are present on all but the least accessible parts of the project. The west side of the Medical Springs chance (near Medical Springs) has already yielded a large amount of free use material and more is required each year for posts, firewood and construction on the ranches of the valley below. The same is true of the south side of the Sparta chance. Prospectors and some of the mines, formerly also cut public timber in many places. Timber sales to the three existing sawmills are comparatively small now, but gradually increasing.

Windfall is of little present importance on this area. A few scattered ridge-top yellow pines have been thrown, and some down trees are the result of fire scars and high winds combined. There are no patches of heavy windfall not the result of fire.

LOGGING DATA

Undergrowth in the yellow pine type is very light to moderate. It consists of yellow pine and Douglas fir reproduction of all sizes but mostly small, with scattered willow and alder along the creeks. Most of the area has a thin cover of grass. In the larch-fir type there is more reproduction, and on upper Big Creek considerable large huckleberry with snowbrush on the higher sites. The litter and down timber is usually thick enough to hinder, but not prevent, getting through with a horse.

Windfall is quite light at present and negligible exception that it must be guarded against in marking trees for cutting.

Rock outcrops are found on all sharper ridges in both ledge and boulder form, and in many cases will seriously hinder logging operations. Broken rock is so frequent as to be practically universal on the entire area. It will add to the expense of logging the steep slopes, but on the gentle slopes is not important.

The area to be logged should be settled definitely before the method of operation is decided upon. The alienated land is reported still to be in small holdings, and the north and southeast portions of the block are expensive railroad chances. As there are several possible lines of approach, any of which could be used, the choice will depend upon the area to be cut over.

The total stumpage taken annually in small sales to local mills and free use permits is so large that an ample future supply must be assured. The area reserved for this purpose must also be considered.

In 1917, on the entire Minam National Forest, 4,756 M ft. B.M. were sold or taken under free use permits, more free use and S-22 business being done on the Minam than on any other Forest in District 6. Approximately 800 M ft. came from this project, and a demand for at least this amount can be anticipated in the future.

RECOMMENDATIONS FOR MANAGEMENT

The local needs for timber can be met by reserving the following areas or their equivalent:

Medical Springs Logging Chance
Empire Logging Chance
Sparta Logging Chance
And in T 7 E, R 42 E:
W ½ Sec. 13)
NE ¼ NE ¼ Sec. 23) North of Gilkison's Mill
SW ¼ SW ¼ Sec. 24)
W ½ Sec. 4) on the Medical Springs Road
Sec. 9 & 16)

The Medical Springs chance contains 1,408 acres of government timberland on which are 5,653 M of yellow pine and 1,142 M of other species, principally Douglas fir, as shown in Table 4. Blocked off by private holdings, it lies on the heads of Bazine Creek and Pawnee Gulch nearest to the ranches on Lower Bazine and Big Creeks. The utilization can be very close as the Douglas fir and larch are needed for fence posts and the yellow pine is preferred for fuel. Later it may be possible to dispose of white fir for this purpose too. This timber, while immediately

accessible by wagon road to the ranches on lower Big Creek, is but partly accessible to a possible railroad on upper Big Creek. The east side, however, is closely associated with the rest of the Big Creek timber. The timber on the chance as a whole is no more than enough to supply the present local demand of nearly 200 M per annum during the first cutting cycle, at the end of which other timber areas will be available if needed.

The Empire and Sparta logging chances, containing 3,862 acres of government timber, with 15,745 M of yellow pine and 4,348 M of other species, mostly Douglas fir and larch, as given in Table 4, are similarly located across a divide from a possible railroad along Goose Creek, but do lie along an excellent and well traveled road leading to Sparta and Eagle Valley, a large farming community which will probably demand more and more fuel and fencing directly from the forest, and lumber from Perry's mill on the east end of this block. A second possible source of timber for Eagle Valley is found on Summit Creek which is at present reached by a poor road only. Summit Creek is particularly suited to local use because it is a small unit separated by steep ridges from the large watersheds on each side.

The three government forties in W ½ Sec. 4, and the sixteen forties of government land in Sec. 9 and 16 are near ranches and have 894 M of timber, all yellow pine, in a position difficult to log by railroad, but most accessible to nearby settlers. While these areas are probably not sufficient to entirely supply the local timber needs, the next most accessible areas are privately owned for one to three miles up into the forest and can be drawn upon for local supplies if necessary until, and probably to some extent after, they are cut over.

The seven forties near Gilkison's Mill are the closest to the road to Keating and the Clover Creek valley. They hold a stand of 1,412 M of yellow pine and 368 M of other species, principally Douglas fir, which is best situated for logging to the mill and valley below rather than to a railroad on Balm Creek.

With the above exceptions, it is believed that the bulk of the timber cruised can well be included in either one or two large sales.

The marking rules which are standard for District 6, East Side, can be used here and probably a percentage higher than usual, marked as the reproduction and pole stand are generally good. Especial effort will be needed to market all the diseased trees possible. Because of the accessibility to local demand, it may be possible to dispose of waste trees, tops, etc., in the valley and thus secure unusually close utilization.

Scattering brush after logging, without burning, should be tried out on some of the rocky open ridges of this project. Burning the brush and litter, even where absolutely necessary because of high fire danger, is still an expensive waste of good humus material and necessarily involves the damage and destruction of some reproduction. Fire lanes can be left in the draws to lower fire hazard. Some insect damage, however, is to be expected.

The grazing interests of this area are also important as it is a well used spring and fall cattle range. Over fifty salt troughs and several water troughs have been built by the Forest Service and Cattle Associations together.

Recreation uses of this area are not yet important, nor are they likely to be in the near future. More attractive places are numerous on Eagle Creek which is, however, reached by a wagon road through this area. The timber along this road should be reserved for conservative local use.

Watershed protection is important because of the irrigation interests, and must be maintained by careful grazing and conservative logging. The open areas on the project are apparently too rocky and dry to be recommended as possible planting sites; the forage on them is of low value as well.

STATISTICAL SUMMARY

In computing the timber estimates of this project, the Blue Mountain Volume Table, by log lengths, was used for yellow pine. For other species special tables were constructed from height measurements and curves made during the progress of the project, and applied to the general volume table for the District 6, East Side, species.

The following tabulations summarize the estimate by sections, logging chances, and townships, including the areas of the several types and the estimate of snags now standing.

Table 3. THE STAND OF TIMBER IN EACH LOGGING CHANCE BY SPECIES

Logging Chance	Stand in M ft. B.M. by Species, and Total								Acres N.F. land
	Yellow pine	Douglas fir	Western larch	White fir	Engelman spruce	Lodgepole pine	Alpine fir	All species	
Balm Creek	11,268	2,936	1,629	377		37		16,247	2,918
Big Creek	14,878	3,139	1,068	246	50	91		19,472	3,851
Clover Creek	4,741	901	95	51				5,788	1,611
Cold Spring	992	1,553	549	175	5	17		3,291	763
Empire Gulch*	9,725	2,532	250	143				12,650	1,695
Goose Creek	44,886	14,158	2,723	2,343	318	67		64,495	7,693
Medical Springs*	5,653	955	187					6,795	1,408
Sparta*	6,020	1,356	66	1				7,443	2,167
Upper Big Cr.	4,837	4,262	1,815	2,985	953	47	106	15,005	2,696
Velvet Creek	15,180	7,443	2,337	2,945	963	189	33	29,090	3,842
Entire project:	118,180	39,235	10,719	9,266	2,289	448	139	180,276	28,644

* Entire chance reserved for local needs

(The estimate from the extensive reconnaissance of 1912 includes the alienated land as well as the government land. The stand is given as 314,256 M ft. B.M. on 52,123 acres, or 6.0 M per acre, compared with 6.3 M per acre from the timber survey on government land only).

Table 4. SUMMARY OF TYPE AREAS BY LOGGING CHANCES

Name of Type	Areas of Types, in Acres, in each Chance										Total Area by Forest Types
	Balm Creek	Big Creek	Clover Creek	Cold Spring	Empire Gulch	Goose Creek	Medical Spring	Sparta	Upper Big Creek	Velvet Creek	
Yellow pine, Mature-	1,299	1,954	719	17	1,241	5,333	936	1,255	869	2,083	15,706
Yellow pine, Poles-		27	58		31	73	73	96			358
Yellow pine, Seedlings-		46	22		39	50	14				171
Larch-Fir, Mature	311	390		183	105	1,187			744	1,381	4,301
Larch-Fir, Immature-	33	123		453			7	11	492	2	1,121
Lodgepole, Mature -	72										72
Lodgepole, Immature-	60	98		110					221		489
Brush,-					72						72
Grassland,-	873	158	136		247	1,038	208		370	344	3,374
Sagebrush,-	270	1,055	676			5	166	816		32	3,020
Net Area N.F. Land	2,918	3,851	1,611	763	1,695	7,693	1,408	2,167	2,696	3,842	28,644
Patented Area	3,272	9,565	2,800	0	1,254	5,695	607	1,280	0	1,160	25,633
Gross Area	6,190	13,416	4,411	763	2,949	13,388	2,015	3,447	2,696	5,002	54,277

Table 5. SUMMARY OF TIMBER ESTIMATE BY TOWNSHIPS AND SPECIES

(In M feet Board Measure)

Township and Range	Yellow pine	Douglas fir	Western larch	White fir	Engelmann spruce	Lodgepole pine	Alpine fir	Total of Project
5 – 42	176	124		71				371
6 – 42	34,123	12,713	5,147	5,025	1,515	285	106	58,914
6 – 43	9,763	8,316	1,182	2,634	746	88	33	22,762
7 – 42	6,605	1,224	501	160		37		8,527
7 – 43	52,954	13,138	3,609	1,233	28	38		71,000
7 – 44	8,539	2,364	214	142				11,259
8 – 44	6,020	1,356	66	1				7,443
Total	118,180	39,235	10,719	9,266	2,289	448	139	180,276

The National Forest land only is considered. But five sections in the project are complete, and all of these contain open areas.

Table 6. ESTIMATE OF TIMBER IN T 6 S, RANGE 42 E
(In M feet B.M.)
BY SECTIONS AND SPECIES

Section	Yellow pine	Douglas fir	Western larch	White fir	Engelmann spruce	Lodgepole pine	Alpine fir	Total
1	484	555	370	1,315	134	32	106	2,996
2	1,901	1,103	485	579	348	2		4,418
3	747	763	130	229	7			1,876
4	89	119	64	33				305
5	444	679	162	29		4		1,318
6	6	122	119	15		4		266
7	1,540	336	51	9		4		1,940
8	567	484	200	113	5	9		1,378
9	1,382	483	180	117	22	2		2,186
10	1,936	797	312	189	85	2		3,321
11	1,987	1,030	821	782	451	30		5,101
12	1,561	1,663	792	1,065	436	118		5,635
13	1,008	608	153	210	14			1,993
14	2,545	804	134	125	7	22		3,637
15	2,386	345	59	8				2,798
16	1,725	248	117	3	1			2,094
17	1,127	187	7					1,321
18	387	18						405
19	1,029	230	7					1,266
20	3,110	520	173					3,803
21	657	32						689
22	1,407	128	116	4				1,655
23	1,332	144	84	55				1,615
24	1,174	246	90	65	4			1,579
25	759	329	127	35	1	16		1,267
27	338	60	4	1				403
28	702							702
29	66							66
32	148	23						171
34	405	104	93	11				613
35	1,174	553	297	33		40		2,097
Total	34,123	12,713	5,147	5,025	1,515	285	106	58,914
T 5-42 S. 35	176	124		71				371

Table 7. ESTIMATE OF TIMBER IN TOWNSHIP 6 S., RANGE 43 E.
(In M feet B.M.)
BY SECTIONS AND SPECIES

Section	Yellow pine	Douglas fir	Western larch	White fir	Engelmann spruce	Lodgepole pine	Alpine fir	Total
7	749	478	146	372	4		33	1,512
18	1,431	904	76	333	68	16		2,828
19	2,038	2,060	392	420	340	11		5,261
30	2,232	1,643	248	408	44	32		4,607
31	536	76	51	3				666
32	585	1,354	54	508	8			2,509
33	2,135	1,791	180	582	282	29		4,999
34	327	10	35	8				380
Total	9,763	8,316	1,182	2,634	746	88	33	22,762

Table 8. ESTIMATE OF TIMBER IN TOWNSHIP 7 S, RANGE 42 E
(In M feet B.M.)
BY SECTIONS AND SPECIES

Section	Yellow pine	Douglas fir	Western larch	White fir	Engelmann spruce	Lodgepole	Total
1	102	74	107	55		18	356
2	Not cruised – three 40's in this Section						
4	742						742
9	543						543
11	172	49	13	9			243
12	691	249	299	54		19	1,312
13	1,350	322	4	42			1,718
14	2,056	500	78				2,634
16	36						36
22	299						299
23	614	30					644
Total	6,605	1,224	501	160		37	8,527

Table 9. ESTIMATE OF TIMBER IN TOWNSHIP 7 S, RANGE 43 E
(In M feet B.M.)
BY SECTIONS AND SPECIES

Sections	Yellow pine	Douglas fir	Western larch	White fir	Engelmann spruce	Lodgepole pine	Total
1	294	196	8	24			522
2	1,032	537	23	220			1,812
3	1,225	357	86	87	4	4	1,763
4	547	380	26	29			982
5	167	76					243
6	168	68	83	1		11	331
7	909	519	408	64		21	1,921
8	613	162	18	16			809
9	1,175	407	213	85			1,880
10	1,788	922	236	108	5	2	3,061
11	2,503	1,113	67	80			3,763
12	2,168	1,062	72	22	19		3,343
13	4,331	745	198	141			5,415
14	2,763	796	194	105			3,858
15	984	469	180	41			1,674
16	5,031	866	452	84			6,433
17	2,382	499	501	9			3,391
18	216	73	25	4			318
19	97	9					106
20	2,877	274	73	2			3,226
21	1,755	393	22	3			2,173
22	1,535	457	127				2,119
23	3,044	644	219	20			3,927
24	5,138	695	274	85			6,192
25	4,551	448	92	2			5,093
26	3,681	747	12	1			4,441
27	1,581	223					1,804
28	339	1					400
Total	52,954	13,138	3,609	1,233	28	38	71,000

Table 10. ESTIMATE OF TIMBER IN T 7 S, R 44 E
(In M feet B.M.)
BY SECTIONS AND SPECIES

Section	Yellow pine	Douglas fir	Western larch	White fir	Totals
7	756	395	21	98	1,270
18	1,667	519	66	41	2,293
19	2,434	386	61	2	2,883
30	2,666	941	50	1	3,658
31	1,016	123	16		1,155
Total	8,539	2,364	214	142	11,259

Table 11. ESTIMATE OF TIMBER IN T 8 S, R 44 E
(In M feet B.M.)
BY SECTIONS AND SPECIES

Section	Yellow pine	Douglas fir	Western larch	White fir	Totals
3	259	174	33		466
4	1,001	377	6		1,384
5	3,104	602	26		3,733
6	220				220
8	697				697
9	570	182			752
10	169	21	1		191
Total	6,020	1,356	66	1	7,443

Table 12. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Township 6 South, Range 42 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
1	340	270	150	760
2	580	300	160	1,040
3	310	95	135	540
4	315	160	55	530
5	2,925	550	20	3,495
6	420			420
7	375	90	65	530
8	1,120	60	30	1,210
9	320	100	100	520
10	755	340	110	1,205
11	1,970	670	100	2,740
12	2,115	860	210	3,185
13	315	260	80	655
14	305	80	20	405
15	100	90	80	280
16	100	50	80	230
17	50	65	75	190
18	40		20	60
19	50	30	10	90
20	295	130	90	515
21	10	20		30
22	200	80		280
23	90	170	60	320
24	330	115	120	565
25	310	160		470
27	740	235	40	1,015
28	65	30		95
34	130	60		190
35	670	210	20	900
Totals	15,355	5,280	1,830	22,465

Table 13. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER PER SECTION

Township 7 South, Range 43 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
1	50	75	20	145
2	250	130		380
3	180	85	30	295
4	80	70		150
6	90	20		110
5	10	10		20
7	265	70	30	365
8	120	30	10	160
9	90	80	10	180
10	230	220	30	480
11	250	210	120	580
12	510	345	25	880
13	590	330	50	990
14	210	250	30	490
15	160	150	110	420
16	630	390	230	1,250
17	145	80	50	275
18	10	10	20	40
19			5	5
20	145	40	100	285
21	70	65	45	180
22	75	80	100	255
23	140	130	180	450
24	265	190	100	555
25	150	210	100	460
26	190	340	160	690
27	50	20	30	100
28	15	15	15	45
Totals	4,970	3,665	1,600	10,235

Table 14. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Township 7 South, Range 44 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
7	135	90		225
18	190	95	20	305
19	90	140	50	280
30	270	180	20	470
31	85	25	10	120
Totals	770	530	100	1,400

Table 15. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Township 6 South, Range 43 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
7	260	245	15	520
18	490	230	20	740
19	1,200	510	50	1,760
30	850	360	35	1,245
31	40	20		60
32	420	300	90	810
33	1,210	640		1,850
34	75			75
Totals	4,545	2,305	210	7,060

Table 16. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Township 8 South, Range 44 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
3	90	25		115
4	70	100		170
5	90	110	50	250
6		10		10
8		10	20	30
9	20		20	40
10		20	10	30
Totals	270	275	100	645

Table 17. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Township 7 South, Range 42 East				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
1	270	90	10	370
2	240	140	10	390
4		10		10
9			15	15
11	60	10		70
12	320	110		430
13	60	60		120
14	180	100	20	300
23		15		15
Totals	1,130	535	55	1,720

Table 18. THE NUMBER OF SNAGS OVER 16 FEET HIGH AND 15 INCHES IN DIAMETER, PER SECTION

Project Summary				
Section	D.B.H. 15" – 20"	D.B.H. 21" – 30"	D.B.H. 31"+	Totals
6 S – 42 E	15,355	5,280	1,830	22,465
7 S – 42 E	1,130	535	55	1,720
6 S – 43 E	4,545	2,305	210	7,060
7 S – 43 E	4,970	3,665	1,600	10,235
7 S – 44 E	770	530	100	1,400
8 S – 44 E	270	275	100	645
Totals	27,040	12,590	3,895	43,525

CONCLUSION

The project includes 28,644 acres of government land, broken up by 25,633 acres of private land on the north side of Powder River in the Blue Mountain region. The stand is the typical yellow pine, white-fir-larch-Douglas fir and lodgepole types, while the rocky ridges and open grass areas are also distinctive of the region. The cruise is 180,000 M board feet, consisting of 2/3 yellow pine, 1/5 Douglas fir, and the remainder of western larch, white fir, Engelmann spruce, lodgepole pine, and alpine fir in the order named.

The management is complicated by needs of surrounding ranches and miners, and the inclusion of so much patented land. It is thought that this will make a feasible sale, however, upon the return of equipment costs to normal.

/s/ Charles J. Conover
Forest Assistant

/s/ Alfred A. Griffin
Forest Examiner

January 26, 1918

Cost Report

POWDER RIVER TIMBER SURVEY

Minam National Forest

1917

Charles J. Conover,

And

Alfred A. Griffin,

Chiefs of Party.

SUMMARIZED COSTS
OF THE
POWDER RIVER TIMBER SURVEY PROJECT

I. Conditions

The Powder River area was cruised during the latter part of the 1917 season by the timber survey party which had previously completed projects on the Wallowa and Columbia National Forests, and two field assistants transferred from the Santiam crew. Thus all of the seven field assistants had already had from two to ten weeks' experience at the same kind of work. Forest Assistant c. J. Conover, who received his appointment during the project, had experience in previous years.

The region is fairly well traversed by roads, so that tow of the three camps could be reached by wagon. The ground is generally rolling and the land survey of about 1883 is still quite distinct.

Most of the supplies were obtained from Baker or from the Medical Springs store, largely through the assistance of Forest Supervisor Barnes and District Ranger Irwin, both of whom came to the camp at short intervals. Prices were, of course, very high compared with previous years. Some fresh produce was advantageously purchased at the nearby ranches.

About 50% of the area is covered with yellow pine timber, and 15% by larch-fir type. Most of the remainder is sagebrush and grassland. The merchantable area, including practically all of the yellow pine and much of the other types, was cruised on a 10% basis, with the unmerchantable timber on a 5% basis, while the topography on the alienated and largest sagebrush areas was largely adapted from the U.S.G.S. quadrangle.

Acreage and Mileage

1. Government land mapped	28,604 acres
Alienated land included and adjacent	26,793 acres
Total area	55,397 acres
2. Area covered by 10% cruise	19,810 acres
Area covered by 5% cruise	6,879 acres
Area mapped less intensively, (government land only)	2,780 acres
Private land, topography adapted	25,928 acres
	55,397 acres
3. Miles of strip cruising	293 miles
4. Miles of control line, chiefly section line retracements by compass, topographic tape and double Abney method	64 miles

II. Field Expenses

1. Subsistence supplies	$229.84
2. Cook's wages	97.50

3. Packing and hauling supplies, moving camp, etc., including $15. in time contributed by Forest officers	70.74
4. Travel Expense	206.52
5. Equipment and supplies	30.11
Total expenses	$634.71
6. Average daily expense per man	$1.875

III. Field Work Costs

1. Average size of crew (excepting cook) 7.5 men

338 man days in 45 crew days,

2. Average individual monthly salary $70.05

Control work	Man days 61	
	Salary	$145.50
	Expense prorated	114.17
	Total	$259.67
Strip cruising	Man days 146	
	Salary	$314.75
	Expense prorated	273.80
	Total	$588.55
Camp computing and Map compilation	Man days 32	
	Salary	$92.00
	Expense prorated	60.00
	Total	$152.00
Supervision by Chief of Party	Man days 13	
	Salary	$40.69
	Expense prorated	24.37
	Total	$65.06
Travel and Establishing Camp	Man days 34	
	Salary	$75.67
	Expense prorated	63.75
	Total	$139.42
Sundays and leave	Man days 52	
	Salary	$120.80
	Expense prorated	98.62
	Total	$219.42
Total cost of field work	Man days 338	
	Salary	$789.41
	Expenses	633.39
	Total	$1,422.80

IV. Office Work

Three technical men and two computing clerks made the tracings and computed the cruise estimates in Portland. The costs cover the expenses, excepting office rent and higher

supervision, for three sets of the estimate sheets, working plan maps, descriptive and cost reports. Travel expenses are, however, included with the field work.

		Distribution		
	Mapping	Computation	Reports	Totals
Man days	70	60	18	148
Salaries	$224.94	$201.94	$64.72	$491.60
Bluepr. & Typewr.	13.00	13.00	10.00	36.00
Total cost	$237.94	$214.94	$74.72	$527.60

V. Total Cost of the Project

		Cost per acre
Field work	$1,422.80	$.026
Office work	527.60	.010
Grand total	$1,950.40	$.036

Costs per Acre and per M

55,339 acres, gross area	$.036 per acre
28,604 acres, net (Gov't land)	.068 per acre
180,276 M ft. B.M. estimated	.11 per M

Charley Conover
Forest Assistant

Alfred A. Griffin
Forest Examiner