BEAR CREEK (TULAMEEN)

1925

A. E. COLLINS

No 1118
EXTENSIVE RECONNAISSANCE - BEAR CREEK

A. E. Collins,
1925

[Map: Recon. Bound with report]

Correspondence file - 060329.  

[Signature]
EXTENSIVE TIMBER RECONNAISSANCE - BEAR CREEK WATERSHED

Composed of a two-man party, the reconnaissance of the Bear Creek Watershed was commenced on August 22nd and discontinued September 1st. A large volume of accessible sawlog and tie timber stock, offering a compact stand as one logging unit, was located. Embodied in the following report, an estimate and general description of timber throughout the Bear Creek Watershed follows.

Cruise Methods Employed.

Timbered area was determined from open vantage points on Henway, Lookout, Spearing and Grasshopper Mountains. Well graded horse trails on Barber, Bear and Murphy Creeks were traversed and used as a base for strips cruised, by sample 1/4 acre plot method from valley bottom to merchantable timber line. Height class of species ascertained with Abney level. Age class obtained with increment borer.

Control was obtained from topography, given on map issued by Dominion Geological Survey by C. Camsell, 1909. C. F. R. volume tables were used for compilation of timber estimates.
Description of Area

Bear Creek, situated 8 miles west of Tulameen, is bounded to the north by Thynne Creek, to the east by the Otter Valley, to the west by the Dominion Railway Belt and the Coquihala Divide, and to the south by the Tulameen River.

Bear Creek at low water - August 30th

Area in Acres

The area of Bear Creek is made up as follows:

Bear Creek Watershed .......................... 22,500 acres

Merchantable timber land ............ 7,450 acres
Non-merchantable timber land .... 9,800 "
Fire devastated areas reproducing plentifully .... 3,000 "
Clean burned areas having no ground cover .......... 1,600 "
Barren areas .............................. 650 "

Total .......... 22,500 acres.

Merchantable timbered area  
{Sawlog timber - } 7,450 Acres 
{Tie " - } 
(Mine " - )
General Topography and Drainage

Bear Creek, a fast flowing stream with an approximate length of 14 miles; an even drop of 60 feet to the mile through timbered stands; an even drop of 130 feet to the mile from the intersection of Falls Creek with the main stream, to the stream's outlet into the Tulameen River; an average width of 30 feet and a depth of 12 inches (at low water); finds its source principally from the snow fields of Lookout Mountain. "Elevation 7,500 feet" a distinctive highland feature, forming the highest summit on the divide between the Coldwater River to the west and the Otter Valley to the east, and flowing in a southerly direction through a well timbered territory, finally terminates into a 30-foot box canyon one mile in length located directly north from the Creek's outlet into the Tulameen River.

Rising from barren summits to the north and west, four main feeders, the west fork of Bear Creek, Barber, Falls and Murphy Creeks, flowing over well defined stream beds, join the main waterway four miles up-stream from the Creek's outlet to the Tulameen.
Rising direct from creek bottoms; uniform, well protected, unbroken 15-degree slopes free of windfall, are general throughout timber area. Highland features through sub-alpine type, and barren divides (elevation 5,500), are rugged, rocky and broken. Cut banks rising from creek beds average 6 feet in depth.

Bear Creek Valley looking North from Laws Road

Mean elevation of valley floor _______ _______ _______ _______ _______ _______ 3,500.  
Mean elevation of mountains capping east and western divides - 5,500.  
Capping northern divide _______ _______ _______ _______ _______ _______ _______ 7,000.  

Climate

Geographically placed to the east and in the lee of the Hope Mountains, that form the transient line between the wet and dry belts, Bear Creek Watershed receives a heavier rain and snow fall than the country immediately adjoining Princeton to the east.

Annual precipitation - 35 inches (approximate).  
Mean annual temperature, degrees F. - 45 degrees.  
Depth of snow, Dec. 1st to March 15th - 2 feet.
Fall and Winter season - Oct. 15th to April 30th.
Spring and Summer season - May to 15th October.
Season for forest growth - 5\(\frac{1}{2}\) months.

<table>
<thead>
<tr>
<th>Climatic Conditions - Annual Precipitation Hope-Princeton District for years 1875 - 1898 - 1924</th>
</tr>
</thead>
<tbody>
<tr>
<td>------</td>
</tr>
<tr>
<td>Hope</td>
</tr>
<tr>
<td>(1875)</td>
</tr>
<tr>
<td>(1924)</td>
</tr>
<tr>
<td>Princeton</td>
</tr>
<tr>
<td>(1898)</td>
</tr>
<tr>
<td>(1924)</td>
</tr>
</tbody>
</table>
Soil

A moderate to shallow, light loam on gravel and rock rubble subsoil, with moderate rock outcropping on sidehill slopes. Within bottom lands, moderate light loam on rock rubble and rock. Depth of humus covering, except through fire ravaged areas - 2 in.

FOREST DESCRIPTION

Timber Type

Composed of an averaged mixed stand; forest types may be divided as follows:

Valley floor, (Spruce
lower slopes (Fir
and benches (Balsam
{ White Pine

= Sawlog timber
Average diameter 18"
Mountain slopes
and
Upper benches
( Fir
Balsam
Lodgepole Pine
= Sawlog, tie and mine prop
timber. Aver. diameter 14".

Elevations
above 5,500
( Spruce
Balsam
Lodgepole Pine
= Non-merchantable.
Average diameter 9".

NOTE:
The Coalmont and Merritt coal
mines are logging Lodgepole Pine
for mine props and lagging, and
Douglas Fir for capping timbers
and stringers.

Falls Creek

Spruce alone the Swede Group Trail
Falls Creek
Quality of Timber

Spruce (Englemann):
Sawlog stock is tall, straight, carries few limbs on its merchantable length to a high crown, is mature and free from defect.

Douglas Fir:
Sawlog stock is tall and straight to high, small crown, free of check or pitch seams; clear for two logs, mature and free from defect.

Balsam (Abies Lasiocarpa):
Sound, is of moderate height; free of limbs for first log length to high, dense crown; is mature, with 15% heartrot.

White Pine:
Scattered over area of moderate height; straight, clear, mature and free from defect.

Lodgepole Pine (Pinus Contorta):
Tall, straight, mature and free from defect. (No bark beetle infestation noticed).
Reproduction

Reproduction moderate through timbered stands; attains an average height of 15 feet; is in 30% Spruce, 45% Fir, 15% Balsam and 10% Lodgepole Pine. Sixty years ago a large area, as shown on attached map, was devastated by fire. Area is reproducing densely in 50% Fir, 20% Lodgepole Pine, 20% Spruce and 10% Balsam - is thrifty, averaging 40 feet in height.

Utilization of Timber

A. - Spruce, Fir, Balsam, White Pine lower levels, sawlog and tie timber.

B. - Lodgepole Pine - Mine prop and lagging stock.

C. - Fir 10 to 14 inches - Tie and mine timbers.
# TIMBER ESTIMATE AS FOLLOWS

<table>
<thead>
<tr>
<th>Area</th>
<th>Location</th>
<th>Area in Acres</th>
<th>Spruce</th>
<th>Fir</th>
<th>Balsam</th>
<th>White Pine</th>
<th>Lodgepole Sawlog M bd. ft.</th>
<th>Lodgepole Mine Timber Diameters 8 to 12&quot; M. lin. ft.</th>
<th>Fir Ties No.1</th>
<th>No.2</th>
<th>Sawlog Timber, total in M bd. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Bear Ck.</td>
<td>2,300</td>
<td>14,600</td>
<td>3,168</td>
<td>1,400</td>
<td>680</td>
<td>2,510</td>
<td>980</td>
<td>3,200</td>
<td>6,400</td>
<td>22,158</td>
</tr>
<tr>
<td>B</td>
<td>Barber Ck.</td>
<td>1,200</td>
<td>24,098</td>
<td>12,312</td>
<td>1,100</td>
<td>520</td>
<td>-</td>
<td>1,448</td>
<td>-</td>
<td>-</td>
<td>38,030</td>
</tr>
<tr>
<td>G</td>
<td>Falls Ck.</td>
<td>2,300</td>
<td>11,000</td>
<td>9,244</td>
<td>2,092</td>
<td>1,058</td>
<td>14,200</td>
<td>3,056</td>
<td>-</td>
<td>-</td>
<td>37,594</td>
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<tr>
<td>D</td>
<td>Murphy Ck.</td>
<td>1,400</td>
<td>20,288</td>
<td>10,348</td>
<td>2,228</td>
<td>1,764</td>
<td>1,900</td>
<td>860</td>
<td>-</td>
<td>-</td>
<td>36,528</td>
</tr>
<tr>
<td>E</td>
<td>Lower Bear Creek</td>
<td>250</td>
<td>-</td>
<td>1,900</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2,100</td>
<td>4,200</td>
<td>1,900</td>
</tr>
</tbody>
</table>

**TOTALS:** 7,450 69,986 36,972 6,820 4,022 18,410 6,324 5,300 10,600 136,210

**NOTE:** Above estimates have been subject to following cull - 15% heartrot in Balsam.

**NOTE:** No. 1 ties 8" and over face, 8" deep, 8' long.
No. 2 " 7" " " " 8" " 8' "

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Timber Estimate Continued

TOTAL VOLUME AS FOLLOWS

<table>
<thead>
<tr>
<th>Area in</th>
<th>Acres</th>
<th>Spruce</th>
<th>Fir</th>
<th>Balsam</th>
<th>White Pine</th>
<th>Lodgepole Pine</th>
<th>Total in M bd. feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bear Creek Watershed</td>
<td>7,450</td>
<td>69,966</td>
<td>36,372</td>
<td>6,820</td>
<td>4,022</td>
<td></td>
<td>18,410</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Sawlog timber</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>136,210</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fir Ties</th>
<th>No. 1</th>
<th>No. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,300</td>
<td>10,600</td>
</tr>
</tbody>
</table>

Lodgepole Pine Mine Timber estimate = 6,324 M linear feet

COSTS:— Bear Creek Reconnaissance

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Wages</td>
<td>$18.00</td>
</tr>
<tr>
<td>Food Supplies</td>
<td>13.60</td>
</tr>
<tr>
<td>Horse Hire</td>
<td>8.00</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$39.60</strong></td>
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</table>
LOGGING CONDITIONS

The entire watershed comprises one logging unit. Actual logging operations over timbered area offer small difficulties. Transporting timber from watershed to good booming ground on Otter Lake and Kettle Valley Railway will warrant large initial outlay in eight miles of flume construction.

Clearing bed of stream would involve excessive costs for driving of logs to Tulameen River. A steep fall at point where Bear Creek joins Tulameen River would cause heavy breakage and booming of logs. Tulameen River can be driven but too swift to hold logs at Otter Flats.

No location is offered on Bear Creek Watershed for the erection of a millsite. Railway construction and operation costs too excessive.

Suggested Method of Logging (Fluming)

Summer logging chance - months May to October. Splash dams could be erected at head of all minor feeders to carry logs to main creeks and deck landing in spring. Flume chance following good location over 6% grade.

A whipsaw plant to be erected on Falls Creek for cutting of timbers for the construction of a flume.

Grade from intersection of Falls and Bear Creek following East bank Bear Creek thence along North bank of Tulameen River to good millsite and booming ground on Otter Lake.

Logs to be horse hauled over good locations for tote roads from deck landing to head of flume for driving.

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Slash Disposal During Logging Operations

Piling as logging proceeds.

Costs - Contract labour - 40¢ per thousand.

Burning, 15th September - 15th October.

Costs - Contract labour - 5¢ per thousand.

Advocate clear cutting to a fixed diameter.

(Spruce
Sawlog timber (Balsam - cut to 10" - 12" D.B.H.
(W. Pine

Sawlog and (Fir - cut to 8" D.B.H.
Tie timber

Mine Prop (Lodgepole - clear cut.
and lagging (Pine

FOREST PROTECTION

Comprising the one remaining intact stand of timber of the upper Tulameen Watershed, the establishment of trails through the Bear Creek timber is urgently needed. Natural fire breaks over the barren ridges offer good protection to the north, west and east. The main hazard arises from fire devastated regions to the east and west of the watershed which, if fired, would throw spot fires into the green timber.

Two well graded horse trails constructed by a mining company at a cost of $2,500. traverse Barber and Falls Creeks. Both trails are at present full of windfall and could be opened for travel at small expense. Twelve working days for two men under the supervision of a patrolman would clear both trails for traffic.
Lookout Mountain, directly on the eastern boundary of the Dominion Railway Belt and to the north of Bear Creek (ref. map attached) would make an excellent secondary lookout site over the Otter, One Mill and Summers Creek valleys to the east, Spearing Creek and Voight Valley to the north and Tulameen Watershed to the south and west; a day's travel from telephone and patrolman's station at Tulameen, thence following Laws Camp Road and Swede Group Trail via Falls Creek to Henning Mountain, thence via headwaters Thynne Creek to Lookout Mountain and an established tent camp near good water, one hundred yards south and in the lee of the peak.

To make circuit complete, one day's travel from Lookout Mountain following old Indian trail along the north bank of Thynne Creek to Totem Pole Mill, Thynne ranch (telephone station) and Otter Valley road to Tulameen, would make a two-day's patrol.

The fire hazard to the north and east of Lookout Mountain will be heavy. Periodic fires have caused much down timber. Country is generally rough and unsuited for packhorse travel. A graded horse trail skirting the western boundary of the above area commences directly one hundred yards south of Brookmere Station, Kettle Valley Railway, traverses Brookmere Creek and ends on the barren ridges north of Lookout Mountain.
Timbered slopes -- eastern exposure -- Bear Creek
Looking east into Bear Creek from Henning mountain
Extensive Timber Reconnaissance of

Bear Creek

Tulameen Watershed

Yale District

B.C.

Scale 2 ins = 1 Mile

Legend

- Merchantable Timber
- Non-Merchantable Timber
- Reproducing Areas
- Burns Not Reproducing
- Barren Lands
- Creeks
- Lakes
- Contours
- Roads
- Trails
- Fire Lines
- Height of Land
- Minor Creek Boundaries
- Surveyed Lots
Coldwater Valley

Looking north into Coldwater Valley and Nicola Lake country from Lookout Mtn.
Looking north into Coldwater Valley and Nicola Lake country from Lookout Mtn.
Looking east to Otter, One Mile and Summers Creeks from Lookout Mountain

Looking SW to the Coquihalla Mountains from Lookout Mtn.
Looking east to Otter, One Mile and Summers Creeks from Lookout Mountain

Looking SW to the Coquihalla Mountains from Lookout Mtn.
Forest Protection Plan
Bear Creek Reconnaissance

Tulameen Watershed

Scale 1 in. = 1 Mile

Aug. 1925

Legend
- Trails
- Trails Indistinct