PRELIMINARY
RECONNAISSANCE

SHUSWAP PROVINCIAL FOREST

A.E. COLLINS

1926
Preliminary Reconnaissance
Shuswap Provincial Forest
Southern Interior Forest District

--------------------

The compilation of the attached map and following report was made from forest cover data furnished by the field officer directly administering the area investigated and from an extensive examination carried out with a view to ascertaining the relationship in land suitable for growing merchantable timber, as against areas not suitable for forest production.

The volumes as shown in the following estimates are approximate and are given more to illustrate the occurrence of mature timber and as a guide for the formation of a working plan for a more intensive survey at a later date.
Description of Area

Location:
The Shuswap forest lies thirty miles North East of Vernon and the North end of Okanagan Lake. The area is bounded on the North by the Dominion Railway Belt; on the South by the Grizzly Hills and Kettle Valley forest; on the East by the Gold Range and Monashee Mountains and to the West by Trinity Valley Aberdeen Mountain forest and the Canadian National Railway.

Area in Square Miles.

<table>
<thead>
<tr>
<th>Shuswap Forest</th>
<th>Total area equivalent to 880 sq. miles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature timber, Reproduction and other areas suitable for reforestation</td>
<td>455 sq. miles 52%</td>
</tr>
<tr>
<td>Grazing</td>
<td>109 sq. miles 12%</td>
</tr>
<tr>
<td>Barren and Scrubs, suitable only for watershed protection</td>
<td>316 sq. miles 36%</td>
</tr>
</tbody>
</table>

General Topography and Drainage.

Forming one of the main arteries to the Shuswap and Adams Lake System and North Thompson River watershed.
The Shuswap River forms the main drainage basin to the area for reserve.
The Shuswap River rises in the Cold Range Mountains thirty miles South of Kamloops and following a southerly course for thirty miles enters Sugar Lake, elevation 1980'.
(A natural reservoir to control the waters of the upper reaches of the River). Continuing a southerly course for eight miles; thence Easterly nine miles; thence North ten miles to Mable Lake. Elevation 1270'.
The river flows over an even stream-bed with one small fall and rapid at Gatscombe.
Fourteen miles North of the streams entrance to Mable Lake the Shuswap leaves the reserve and flowing west to Enderby terminates with a Northerly course to Mara and the Shuswap Lake system.

The three main feeders, Cherry, Outlet, and Sitkum Creeks, in order of importance flowing from the Gold Range to the East, enter the parent stream at points directly North of Cherryville and South of the river's entrance to Sugar Lake.

General topography varies from the rugged high barren mountains of the Gold Range to the East,
average elevation, 7000' approximately, falling away to the west to the more evenly surfaced timber-clad slopes of the Silver Hills, average elevation 5500' approximately. General trend of divides to Shuswap and East of Sugar Lake comprise timber-clad ridges running North and South. The most marked division being Park Mountain plateau, dividing Mable and Sugar Lakes. Averaging approximately twenty degrees timbered slopes West of Sugar Lake are generally evenly surfaced and unbroken with very little bench land occurring. East of Sugar Lake sidehill slopes are excessively steep, in many cases rising sheer and inaccessible from the valley floor. Rock outcropping on valley floor and timbered slopes is moderate throughout the area.

**Climate**

Precipitation in the Shuswap watershed varies considerably from the Okanagan Valley directly to the west, a higher rainfall being usual. Mean annual precipitation approximately 25 inches (from precipitation map)

Spring and summer seasons, April 15th - Sept. 15th.
Fall and winter seasons, Sept. 15th - April 15th.
Maximum snowfall — valley floor — twenty-four inches.
Agriculture

Agricultural possibilities within the borders of the reserve (reference attached map) are nil. The only area worth any consideration is that area of the Upper Shuswap River North of Sugar Lake to the Dominion Railway Belt boundary.

The land suitable for tillage lies along a narrow valley bottom, bounded by steep sidehill slopes, and under merchantable timber, and is so topographically placed as to render chances unlikely for settlement owing to infrequency of sunlight.
Areas immediately adjacent to and outside the proposed reserve are in a fairly advanced state of culture, mixed farming and fruit being the chief commodities. Soil on agricultural land varies from moderate to deep sandy clay loam and gravel to shallow bench land.

Land intervening between Aberdeen Mountain forest and Trinity Hills is of doubtful agricultural value and will require a more intensive examination before being included in the reserve.

Forest Description:

The forest tributary to the Upper Shuswap River is of a mixed type, an interesting feature being the representation of all merchantable tree species of the interior found East of the Cascade Mountains.

In order of importance, Cedar, Fir, Larch, White Pine, and Spruce, are the principal species with Hemlock, Lodgepole Pine, Balsam, and Yellow Pine, found scattered throughout the area.

<table>
<thead>
<tr>
<th>Valley Floor</th>
<th>Sidehill Slopes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cedar</td>
<td>Cedar</td>
</tr>
<tr>
<td>White Pine</td>
<td>Fir</td>
</tr>
<tr>
<td>Hemlock</td>
<td>Larch</td>
</tr>
<tr>
<td>Spruce</td>
<td>White Pine</td>
</tr>
<tr>
<td>Larch</td>
<td>Lodgepole Pine</td>
</tr>
<tr>
<td></td>
<td>Yellow Pine</td>
</tr>
</tbody>
</table>
Above 5000 ft. elevation

Spruce
Balsam

Distribution

Cedar is the dominant species, with Larch and Fir running close seconds. White Pine, and Hemlock coming next in importance. Mature Lodgepole Pine is found growing in mixture with the Fir, Larch, and Yellow Pine. To the lesser important species of the forest, Yellow Pine is found in mixture with Fir, and Lodgepole Pine. On the more exposed Southern Slopes Spruce and Balsam at elevations around 5000 feet are of merchantable quality but at present being topographically inaccessible is of most value for watershed protection.

Soil

Varies from moderate to deep fresh clay sandy loam along valley floor to shallow to moderate fresh sandy loam on rock rubble on sidehill slopes. Underbrush, light. Windfall, Generally light to moderate.
Fir, Larch, and Lodgepole Pine
Approximately 60 years old.
3 miles South of Trinity Hills.

Reproduction

Periodic fires and later the restocking of the area by seed trees has created a composite and uneven-aged stand of reproduction. The principal species in order of importance are, Fir, Larch, Lodgepole Pine, White Pine, Cedar, Hemlock, Spruce, and Balsam.

Reproduction varies in age from four (4) to sixty (60) years with an approximate average D.B.H. of three (3) inches and height of thirty (30) feet.
Few pure stands of any one species are found to any large extent, reproducing areas more resembling the conditions prevailing in the Aberdeen Mountain Forest, where even-aged minor mixed types merge into uneven-aged mixed types of earlier or later origin.

All types will run heavier to the tolerant species, Fir, Larch, Lodgepole Pine, with White Pine, restocking well and Cedar, Hemlock, Spruce, and Balsam, being more scattered throughout the stand.

It was especially noted that White Pine seedlings during the last six (6) years, are seeding in densely under forty (40) year old Lodgepole Pine.

Fir, Larch stands, this being specially noticed in the vicinity of Trinity Hills.
With Cedar and Hemlock predominating, reproduction under mature timber in all species is plentiful in all age and height classes.

Infestation

Only infestation noticed is the destruction of immature White Pine by the White Pine beetle (Dendroctonus monticolae) from the sapling to the pole stage 6 to 14 inches. This infestation occurring more frequently in open grown stands in mixture with reproduction than in immature White Pine reproduction under timber.

Quality and Utilization.

Showing cedar butt logs left after pole operations.
Cedar

Is found growing to best advantage and is of most commercial value during pole stage. 12 to 24 inches D.B.H. when the tree is sound, straight, and free from defect. Above 24 inches D.B.H. Cedar is defective in conical heart-rot. During logging operations the usual practice is to long butt trees over 24 inches D.B.H. where possible for poles, leaving butt logs and valuable fence post material as waste.

Present utilization for poles only.

Fir.

Average diameter 16" of medium height is sound and free from defect.

Utilization general building material.

Ties and piling.

Larch

Average diameter 16" is tall straight to a high crown defective in heart rot.

Utilization. Ties and common stock.

White Pine.

Average diameter 18" straight of medium height to a high crown no defect noticed.

Utilization - finishing material - matches.
Spruce

Average diameter 18 inches of medium height and straight.
Utilization for box shook.

Lodgepole Pine

Average diameter 10", tall to a high crown.
Straight and free from defect.
Utilization - box shook.

Balsam

Average diameter 10 inches. Short to moderate in height.
Not utilized.

Hemlock

Average diameter 16 inches, is of medium height to a high crown. Over mature and heavier defective in heart-rot.
Not utilized.
TIMBER ESTIMATE

To illustrate timber estimate, description of boundaries follows.

Area A - Bounded by Shuswap River to South, Railway belt to North, Maple Lake to the West and Sugar Lake to the East.

C  "  "  Shuswap River to the South and West. Grizzly Hills and Kettle Valley Forests to South--Gold Range--Mountains to the East.

B  "  "  Railway belt to the North--Bessette Creek to the South--Maple Lake to the East--and Aberdeen Mountain Forest to the West.

D  "  "  Shuswap River to North--Grizzly Hills Forest to South--Cherryville to East--Creighton Creek to West.

Main Type Description in Acres -- Total in Square Miles.

<table>
<thead>
<tr>
<th>Area</th>
<th>Acres</th>
<th>Merchantable</th>
<th>Timber Reproduction</th>
<th>Grazing</th>
<th>Burned</th>
<th>Baren &amp; Scrubs</th>
<th>Water</th>
<th>Total Sq. Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>86,936</td>
<td>19,392</td>
<td>53,800</td>
<td>15,504</td>
<td>6,716</td>
<td></td>
<td></td>
<td>285</td>
</tr>
<tr>
<td>B</td>
<td>27,390</td>
<td>32,040</td>
<td>82,400</td>
<td>------</td>
<td>------</td>
<td>8,960</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>C</td>
<td>43,328</td>
<td>41,432</td>
<td>41,320</td>
<td>------</td>
<td>186,225</td>
<td>300</td>
<td>200</td>
<td>441</td>
</tr>
<tr>
<td>D</td>
<td>3,650</td>
<td>8,180</td>
<td>4,480</td>
<td>------</td>
<td></td>
<td></td>
<td>800</td>
<td>26</td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12,800</td>
</tr>
<tr>
<td>Totals</td>
<td>161,304</td>
<td>101,844</td>
<td>69,800</td>
<td>15,504</td>
<td>202,101</td>
<td>12,800</td>
<td></td>
<td>880</td>
</tr>
<tr>
<td>Area</td>
<td>Acres</td>
<td>Cedar</td>
<td>Larch</td>
<td>Fir</td>
<td>White Pine</td>
<td>Lodgepole Pine</td>
<td>Yellow Pine</td>
<td>Spruce</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------</td>
<td>-------</td>
<td>-----</td>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>A</td>
<td>86,936</td>
<td>28,525</td>
<td>42,330</td>
<td>59,800</td>
<td>32,350</td>
<td>22,500</td>
<td>3,000</td>
<td>27,700</td>
</tr>
<tr>
<td>B</td>
<td>27,390</td>
<td>21,490</td>
<td>16,400</td>
<td>19,300</td>
<td>10,400</td>
<td>2,700</td>
<td>1,700</td>
<td>4,600</td>
</tr>
<tr>
<td>C</td>
<td>43,328</td>
<td>61,180</td>
<td>25,100</td>
<td>34,000</td>
<td>30,600</td>
<td>4,700</td>
<td>1,500</td>
<td>26,500</td>
</tr>
<tr>
<td>D</td>
<td>3,650</td>
<td>9,700</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td>9,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Inaccessible pulp timber)</td>
<td>37,200</td>
<td>20,200</td>
<td>57,400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>161,504</td>
<td>111,195</td>
<td>93,530</td>
<td>122,100</td>
<td>73,350</td>
<td>29,900</td>
<td>6,200</td>
<td>96,200</td>
</tr>
</tbody>
</table>

Total Cedar Poles in Lineal Feet. 17,500 M.

\[
\text{Total Estimate} = \begin{cases} 
\text{Accessible Sawlog timber} & 553,275 \text{ M. bd. ft.} \\
\text{Inaccessible Pulp Timber} & 57,400 " " " \text{ all species 4.1 per acre.} \\
\text{Inaccessible Cedar Poles} & 17,500 \text{ Lin. ft.} 
\end{cases}
\]

Above estimates have been subject to following cull:

- Cedar 30%
- Larch 15%
- Hemlock 70%
Utilization and logging of Timber Products.

The main timber products are cedar poles for export via Lumby and Canadian National Railway. Since the large mill at Enderby with an 80 m per day cutting capacity has ceased operation, utilization of dimension and box material is for local consumption only. The following mills are adjacent to the reserve.

Enderby Saw Mills Ltd. - 20 M. per day cutting capacity.
Bell Lumber and Pole Company - now under construction at Enderby - 20 M. per day capacity.
Shuswap Saw Mills Ltd. Enderby - 15 M. per day capacity.
Lumby Saw Mills 20 M. " " "
N. Bessette 5 M. " " "
Le Blanc 5 M. " " "

Horse-logging is generally carried out during winter months by scooping logs over snow roads. Summer horse logging is also practiced. The Shuswap river from Sugar Lake down is well suited for log driving, with a good holding ground at Mable Lake, and one bad hazzard at Gatescombe rapids. In previous years the Shuswap River was used for log driving to Enderby. It would be practicable to drive the upper reaches of the Shuswap from Sugar Lake to a holding ground above Gatescombe rapids, thence via a well located logging road along Bessette Creek and outlet for logs to Lumby and the Canadian National Railway.
Protection

The area as shown on attached map is evidently one of medium fire hazard. During the last three years forty-six fires have occurred within the reserve, forty-three having been caused by lightning and three by other causes.

Approximately 160 miles of road approaches the reserve to the South and East and approximately 96 miles of trails are disposed throughout the forest. The area is under observation from Aberdeen Mountain Lookout but due to the steepness of slopes and trend of valleys north and south, slopes with eastern exposures form "dead ground" and cannot be directly viewed from the Lookout. Sugar Mountain (reference attached map) would cover "dead ground" not viewed from Aberdeen Mountain Lookout. The trail from Sugar Lake North along Shuswap River to the Dominion Railway Belt requires re Claiming having been damaged by windfall caused by recent fires along East slope of Park Mountain.

Ranger headquarters - Shuswap Forest - J.W. McCluskey
Vernon.

Management

The management of the mature stands of this composite type forest will depend largely upon cutting rights, slash disposal, conservation, and cultivation of the more valuable species of the forest. The mature forest is of a climax type. Cedar for poles is the chief timber product being logged. Hemlock is gaining in predominance and when freed by the selective cutting of Cedar and White Pine may in time handicap the growth of the two latter species. Reproducing areas made up of varied species in all ages and stages of growth from overstocked stands in process of stagnation to fully stocked and sparse growth offers an excellent site for an intensive reproduction study and would be a most suitable location for an experimental station.


A preliminary topographic survey was made of this area by Mr. Dawson in 1900. The main features of which are fairly accurate.

The phototopographic survey party under Mr. McCaw has re-surveyed and completed the area from Aberdeen Mountain to Mable Lake of which photostat copies of the contoured sheets may be obtained by the end of April.
This party are further extending their survey this season east across Park Mountain and the Silverhills to the height of land of the Arrow Lake divide - contoured sheets of which may be available next spring.

A forest survey party under Mr. Purdy completed the survey of the Aberdeen Mountain forest in 1926. I would recommend this cruise to be extended further east to Trinity Hills and across Beaver Jack Creek with an initial camp at Trinity Valley with Camp two at Mable Lake, and with Camp three situated on Mable Lake, using the surveyed lots over this area from which to take control (Rep. Ref. Map No. 10).

The area to the east of Mable Lake and the Shuswap River may be covered from Camps (2) and (3) using survey lines for control, and with a base and tie here run north across Silver Hills from the N.E. Cor. Lot 36 to the S.W. Cor. S.T.L. 44200 - (Rep. Ref. Map 10).

Using survey lines for control Area (D) may be cruised from a camp situated adjacent to S.E. Cor. Lot 36. A further camp situated at the South end of Mable Lake would be centrally located to complete the S.E. part of Area (E). From this point I would recommend the party moving camp to Cherry Creek.
the lower part of which may be covered from the
surveyed lots which form the reserve boundaries.

From this camp approximately 8 miles
of traverse for control will have to be run to the
surveyed lots at the head of Monashee Creek, the
road to Edgewood offering a good route to carry
reserves.

A light Ford car would be an advantage
to the Chief of Party in taking men along roads from
headquarters camp to points adjacent to cruise lines
and for collecting supplies from main base of supplies
and mail at Lumby.

A.E. Collins,
Reconnaissance Officer.

Enlarged photographs by courtesy of
Photo-topographic Surveys.
Preliminary Reconnaissance

Proposed

Shuswap Provincial Reserve

Legend:

- Merchantable Timber
- Reproduction (Fully stocked)
- Grazing Land
- Burned Areas
- Barren and Scrub
- Reserve Boundaries
- Type Boundaries

Note: Contour intervals equal 500 feet. All Contours as placed upon this Map should not be taken as definite and are placed thereon only to show form of land surface. Base for Topography taken from Geological Survey.
thereon only to show form of land surface. Base for Topography taken from Geological Survey by G. M. Dawson. 1898.

Reconnaissance Officer
Victoria B.C. Jan 20th 1927.

ABERDEEN MOUNTAIN
ABERDEEN MOUNTAIN

ABERDEEN MTN. LOOKOUT
ELEVATION - 6200'

FOREST RESERVE.