RECONNAISSANCE

of

23 Sections North of

KOPRINO HARBOUR, QUATSINO SOUND.

by

Clark & Lyford, Ltd.,
per Judson F. Clark.

1913

Forest Surveys No. 1088.

1 Map - Scale 20 ohs. = 1 inch.
INDEX MAP

Koprino Harbour, Quatsino Sound.

1913-

Scale 17.75 mi. to 1 inch.
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REPORT OF 23 SECTIONS OF TIMBER
ON VANCOUVER ISLAND, B.C.

A blue print map showing elevations, water courses, lakes, etc., enclosed.

The Cruiser's report made by Clark & Lyford, together with blue print of tabular statement, giving amount of each variety or species on each Section over 10" diameter at breast height, is attached. The details of this tabular statement cover substantially all questions. The general size of the trees are shown in sizes from 10" diameter up, and are generally tall and straight, and free from limbs, such as characterizes the typical and well known nature of Pacific Coast growth.

The forest is alive, healthy, self-perpetuating stand. Natural decay, though small, is annually more than replaced by natural growth.

The probable best use of this timber is for merchantable lumber, cants, poles and pulp wood. There is only a very small area of down timber, which is shown on map attached. A general absence of underbrush throughout the whole tract simplifies operations and greatly reduces the fire hazard. The almost continuous dampness or high humidity of the climate further protects against fire risk.
Fungus, insects or other timber pests are entirely negligible. The stand is healthy and clean.

The 23 Sections are in a solid block, having a deep salt water front of about one mile. The drainage system of most of this area is shown in enclosed map. It will be noted that the water courses mostly converge towards the discharge into Quatsino Sound within the aforesaid water front, thereby making such front the logical milling site where excellent booming, milling and other operating facilities for a large enterprise exist throughout the year.

There is no mill on this property, but the mill site mentioned above can be reached by Ocean going vessels, and is a landlocked harbor.

There are no transportation costs established in a large way, owing to this being largely a virgin territory, although small Ocean vessels make regular trips to and from this Sound to Vancouver, Victoria and other ports.

The markets of the Canadian and United States ports and in fact of the world are accessible because this property lies on, and adjacent to deep, protected tide water. All Oriental shipping to both Canadian and Puget Sound ports pass not far from the entrance of Quatsino Sound.

The gradual upward trend in selling prices of all forest products makes it difficult and possibly misleading to give prices herein.
Skidding and Logging operations, reassembling and transportation to mill may, it is believed, be generally accomplished by chute, donkey, both ground and overhead line, cable tramway and joint railway methods.

The only other operations in the locality is logging and the operation of a nearby Pulpwood mill the Whalen Pulp & Paper Company.

This timber is held under what is known as Crown Timber Limits perpetuated, carrying a yearly tax or fee of $140.00 per Section plus a fire protection fee of $9.60 per Section, making the total yearly carrying charge per Section $149.60. The official numbers of the Limits are shown on statement herewith. The crown stumpage charges are from 50¢ for fir and hemlock to 85¢ for cedar and spruce. These charges are collectible as the timber is cut for commercial use.

No extensive or complete plans for logging, milling and pulp-wood operations or general exploitation have been made and therefore no costs thereof can be given.

The climate is the usual mild, humid one characteristic of the Puget Sound front which permits all operations and shipping to be prosecuted throughout the whole year.

The Titles to the limits are all pooled and held en bloc by the Union Trust Company of Spokane, Washington, in shape for proper and prompt transfer at a price of 50¢ per 1,000 ft. B.M. Terms, one, two, and three years, with 6% on deferred payments.
GENERAL DESCRIPTION.

The tract under consideration comprises surveyed timber limits 1431-50 and 3864-6. They are situated on the West Coast of Vancouver Island, on a peninsula extending between Quatsino Sound and the West Arm. They may be reached by steamer from Victoria, a trip of about 280 miles. There are excellent harbor facilities, which bring the timber within reach of water transportation to all parts of the world. The facilities for transportation will be materially improved by the opening of the Panama Canal in the near future.

The tract can be reached by trail from Koprino Harbor, which is a Bay on the north side of Quatsino Sound. The southern portion of the tract is less than half a mile from tide-water, a portion coming down along the river to a point very near the harbor. All parts of the tract are accessible by trail.

The greater part of the tract, as shown by the drainage system on the map, is tributary to Quatsino Sound at Koprino Harbor. Nearly all of this area can be logged over the divide with the main body of timber, except for the northern portions of Limits 1443, 1442, 1448, 1449, and 1437.

The stand of timber is made up of Hemlock, Silver Fir (Balsam, Red Cedar, Spruce and Yellow Cedar (Cypress) in the following proportions; Hemlock 55%; Silver Fir 22%; Cedar 19%; Spruce 2%; Yellow Cedar 2%. The Hemlock predom-
inates on nearly all the limits. There is, however, an area of several leading species in the stand. As a whole the tract is quite evenly timbered. On T.L. 3866 there is a considerable area even outside of the portion marked "Scrub" on the map, where the timber is small and short, and generally of a scrubby character, although in many places it stands thick.

There are no places where a single species makes up the stand. In small patches here and there the Silver Fir or other species predominates, but no large area appears without hemlock either predominating or forming a substantial portion of the stand.

THE MAP.

The map submitted with this report is on a scale of four inches to a mile. Streams and bodies of water are shown. Boundaries of windfall areas are shown by dot-and-dash lines. The boundary of an area of scrubby timber is indicated by a black dotted line. Trails are shown by dash lines and labeled "Trail." The watershed boundary between Quatsino Sound and the west Arm is indicated by dash lines and marks the line of division between the two drainage systems. Survey lines are drawn heavier than unsurveyed boundaries. Survey posts are indicated by small circles wherever they have been established along the boundary lines or at corners. The elevation, in feet, about sea-level, is indicated at various points by small figures on
the map, thus - 500'.

THE CRUISE.

The volume figures on the cruise sheet refer to sound merchantable wood only. The cruise sheet shows the amount and kind of timber on each limit, the total of each kind of timber and the total by size classes for each species.

The following is a summary of the total cruise in M. feet B.C. Rule of all trees 10 inches and over in diameter:-

<table>
<thead>
<tr>
<th>Species</th>
<th>20&quot;</th>
<th>10&quot;-19&quot;</th>
<th>Rough</th>
<th>Down</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>55% Hemlock</td>
<td>315304</td>
<td>32736</td>
<td>......</td>
<td>......</td>
<td>348040</td>
</tr>
<tr>
<td>22% Silver Fir</td>
<td>107454</td>
<td>29729</td>
<td>......</td>
<td>......</td>
<td>137193</td>
</tr>
<tr>
<td>15% Cedar</td>
<td>95865</td>
<td>3439</td>
<td>21349</td>
<td>2096</td>
<td>122949</td>
</tr>
<tr>
<td>2% Spruce</td>
<td>10048</td>
<td>15</td>
<td>......</td>
<td>......</td>
<td>10063</td>
</tr>
<tr>
<td>2% Yellow Cedar</td>
<td>8298</td>
<td>1365</td>
<td>......</td>
<td>......</td>
<td>10684</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>536969</strong></td>
<td><strong>66950</strong></td>
<td><strong>22914</strong></td>
<td><strong>2096</strong></td>
<td><strong>628929</strong></td>
</tr>
</tbody>
</table>

The Cedar and Yellow Cedar in the "Rough" Class is practically all shingle material. The 10"-19" class in the Cedar and Yellow Cedar will furnish a large number of poles. All the trees 10 to 19 inches in diameter may be put in this class furnishing over 50,000 poles ranging in length from 35 to 70 feet.

**THE WESTERN HEMLOCK** (Tsuga heterophylla) on this tract is of a good size and excellent quality, except in a few places where it is mixed with a stand wherein Cedar predominates. On such types the Hemlock is small and inclined to be scrubby. It occurs everywhere on the tract.

The wood of this Species is excellent material for
all except the heaviest construction work. Its average strength is 88% that of Douglas Fir. It has many good qualities not possessed by its cousin the Eastern Hemlock, whose poor qualities have induced a prejudice against the wood in the market. Western Hemlock in the form of lumber is often mixed with Fir and sold and used for the same purposes. It has many uses as lumber is used extensively for pulpwood.

**THE WESTERN RED CEDAR** (Thuya plicata) is of fair quality on this tract, and averages small in size. It is distributed in mixed stands throughout the whole tract.

This tree furnishes material for most of the shingles used in Canada and the United States. It is also excellent material for telegraph and telephone poles and for ties. It resists decay very well, continuing sound for long periods after dying from over maturity or other causes.

**THE SILVER FIR.** (Abies grandis) is of good size and quality and occurs in all the mixed stands on the tract.

The wood of this tree is especially adapted for box manufacture. It is used as lumber for many of the same purposes as Spruce. It is also mixed with Spruce in the manufacture of wood pulp.

**THE SPRUCE.** (Picea sitchensis) occurs in scattered small groups or as single trees here and there over the whole tract. It forms a small proportion of the stand, but is generally of good size and quality.

**THE YELLOW CEDAR.** (Chamaecyparis nootkatensis) is mostly small in size though of good quality. It occurs in
scattered quantities on the higher elevations. The total quantity is small.

**DAMAGE.**

There are considerable areas of partial windfall throughout the tract. Only the small areas where practically all the trees are thown are plotted on the map. It appears unlikely that any large portion of the tract will be subject to loss through this agency. There are no burned areas, and the danger from fire is slight because of the heavy windfall and the nature of the topography.

**LOGGING.**

The natural outlet for logs from the portion of the tract tributary to Quatsino Sound is down the main valleys to Koprino Harbour. A certain area in the south east part of the tract could be logged more directly south into tide water, but there are no good booming facilities, so that it will no doubt be better to bring all the logs to Koprino Harbour. The extreme northwest corner of the tract will go the other way to West Arm, and can be logged in conjunction with the timber of adjoining holdings. Something over three square miles of the area on the West Arm drainage cannot be brought over into the Quatsino drainage, because of the ridges cutting off this portion from the remainder of the tract. This area at the extreme northeast corner of the tract will have to be logged to the West Arm. The nearest point of the tract is less than a mile and a half from tide-water, and West Arm furnishes
excellent booming facilities.

The main body of timber will require some reading system equivalent to a railroad in its capacities. The construction of a logging railroad would be expensive and impracticable, though not at all impossible. Some overhead cableway device, with an endless cable line for transporting logs will doubtless prove most economical for such a tract as this. This system of logging is now being tested and tried out in several places on the Pacific Coast, and will soon be perfected and come into more general use. Such a system obviates the necessity for heavy and costly grading operations and can be designed in such a manner as to reach several miles. The overhead cableway method of logging will be required only for the more remote portions of the tract, and the cost will be moderate. The nearer portions of the tract can be easily and cheaply logged directly to tidewater. Koprino Harbour offers ample storage facilities for storing logs.

The forest being a mature stand of virgin timber is at a standstill so far as growth in volume of merchantable wood is concerned, the annual growth being practically offset by the normal decay of overmature trees. There is nothing in the present condition of the timber to indicate that there would be any deterioration in quality, should the logging of the tract be deferred for several decades.

CLARK & LYFORD, LTD.

per Judson F. Clark.

Vancouver, B.C.
Nov. 4, 1913.