

208  
11/20/66  
M.L. Young

Whipsaw Creek

Ref. No.: **105**

ECOLOGICAL RESERVES COLLECTION  
GOVERNMENT OF BRITISH COLUMBIA  
VICTORIA, B. C.  
V8V 1X4

REPORT ON THE  
SPECIAL CRUISE OF YELLOW PINE  
ON LOTS 962 AND 148  
WHIPSAW CREEK

*Confidential information  
not to be taken  
from the office  
[Signature]*

B.C. FOREST SERVICE

Forest Inventory Division  
E.L. Young, Forester i/c

October 1966.

3

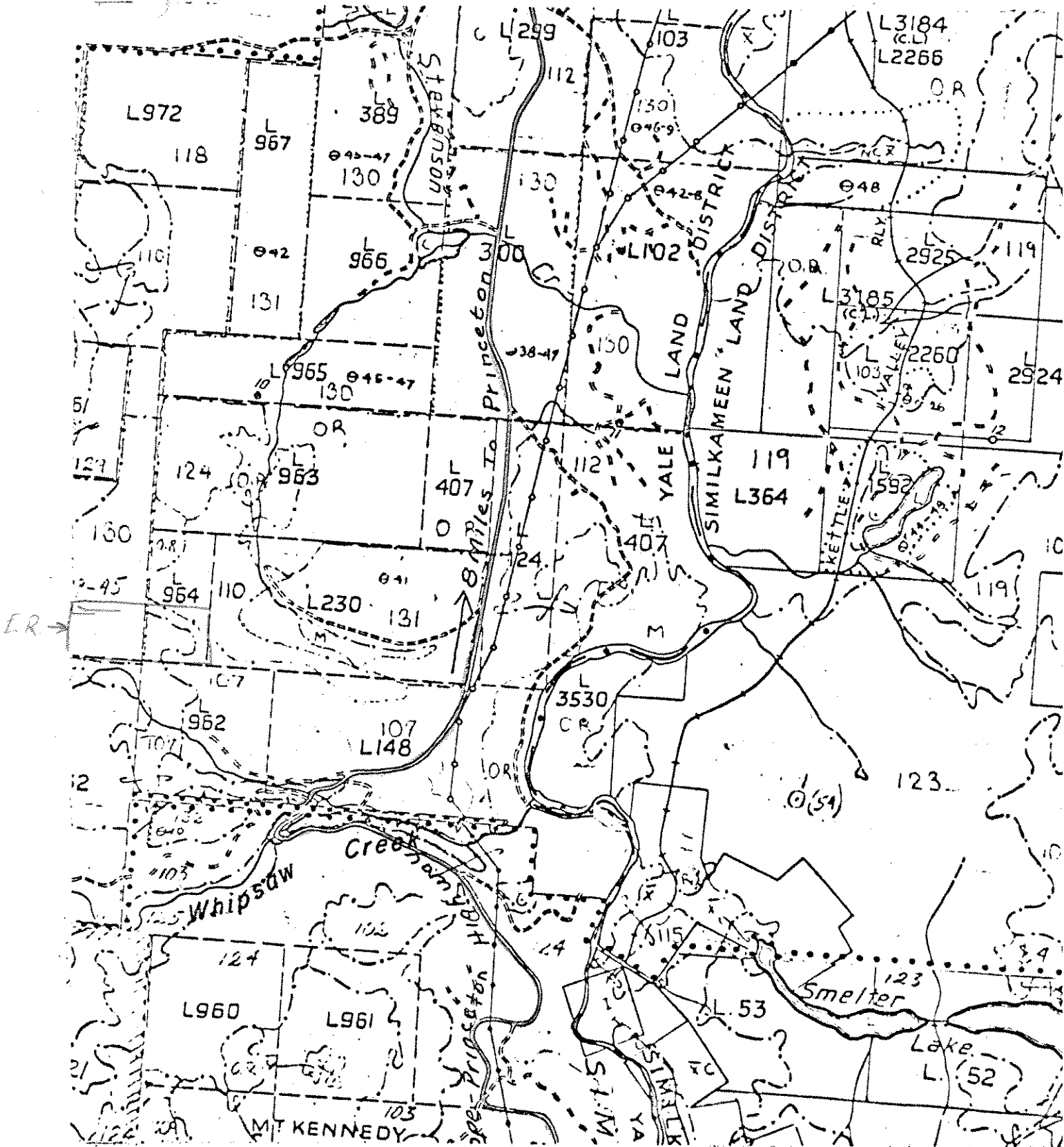
ECOLOGICAL RESERVES COLLECTION  
GOVERNMENT OF BRITISH COLUMBIA  
VICTORIA, B.C.  
V8V 1X4

This report was made at the request of  
the Department of Recreation and Conservation, Parks  
Branch (their letter dated July 29,1966 file 1-1-5-78)

CONTENTS

	<u>Page</u>
1. Key Map	1
2. Requirements	2
3. Planning	2
4. Field Work	3
5. Compilation	5
(a) Sample trees and local Volume Table.	5
(b) Calculation of Volume in Lots 148 and 962, with summary of volumes.	6
(c) Acreage.	6
6. General Descriptions	7
7. Logistics	8
8. Field work sheets, retained on Forest Inventory file #0134219-SC282 "Whipsaw Creek Py Cruise"	8
9. Appendices	9
(1) Illustrations.	
(2) Type Map.	
(3) Tree height data.	
(4) Volume Compilation sheets.	

1. Key Map Lots 962 & 148 at Whipsaw Creek



Scale : 40 chains = 1 inch

## REQUIREMENTS

In July 1966, Mr. H.G.McWilliams, Director, Parks Branch of the Department of Recreation and Conservation in Victoria, asked if the Forest Service would undertake a cruise of the yellow pine on Lots 148 and 962 at Whipsaw Creek, on the Hope-Princeton Highway.

The purpose of the cruise was to ascertain the amount of yellow pine, to further negotiations with the Crown Grant holders in an attempt to preserve the stand.

## PLANNING

- (a) Survey - the old survey dated 1899, for Lot 148, and the survey for Lot 962 dated 1916 were located. These notes were drafted showing the Lots themselves with corner posts and bearing trees.
- (b) Photographs - the area was located on 40 chain to the inch photos dated June 21, 1947; also on a line of photos, line B.C.1165, 47-51, dated July 21, 1950. These photos were of value in locating posts to tie in base lines.
- (c) Cruising method - it was decided that the area would require an intensive sampling because of the low density of the stand. The best method seemed to be to run strips using circular 1/5 acre plots in Lot 962, from a north-south base line along the boundary between Lot 962 and 148. From the photos it appeared that Lot 148 would require 100 per cent cruise using a systematic procedure.

### FIELD WORK

- (a) Base Lines - the centre post on the boundary between Lot 962 and Lot 148 was found (see illustration) from which a base line was run north to the north boundary and tied in to the corner post of the old survey. Posts were located for cruise lines in accordance with the draughted map of the area. Similarly the base line was extended southward to Nine Mile Creek and posts erected from which to run chain lines west to the extent of the yellow pine type.
- (b) Sampling - one-fifth acre circular plots were used at two chain intervals in Lot 962 and also in a ten acre area in the northwest corner of Lot 148. This area, from photo interpretation and ground inspection, had yellow pine coverage in a uniform stocking. However, when the sampling was completed it was decided that the coverage was insufficient; therefore additional lines were run between the original posts and plots of one-fifth acre size measured at the same two chain intervals. In all, 130 plots were measured in 80 acres; that is, 26 acres in 80 or 32.5 per cent coverage.
- (c) Total cruise - Lot 148, however, had a varied population of yellow pine and therefore any sampling system except 100 per cent seemed inadequate. The highway which ran diagonally through the Lot was a natural dividing line and difficult to cross. On the west side of the Lot, strips were run with the chain at intervals of width depending on the density from the base line to the highway. All trees north of the strip were measured and marked with white chalk so that none would be missed.

The north boundary of Lot 148 was chained from the northwest corner to 46 chains and a second north-south base line was run and flagged with red marking tape from where it crossed the highway to the southern boundary. This base line was used to facilitate the running of similar strips on the east side of the road to accomplish a total cruise and avoid duplication of measurement.

- (d) Type lines - in Lot 148 all yellow pine was measured for d.b.h. This included fir-yellow pine type and the pure yellow pine type. Where there was a mixed type the fir was also measured and is included in the field notes but not in the summary. The pure fir type, which is predominately immature with merchantable veterans, is indicated on the detailed map but was not sampled.

In Lot 962 the type line follows Nine Mile Creek. The southwest corner of this Lot is a northern exposure and contains no yellow pine.

- (e) Tree heights - tree heights were taken on 54 sample trees to cover a range in diameters of 8 to 48 inches. These were selected on the western exposure of Lot 962 and on the southern exposure of Lot 148 as well as some on the relatively flat open areas on both sides of the highway. A balanced height/d.b.h. curve was drawn (see field notes) from this information (Appendix 3) to obtain a local volume table. Heights obtained from this curve are indicated in column 2 on the compilation sheet (Appendix 4).

- (f) Field equipment used - the topographic chain was used with a Suunto level to establish horizontal distances and tree heights. Large calipers were used to measure d.b.h. up to 28 inches, above which

the d.b.h. tape was used for more accuracy. Disc chalk was used for tree marking and red flagging tape to indicate markers and base lines. No trees were blazed or marred in any way. Trees when measured were recorded in two inch diameter classes on a tally sheet using a dot count system.

#### COMPILATION

(a) Local Volume Table - a height/d.b.h. curve was drawn for the yellow pine in accordance with instructions in "Forest Surveys and Inventory Division's Standard Cubic-Foot Volume Tables - 1962" page 12. Data used was 54 yellow pine measured to the nearest tenth of an inch d.b.h. and to the nearest foot in height with the Suunto level and chain. Volumes for 2 inch d.b.h. classes and curve heights were taken from "One Inch/One Foot Standard Cubic-Foot Volume Tables 1962" Volume 2 Interior Species, Forest Surveys and Inventory Division", for yellow pine Zone 5. This volume was reduced for decay, waste and breakage as detailed in Forest Inventory Division's Net Volume (Loss) Factors 1966, for yellow pine, page 57. Tree class 0 table was used, since all living trees were measured regardless of pathological conditions. This volume, which is now reduced for decay, waste and breakage, was further reduced to Intermediate utilization standard for yellow pine as per "Forest Surveys and Inventory Division's Standard Cubic-Foot Volume Tables 1962", appendix II page 99. It was felt that Intermediate utilization with 1.5 foot stump and an 8 inch top was the most realistic. This conclusion is based on the slope of the area which varies from almost flat to 60 per cent, and on past utilization standards achieved in the area. Appendix 4 contains the compilation sheets using the local volume table, Column 3.



- (b) Volumes - all volumes reduced for decay, waste and breakage to Intermediate utilization; i.e. 1.5 foot stump and 8 inch top of yellow pine only.

Lot 148

Net volume of 7.1" to 11.0" = 1,311 cu.ft.  
Net volume of 11.1" plus = 162,270 cu.ft.

Lot 962

Net volume of 7.1" to 11.0" = 373 cu.ft.  
Net volume of 11.1" plus = 73,617 cu.ft.

Both Lots

Net volume of 7.1" ~~to 11.0"~~ = 237,571 cu.ft.  
Net volume 11.1" plus = 235,887 cu.ft.

Using the conversion factor 5.75 normally used by Forest Inventory to convert cubic feet to board feet in the Interior,

Net volume 11.1" plus - 235,887 x 5.75 = 1,356,350 board feet

- (c) Acreage - in Lot 962 there are 80 acres that are populated with yellow pine. The area along and north of Nine Mile Creek is mixed with immature fir. The area south of the creek being a northern exposure is a pure fir type. This is the remaining 80 acres in the Lot.

The slopes along the southern and eastern boundaries of Lot 148 is mainly a fir type with a scattering of yellow pine which is measured and included in the estimate. The pure fir type along the northern boundary of Lot 148 has no yellow pine and this was not included in the cruise. However, the transition zone between this type and the yellow pine type did include both species; the fir in this area was included in the cruise but does not appear in the volume estimate.

Total acreage populated by yellow pine, in some degree of density, in Lot 148, was 214 acres, all of which was measured and appears in the

final estimate. Total area on both Lots growing yellow pine is 294 acres.

#### GENERAL DESCRIPTIONS

(a) Accessibility - the Hope-Princeton highway enters Lot 148 about 10 chains east of the southwest corner and exits 58 chains west of the northwest corner on the northern boundary. A road enters the same Lot where the highway intersects an east-west line from the centre post on the west boundary and runs westerly along the contour crossing the west boundary 2 chains north of the centre post then diagonally and down the slope to join a logging road which runs on the north side of Nine Mile Creek. This intersection is within 5 chains of the northwest corner of Lot 962. Another Jeep road runs from the highway near the centre line of Lot 148 eastward, then down the slope to the southeast corner of the Lot. (Appendix 2)

(b) General condition of yellow pine - the age of the yellow pine measured varies from 28 years for an 8.5 inch d.b.h. 43 feet in height, to 233 years for a 24.3 inch d.b.h. 110 feet in height, to the oldest measured at 36.0 inches d.b.h. 120 feet in height and estimated from the core to be 340 years old.

It is noted that these trees in this open stand experience good diameter growth but only a fair height growth. The tallest tree measured; 38.1 inches d.b.h.; had reached 140 feet. Generally, healthy limbs were prominent as low as 10 feet from the ground on most of the larger diameter trees in the open grassy areas. The borings for age indicated sound heartwood in all trees sampled. Only a few

basal fire scars are in evidence. The illustrations in Appendix 1 attempt to verify the above description.

#### LOGISTICS

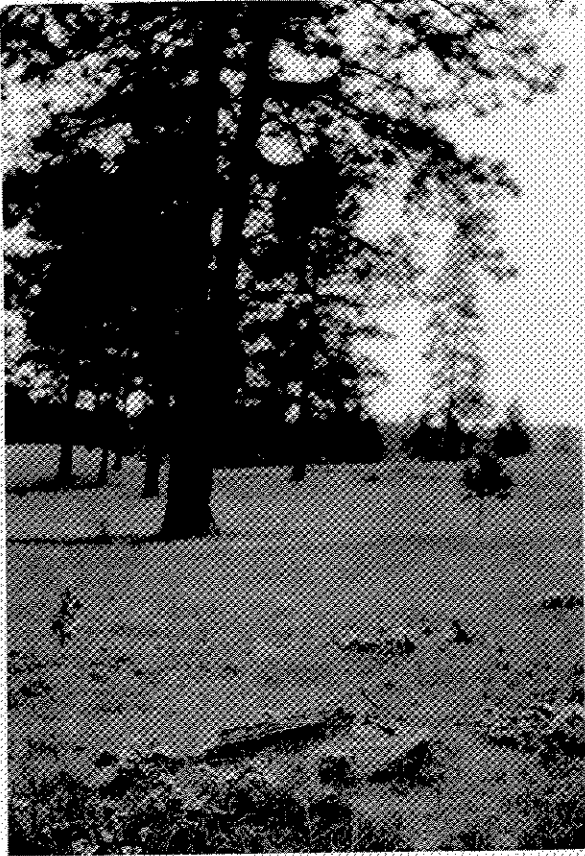
- (a) Personnel - the crew consisted of one forester, one tallyman and two compassmen. The time taken to establish base lines and complete the survey was five days. Two additional days were required to travel to and from the project from Victoria.
- (b) Excellent co-operation was experienced from all concerned and particularly from the Forest Ranger, Mr. F.M.Baker, at Princeton.

#### FIELD DATA

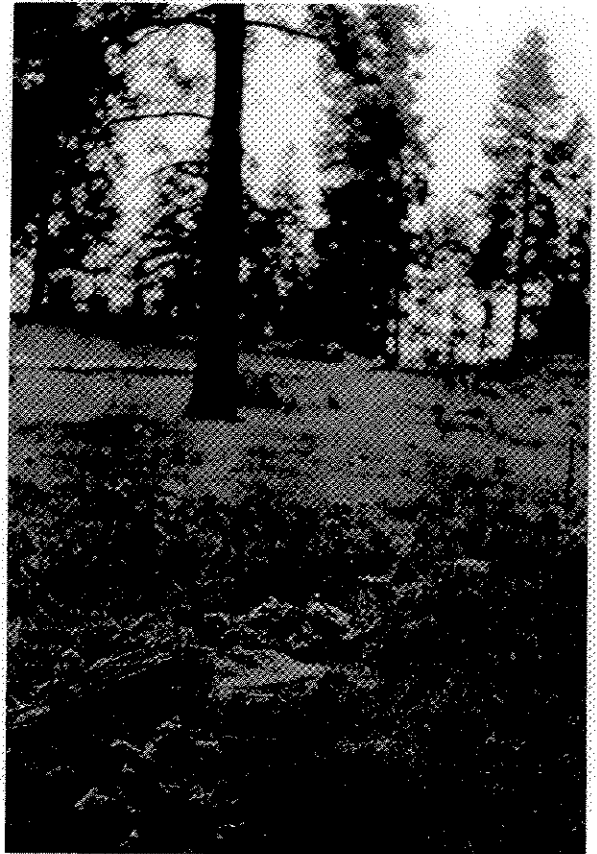
The field notes are retained on the Forest Inventory Division file number 013219 - S.C.282 Whipshaw Creek Py Cruise.

APPENDICES

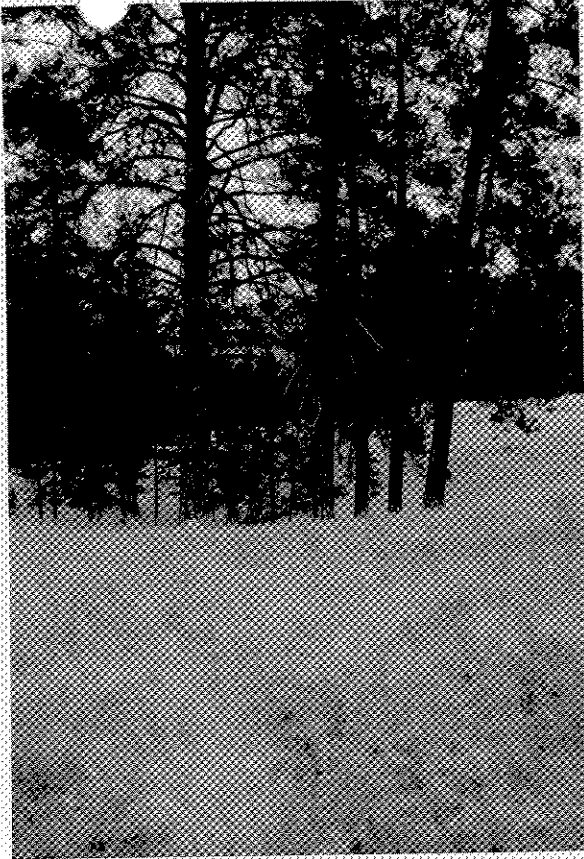
APPENDIX 1



1. Centre Post on west boundary of Lot 148 in foreground, 1916 survey, and stone mound with bearing tree, south 35 degrees west, 112 links.

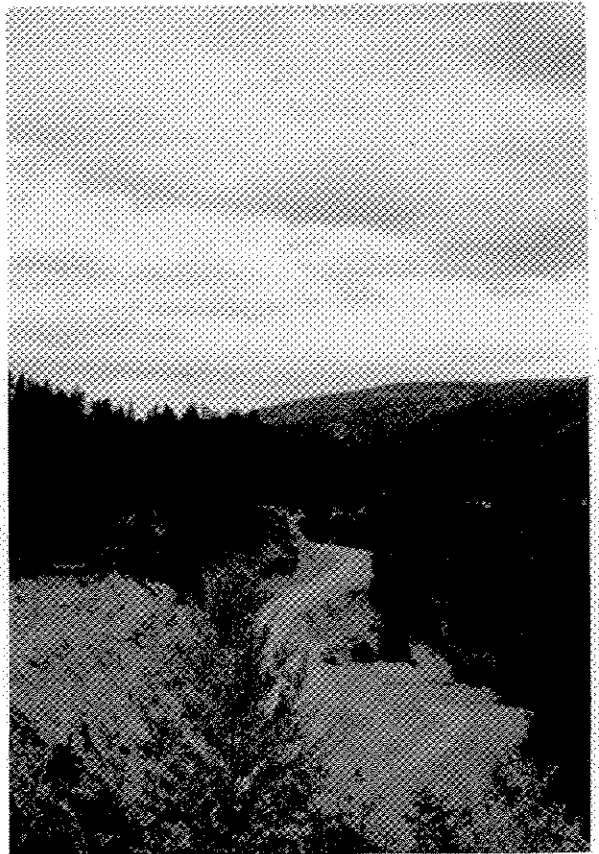


2. Centre post again showing bearing tree, west, 97 links.

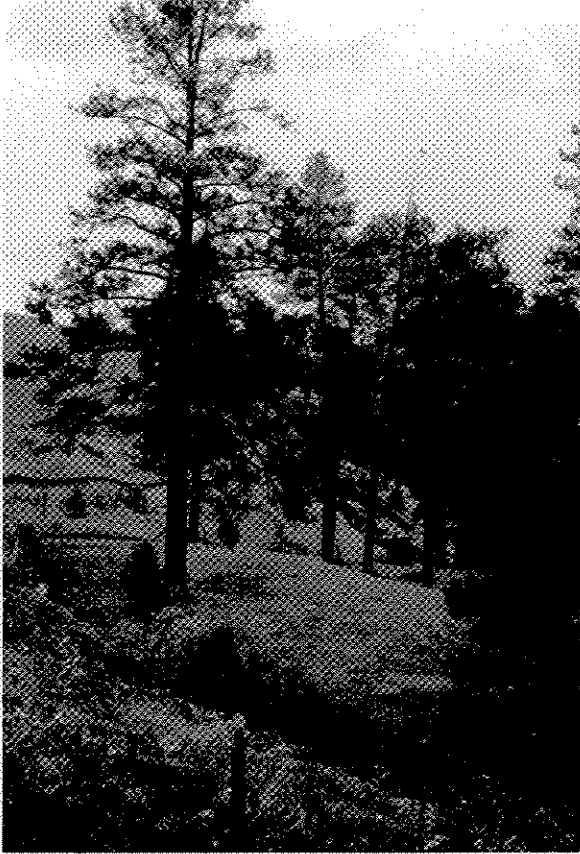


3. 50 inch yellow pine, height 135 feet, left centre, showing extent of limbs, and grassy slope.

4. Taken from the southwest corner of Lot 148 looking northeast, showing the course of the highway through Lot and look-out point Whipsaw Creek where car is parked.

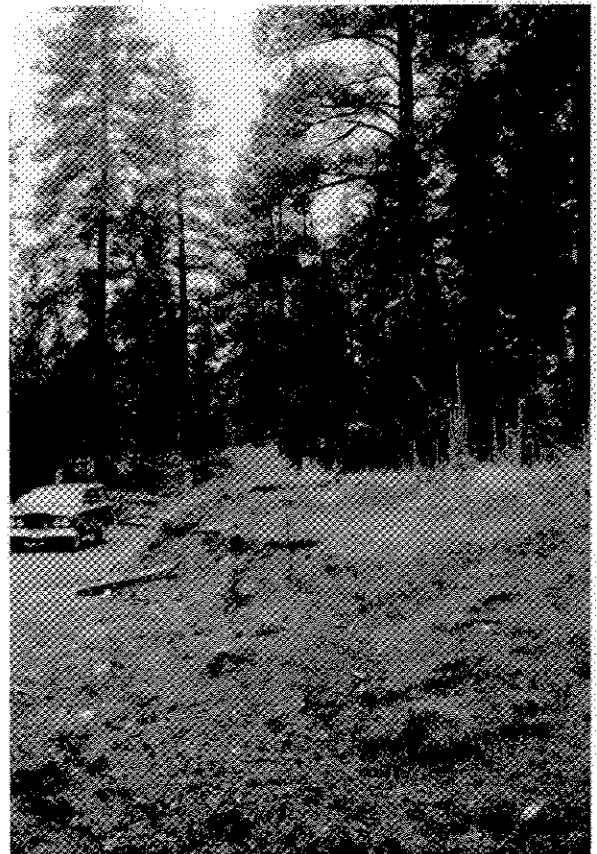


Appendix 1 continued -



5. Taken near centre post looking east, showing entrance to coal mine shaft between yellow pine stems.

6. Taken from highway showing the entrance of Jeep road that runs west through Lot 148.



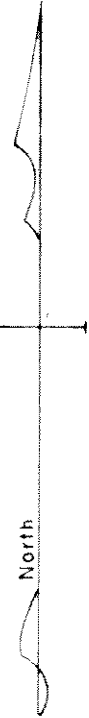
Appendix 1 continued -



7. Taken from southwest corner of Lot 148 looking northeast, showing the yellow pine on the more shallow southern slope towards the highway.

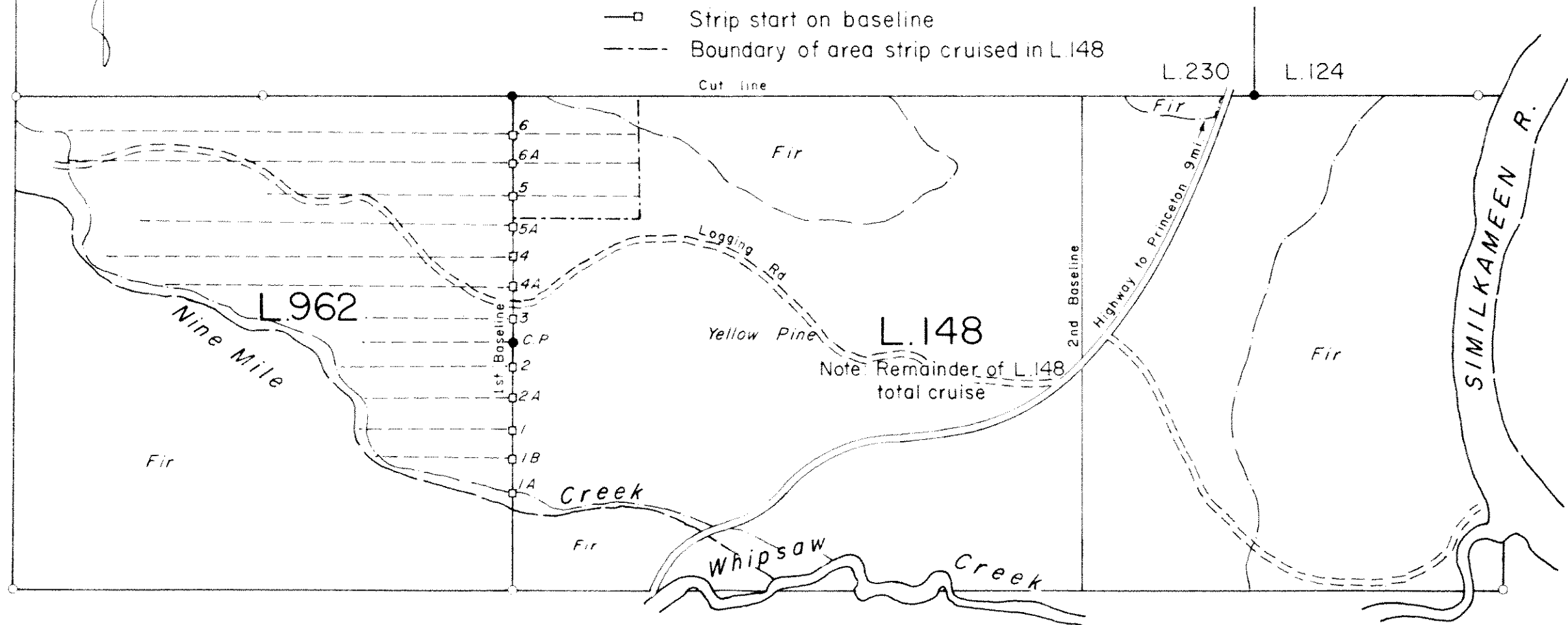


B.C. FOREST SERVICE  
 FOREST INVENTORY DIVISION  
**SPECIAL CRUISE L.962 & L.148 WHIPSAW CREEK**  
 OCTOBER 1966  
 Scale 1 Inch = 10 Chains



Legend

- Post found
- Post not found
- Surveyed line
- - - Plots at two chain intervals
- Strip start on baseline
- - - Boundary of area strip cruised in L.148





APPENDIX 4

(a)

1	2	3	4	5	6	7
				3 x 4		5 x 6
D.B.H.	Curve Ht.	Gross Vol. cu. ft.	Decay Waste & Breakage	Total Less D.W.&B.	Intermediate Utilization	Net Vol. cu. ft.
8	38	5.1	1.00	5.10	.03	1.53
10	47	9.9	.94	9.31	.38	3.54
12	57	17.3	.90	15.57	.64	9.96
14	67	27.6	.90	24.84	.81	20.12
16	75	40.3	.90	36.27	.87	31.55
18	82	55.6	.90	50.04	.90	45.04
20	88	73.4	.90	66.06	.92	60.78
22	94	94.5	.90	85.05	.93	79.10
24	98	116.8	.90	105.12	.94	98.81
26	102	142.1	.90	127.89	.94	120.22
28	106	170.7	.90	153.63	.95	145.95
30	109	200.7	.90	180.63	.95	171.60
32	112	233.8	.90	210.42	.95	199.90
34	115	270.2	.90	243.18	.95	231.02
36	117	307.0	.90	276.30	.96	265.25
38	119	346.7	.90	312.02	.96	299.54
40	121	389.4	.90	350.46	.96	336.44
42	123	435.1	.90	391.59	.96	375.93
44	124	479.7	.90	431.73	.96	414.16
46	125	526.8	.90	474.12	.96	455.46
48	126	576.3	.90	518.67	.96	497.92
50	127	628.4	.90	565.56	.96	542.94
52	128	683.1	.90	614.79	.96	590.20
54	129	740.4	.90	666.36	.96	639.71

Appendix 4 continued -

(b)

1	8	9	10	11	12	13	
		7 x 8	9 x (3.33)		7 x 11	10 + 12	
D.B.H.	15, 1/5 ac. Plots in Lot 148			Total Cruise 148		Cu. ft. Vol. 148	
	N	Vol. in Plots	Vol. in 10 ac.	N	Volume		
8	-			230	352	352	
10	2	7.08	24	264	935	959	
12	1	9.96	33	262	2610	2643	
14	2	40.24	134	257	5171	5305	
16	3	94.65	315	171	5395	5710	
18	5	225.20	751	178	8017	8768	
20	7	425.46	1418	123	7476	8894	
22	3	237.30	791	130	10283	11074	
24	5	494.05	1647	138	13636	15283	
26	6	721.32	2404	130	15629	18033	
28	2	291.90	973	85	12406	13379	
30	3	514.80	1716	72	12355	14071	
32	3	599.70	1999	72	14393	16392	
34	2	462.04	1540	56	12937	14477	
36	1	265.25	884	28	7427	8311	
38	1	299.54	998	19	5691	6689	
40				8	2692	2692	
42				12	4511	4511	
44				8	3313	3313	
46				1	455	455	
48				1	498	498	
50				1	542	542	
52				1	590	590	
54				1	640	640	
						163581	

(b)

14	15	16	17	1					
	7 x 14	15 ÷ (26)	16 x (80)						
	130 Plots in	Lot 962	Volume in						
N	Vol.inPlots	Vol./acre	80 acres Lot 962	D.B.H.					
19	29.07	1.12	90	8					
26	92.04	3.54	283	10					
34	338.64	13.02	1042	12					
29	583.48	22.44	1795	14					
34	1072.70	41.26	3301	16					
40	1801.60	69.29	5543	18					
29	1762.62	67.79	5423	20					
33	2610.30	100.40	8032	22					
34	3359.54	129.21	10337	24					
29	3486.38	134.09	10727	26					
26	3794.70	145.95	11676	28					
4	686.40	26.40	2112	30					
9	1799.10	69.20	5536	32					
6	1386.12	53.31	4265	34					
2	530.50	20.40	1632	36					
1	299.54	11.52	922	38					
				40					
				42					
1	414.16	15.93	1274	44					
				46					
				48					
				50					
				52					
				54					
		924.87	73990						