R 6

HARDWICK E, THURLOW, & SONORA FORESTS

E. W. BASSETT

1926

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B319

B. C. FOREST SERVICE
VICTORIA, B.C.

REPORT

on

PROVINCIAL FORESTS

covering

SONORA, E. & W. THURLOW & HARDWICKE IS.

Vancouver Forest District.

E.W. BASSETT

1926

Reconnaissance File No. R6.

Correspondence Files

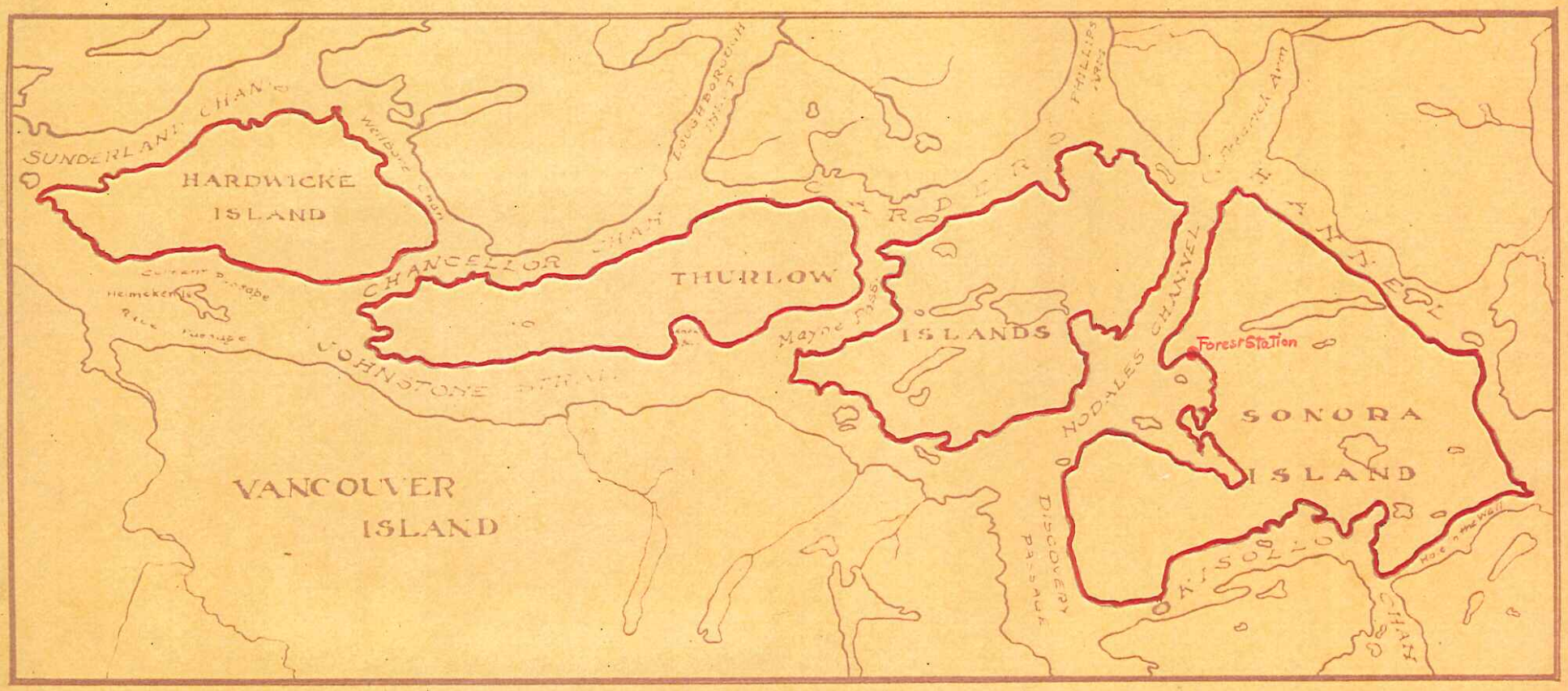
Sonora	No. 056373
E. Thurlow	No. 051465
W. Thurlow	No. 058443
Hardwicke	No. 050057

Maps.

Type Map & Topog. Map for Each Island.

Scale 20 chs. - 1 inch.

"R". Files.



KEY MAP
OF
COAST FOREST SURVEY
1926
Scale 4 Miles = 1 in

C O N T E N T S

Recommendations (F.D.M.) p. 1-4.

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SONORA, THURLOW and HARDWICKE FORESTS

Growing Stock.

These islands possess 88,700 acres of productive forest land. On 51,700 acres of this the virgin stand, estimated at 1,041,000 M., still remains. An average of slightly over 20,000 f.b.m. per acre.

There are 23,100 acres of young growth, but 3,000 acres of this is on land, which is considered to have agricultural possibilities and has not been reserved for timber production, leaving 20,100 acres within the Forests. Logged land which is not yet satisfactorily restocking amounts to 12,600 acres.

The growing stock in these Forests is:-

1,041,000 M.	mature	timber	on	51,700	acres
1-10	year	old	stands	on	15,400	"
11-20	"	"	"	"	3,100	"
21-30	"	"	"	"	1,600	"

Yield.

An empirical yield table made from measurements in stands of the mixed type of fir-hemlock-cedar (which is found in the young growth on these islands) indicates that a rotation of 120 years will produce the greatest sustained yield of merchantable saw timber. At that age 31,910 f.b.m. per acre may be expected from well-stocked stands such as the above. It is impossible to forecast the exact proportion of species, but an average of 50% fir, 30% hemlock and 20% cedar has been produced in the past.

Assuming that the 12,600 acres insufficiently stocked are filled up by nature or by planting within the next ten years, the estimated final mean annual increment will be 8,695,000 from these stands at present immature. Using Hanzlik's formula, the sustained yield for the entire Forests is 17,370,000 f.b.m. annually.

Owing to the shortage of middle age classes, this estimated yield cannot be harvested continuously from the growing stock in its present condition. The mature timber, in which mortality probably offsets increment, would only last 60 years, when the next age class would be only 85 and would provide just two years' logging. Regulation in any case will be difficult to establish, since nearly 80% of the mature timber has been alienated under licence. However, if the cut on the four islands can be restricted to 14 million feet annually (a reasonable possibility for the type of logging operation usual in such forests) the present mature timber would last 75 years, when the young stands would be able to carry the annual cut.

Yield of High Grade Timber.

The above plan, even if possible, supposes that the present virgin stands, with a good percentage of the high grade saw timber on which our export trade largely depends, can be successfully supplanted in the market in 75 years by the second growth cut much younger and therefore with less clear lumber. Such timber will then be in competition with great supplies of similar quality both on the coast and in the interior. It may, therefore, be advisable to hold in coast Provincial Forests the mature timber which is not alienated (if not actually decadent) to provide high grade material when the privately owned stands have been cut. The Crown timber in the lower coast fir belt is a small minority compared with that which has been alienated. For the next decade, at any rate, it is recommended that no sales, other than "hand logging" sales or genuine salvage, be made from these four islands, which would bring the total annual cut, including all alienated timber logged, to a figure in excess of 10 million feet average annually from 1927. This will probably have the effect that the alienated timber will be cut first, leaving the Crown timber for a future market.

Reforestation.

12,600 acres are reported as being unsatisfactorily

restocked; ~~half~~ one third of this area is vacant Crown land. It may fairly be assumed that this land is among the most valuable true forest land in the Province. It is not suitable for agriculture and can be treated definitely as permanent forest. It is close to tide water; the fact that it was logged early in the progress of forest utilization in British Columbia proves its accessibility. It is on comparatively small islands and the fire hazard may fairly be considered low when such improvements and precautions as are recommended have been carried out, particularly including the keeping open of old logging roads for easy access to possible outbreaks of fire. The permanent Forest Station at Thurston Bay is situated in Sonora Forest, and a special emergency fire launch has been built and is held there for the protection of these Forests.

It is therefore recommended that a more detailed examination be made of these 4,500 acres of vacant Crown land which are unsatisfactorily stocked, and that planting to fir and cedar be undertaken on all areas which have been burned or logged not less than ten years ago, and the satisfactory natural restocking of which may be considered improbable. There would be no difficulty in selecting a suitable nursery site on one of the islands, either for seed from the Dominion seed plant at New Westminster, or for transplants from a central nursery near Vancouver. The former would be preferable since the climate and other locality factors would be identical with those of the areas where the seedlings are to be planted in these Forests and surrounding territory later on; there would be less delay and expense in transportation of stock and there would be a suitable headquarters for the nursery foreman at Thurston Bay. With a practical nursery man on the ground it might be found possible to make an earlier start by transplanting seedlings from some of the overstocked natural reproduction, though this practice has not generally been found advisable where nursery stock is available.

Future logging on these islands in Crown timber being allowed only for the improvement of the growing stock, and their management being regarded as a demonstration of forestry practices, it should be possible to

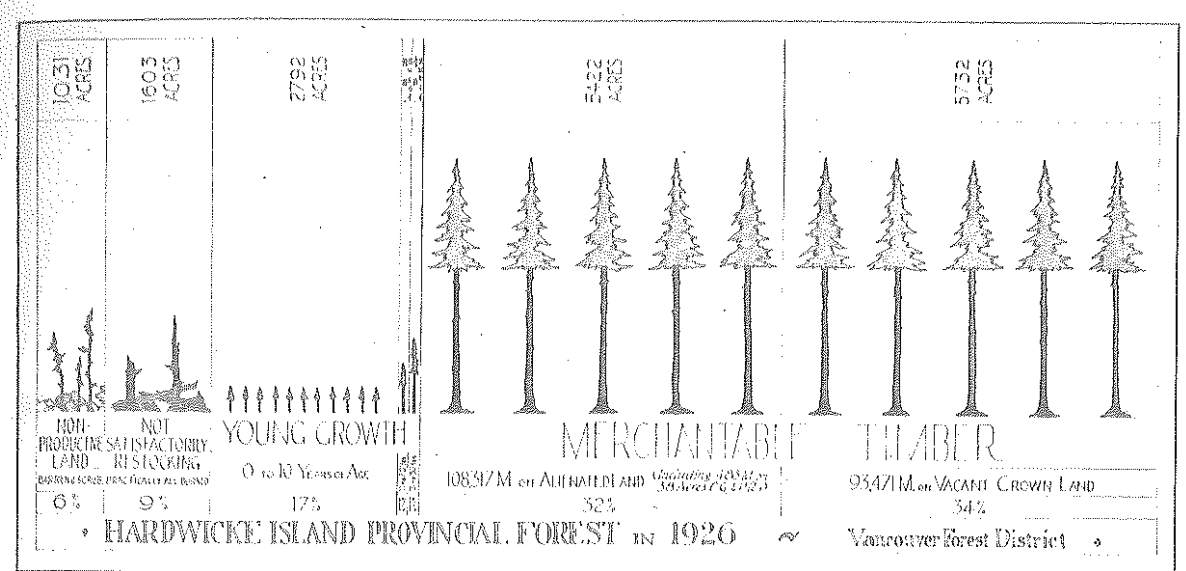
allocate, under Section 4, "Forest Act Amendment Act, 1927", all money received thereby for planting and other improvements needed.

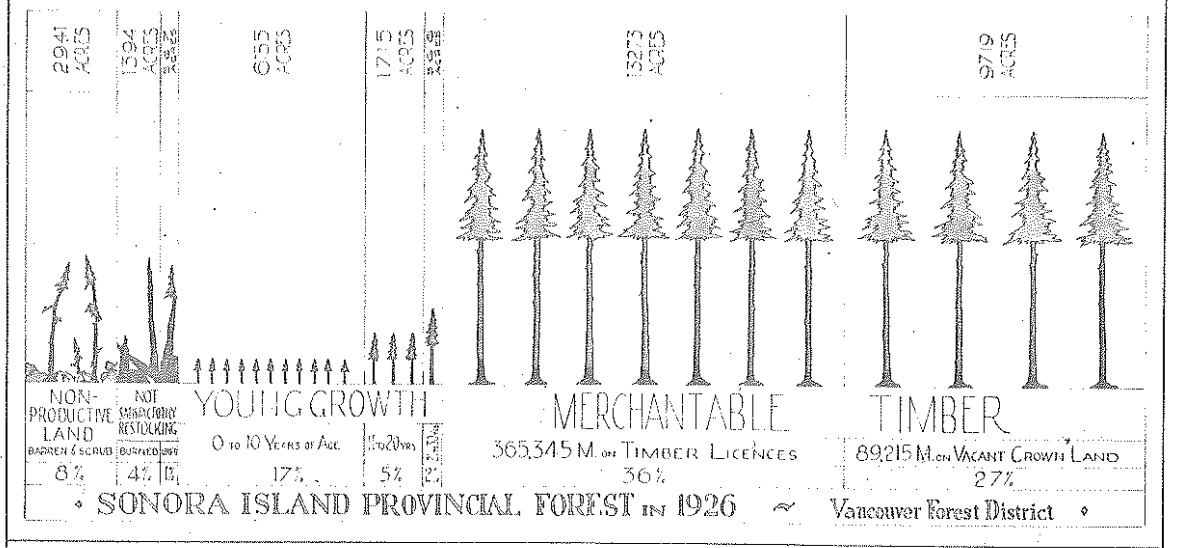
Agriculture.

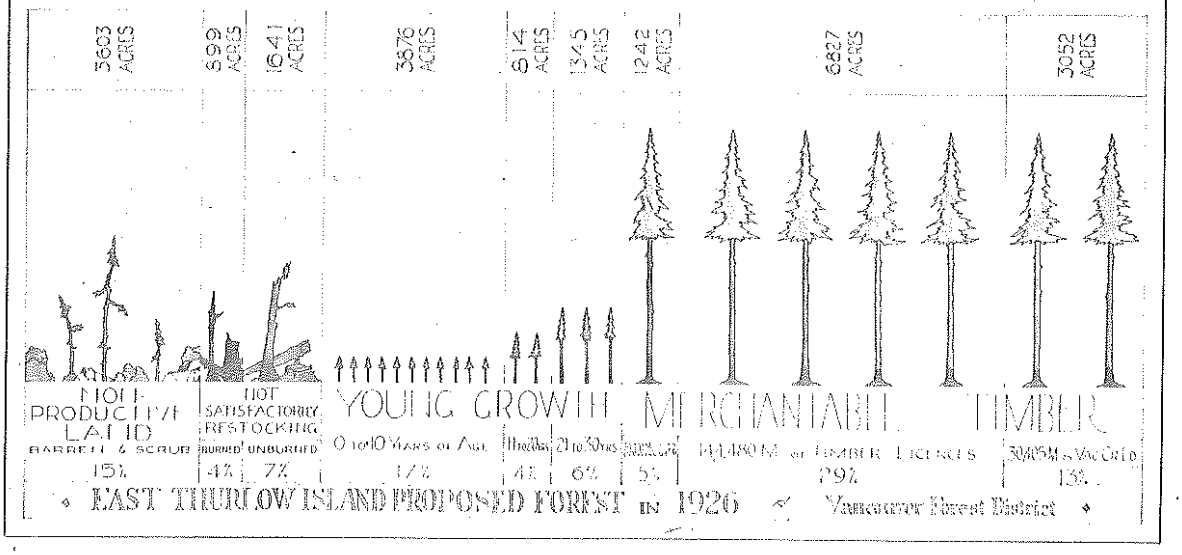
These islands are absolutely without value for economic agriculture from the point of view of a farmer who regards a farm as a money-making business. However good the soil may be, the cost of clearing such lands so far from a city market cannot be recovered from their produce by a farming community. For certain local markets, however, and to a strictly limited extent, there is room for small farming by such as value the natural advantages of climate and surroundings for home-building. Small holdings, gradually cleared, will provide a simple living if the owner is industrious and buys nothing that he could produce himself. Such holdings, however, should be developed only where there is sufficient land in a body for a permanent community. The transportation and other facilities obtained by reason of the logging camps, disappear with the camps in a few years' time. Areas suitable for such settlement have been left outside the Forest boundaries particularly on East Thurlow and Sonora Islands.

F D Mulholland

Assistant Forester.


1031 ACRES
1603 ACRES
2792 ACRES
5422 ACRES
5752 ACRES
NON-PRODUCTIVE LAND
BARREN & SCRUB
6%
NOT SATISFACTORILY RESTOCKING
9%
YOUNG GROWTH
0 to 10 Years of Age
17%
MERCHANTABLE TIMBER
108,917 M on Alienated Land
32%
93,471 M on Vacant Crown Land
34%
HARDWICKE ISLAND PROVINCIAL FOREST IN 1926
Vancouver Forest District


2941 ACRES
1394 ACRES
635 ACRES
1715 ACRES
1323 ACRES
979 ACRES
NON-PRODUCTIVE LAND
BARREN & SCRUB
8%
NOT SATISFACTORILY RESTOCKING
4%
YOUNG GROWTH
0 to 10 Years of Age
17%
11 to 20 Yrs
5%
MERCHANTABLE TIMBER
365,345 M on Timber Licences
36%
89,215 M on Vacant Crown Land
27%
SONORA ISLAND PROVINCIAL FOREST IN 1926
Vancouver Forest District


3603 ACRES
699 ACRES
1941 ACRES
3876 ACRES
814 ACRES
1345 ACRES
1242 ACRES
6827 ACRES
3052 ACRES
NON-PRODUCTIVE LAND
BARREN & SCRUB
15%
NOT SATISFACTORILY RESTOCKING
BURNED
4%
UNBURNED
7%
YOUNG GROWTH
0 to 10 Years of Age
17%
11 to 20 Yrs
4%
21 to 30 Yrs
6%
MERCHANTABLE TIMBER
144,480 M on Timber Licences
29%
30,405 M on Vacant Land
13%
EAST THURLOW ISLAND PROPOSED FOREST IN 1926
Vancouver Forest District

DAVIS-BELLAMY
SURVEY BRANCH
JAN 26 1951
PROPERTY
REG. NO. 7216

BRIEF SUMMARY.

The area covered by the survey included Sonora, East and West Thurlow (sometimes known as Lower and Upper Thurlow, respectively) and Hardwicke Islands. A better and more comprehensive idea of these area will be obtained from the following brief summary.

TOTAL AREAS (Reserved)				
AREA	V.C.L.	T.L's.	CG's &PR's.	Total Ac.
Sonora	18,260.7	17,402.3	665.0	36,328.0
E. Thurlow	8,160.1	11,757.8	2,016.5	21,934.4
W. Thurlow	5,692.6	12,479.5	925.2	19,097.3
Hardwicke	8,786.2	7,915.6	160.0	16,861.8
TOTALS	41,093.2	49,555.2	4,937.2	95,585.6

ADDITIONAL AREAS			
ISLAND	AR.OUTSIDE FOREST	LAKES	Total Ac.
Sonora	1,655.2	1,673.8	3,329.0
E. Thurlow	2,537.8	1,308.4	3,846.2
W. Thurlow	552.6	58.9	611.5
Hardwicke	681.6	78.8	760.4
TOTALS	4,063.0	3,119.9	7,182.9

Note: In above table "Area Outside Forest" denotes Lots excluded from Provincial Forest.

MERCHANTABLE TIMBER				
AREA	V.C.L.	T.L's.	CG's&PR's.	Totals
Sonora	89,215 M	365,345M	650 M	455,210 M
E. Thurlow	30,405 M	144,480M	20,000 M	194,885 M
W. Thurlow	9,530 M	177,445M	1,710 M	188,685 M
Hardwicke	93,471 M	107,834M	593 M	201,898 M
TOTALS	222,621 M	795,104 M	22,953 M	1,040,678M

SUMMARY OF AREAS.

AREA	Merchantable Timber		Young Growth		Forest Land Unsatis. Stocked		Total Produc. Forest Land.		Non-Produc. Land.	
	V.C.L.	Al. L.	V.C.L.	Al. L.	V.C.L.	Al. L.	V.C.L.	Al. L.	V.C.L.	Al. L.
Sonora	9874.9	13333.7	5854.9	3568.8	1126.3	1078.5	16856.1	17981.0	2665.1	481.0
E. Thurlow	3182.6	8096.5	2539.1	4219.6	923.3	1723.7	6645.0	14039.8	2603.3	1184.1
W. Thurlow	995.4	5065.7	1265.8	2428.5	1571.2	5417.4	3832.4	12911.6	1860.2	1045.7
Hardwicke	5734.8	5443.6	1961.3	1284.6	864.8	1149.2	8560.9	7877.4	345.3	759.8
TOTALS	19,787.7	31,939.5	11,621.1	11,501.5	4,485.6	9,368.8	35,894.4	52,809.8	7,473.9	3,470.6

NOTE:

"Alienated Land" above includes T.L's, C.G's, and P.R's. Areas covered by lakes not included in figures. All figures represent acres, and cover the whole island in each case (not merely reserved areas.)

14,889
3,470
17,768

SUMMARY OF AREAS OF IMMATURE TIMBER AND PRODUCTIVE LAND NOT YET RESTOCKED

SONORA ISLAND FOREST

AREA	Satisfactorily Stocked			Not Satis. Stocked	TOTAL
	0-10	11-20	21-30		
V.C.L.	4121	775	252	934	6082
T.L's	1885	911	314	538	3648
C.G's&PR's	148	28	-	489	665
Totals	6154	1714	566	1961	10395

EAST THURLOW ISLAND FOREST

AREA	Satisfactorily Stocked			Not Satis. Stocked	TOTAL
	0-10	11-20	21-30		
V.C.L.	788	448	378	839	2453
T.L's	2570	71	138	1329	4108
C.G's&PR's	176	120	236	361	893
Totals	3534	639	752	2529	7454

WEST THURLOW ISLAND FOREST

AREA	Satisfactorily Stocked			Not Satis. Stocked	TOTAL
	0-10	11-20	21-30		
V.C.L.	1030	235	-	1571	2836
T.L's	1594	394	119	4591	6698
C.G's&PR's	302	-	-	370	672
Totals	2926	629	119	6532	10206

HARDWICKE ISLAND FOREST

AREA	Satisfactorily Stocked			Not Satis. Stocked	TOTAL
	0-10	11-20	21-30		
V.C.L.	1748	43	154	783	2728
T.L's	930	86	-	819	1835
C.G's&PR's	116	-	-	-	116
Totals	2794	129	154	1602	4679

Note:
Above figures are representative of reserved areas only on each island.

From here on in this report, each island will be treated separately.

S O N O R A I S L A N D

Location and Boundaries.

This island, sometimes referred to as Upper Valdez Island, is situated in Sayward Land District, bounded on the west by Discovery Passage and Nodales Channel, on the north-east and east by Cardero Channel and on the south by Okisollo Channel.

General Topography.

(a) Mountains.

The island, containing roughly 40,000 acres, as a whole may be classed as rugged and mountainous. In the north, Mt. Tucker - now used as a protection look-out station - rises to an elevation of some 3000 feet. Mt. Turnbull, centrally located on the island, has an elevation of roughly 2500 feet. The south-western portion of the island has a central eminence of 2200 feet, and a fairly uniform slope on all sides from there down to the sea - probably steepest, if anywhere, towards the south-east. On the east there are several high, rocky, barren areas

with altitudes averaging 2200 feet. That portion of the island directly south and south-east of Cameleon Harbour is the only area of any pronounced size that may be called flat or rolling.

(b) Lakes

There are several comparatively large lakes on the island covering in all an area of 1525 acres. Chief of these is Florence Lake, situated in the northerly part of the island with an outlet through Florence Creek to Thurston Bay. It covers an area of approximately 900 acres, is three and three-quarter miles in length, and lies at an elevation of 235 feet. It provides power for the Forestry Station at Thurston Bay and seldom freezes in winter. Up to the present no logging has taken place on the lake, although several lines of precise levels have just recently been run from Thurston Bay to the lake to ascertain the possibilities of a road in to the timber adjacent. There is a good canoe and also a dugout to be found at the western end of the lake and these at present are the only craft upon it.

Edith Lake, situated roughly 60 chains due south of Florence Lake, has its outlet to that Lake. It is a small lake - some 57 acres in all - and lies at an elevation of approximately 800 feet. South-east from this lake, another 60 chains, is Heidrick Lake, covering approximately an equal area, but being at an elevation of 900 feet and draining to the south into St. Aubyn's Lake and thence to Owen Bay.

In the southern part of the island are St. Aubyn and Hyacinth Lakes, situated roughly 1 mile north and ¼ miles east of the head of Owen Bay, respectively. The former is the larger and covers approximately 325 acres, while the latter covers only 118 acres. Both lakes drain into Owen Bay.

There are several other smaller lakes on the island, chief of which is Mitchel Lake. It lies roughly one mile west of Old Churchhouse, may be reached by a trail from there, covers 41 acres and drains eastward into Calm Channel.

(c) Harbours and Surrounding Waters.

The best harbours to be found on the island are situated on its western coast. They are Thurston Bay, with its adjacent lagoon, and Cameleon Harbour. The latter probably offers the best all round anchorage in a blow, although there is a float and boom at Thurston Bay. A westerly wind throws quite a swell into Thurston Bay which makes riding at the float very uncomfortable, while the lagoon may only be entered on a flood tide by limited draft boats, and with a good knowledge of the channel. On the southern coast of the island the best anchorage is a bay just west of Owen Bay or back of Grant Island in Owen Bay. In the latter case care should be taken not to anchor too close to the head of the Bay, as there is a fairly long run-out there and the flats extend a considerable distance out into the bay.

The waters surrounding the island are for the most part all fast-water, with two exceptions, namely Nodales Channel and Discovery Passage, which may be navigated at any time, barring in an extreme blow. In the remaining waters adjacent to

the island, Okisollo, Hole in the Wall, and Yuculta, strong tide ups, rapids and overfalls are encountered and their waters should only be navigated at slack water, or, if otherwise, only with a good knowledge of local conditions, channels, etc.

CLIMATE.

The climate may be classed as a moderate coastal climate with an average fire season.

Following are the precipitations and mean temperatures over the last three years as recorded at Thurston Bay.

YEAR	PRECIPITATION	MEAN TEMP.
1923	78.42	49.27
1924	72.5	48.0
1925	49.72	49.7

An idea of the relative humidity of the region may be gained by a comparison of the following figures compiled for the month of July, 1926 - (probably one of the worst months of the fire season.)

Thurston Bay	Victoria
Av. of Minimum 5 P.M. Readings for July, 1926	Av. of Minimum 5 P.M. Readings for July, 1926
64.4	42.8

INDUSTRIES

This island is essentially a forest producing one and at the time of writing the only farming development is on four pre-emptions. Two of these are situated in Cameleon Harbour and the remaining two in Owen Bay. One of the latter, situated on Lot 1094 is especially productive - raising all descriptions of vegetables, berries and fruit and serves to show what can be done on some of the scattered small areas of land suitable for such purposes on the island. Clearing costs, however, are excessive and almost prohibitive.

From a mining standpoint very little interest seems to be manifested in the island at the present time, although prospects are reported in the north.

Game and fish are abundant and easily obtainable in all parts of the island.

A feature of the island is the protection look-out station just recently established on Mt. Tucker at an elevation of approximately 3000feet.

It commands a splendid view of the adjacent islands and mainland to the west, north and south, but gives an inadequate view in a south-easterly direction.

Okis Island, a small island adjacent to Sonora Island near Barnes Bay in the south, is being used as a fur farm (mink and martin) and it is possible that parts of Sonora would be quite suitable for a similar purpose. The operator of such a farm could trap his own stock right on the island as signs of both animals are abundant.

Summing up, however, the only really practical use for the island as a whole is that of applied forestry.

DESCRIPTION OF THE FOREST

(1) Types Represented

The type represented throughout is the coastal fir-hemlock-cedar type with occasional White Pine and Yellow Cedar on the higher elevations. Scattered Spruce is occasionally found in depressions. The stands on the whole appear healthy and thrifty.

Conk, in average coast extent, and somewhat more prominent on Hemlock, was noticed throughout, while mistletoe and blister rust are present to a limited degree on the Hemlock and White Pine, respectively.

Age Classes and Their Distribution.

Referring only to young growth in age classes 0-10 years, 11-20 years, 21-30 years, etc., and only to the larger areas of such.

(1) 0-10 Year Class - 7114 acres.

Practically all the young growth on Sonora Island falls under this class. The largest areas are located in the south-western peninsula of the island along its western shore, and the area south and south-east of Cameleon Harbour. These stands average 8 to 9 years of age and run for the most part well over 6000 trees per acre.

North of Cameleon Harbour is another good sized area under this class. Here the trees are somewhat younger and average 5 to 6 years of age.

The remaining large area in this class is located in that country east and south-east of St. Aubyn Lake. This is a Hemlock-Fir-Cedar stand and averages 8 to 10 years of age.

Other smaller areas are to be found north of the eastern end of Florence Lake and in the north of Lot 430.

(2) 11-20 Year Class. - 1744 acres.

Only a small part of the young growth on the island comes under this class. The largest area is situated south-east and east of Thurston Bay. Here the stand runs approximately 6750 trees per acre of Hemlock, Fir and Cedar and averages 11 years of age. This is an excellent stand and should be carefully guarded when operations are commenced on timber back of it and adjacent to Florence Lake.

(3) 21-30 Year Class. - 566 acres.

Areas in this class are small and scattered. One typical area is located on the north-western portion of Lot 189. The stand here is almost entirely Hemlock of average age 22 years and with a density of approximately 5000 trees per acre. Other scattered patches are situated along the Yuculta shore of the island.

Besides the above, some areas of second growth are to be found on different areas over the island. A notable one of these is located adjacent to the southern boundary of T.L. 45113. The stand averages 45 to 50 years of age and runs 2000 trees to the acre. Species represented is almost entirely Hemlock.

(4) Forest Land Unsatisfactorily Stocked - 2205 acres.

The total area of forest land unsatisfactorily stocked on this island amounts to 2205 acres. Of this total some 768 acres have but a very small chance of reproducing naturally. This latter for the most part is fire

denuded and is comprised of smaller areas located on the following lots: T.L. 5160P, T.L. 36456P and land adj. N. & S., L. 516, T.L. 11588P and L. 1094. The remaining 1437 acres are lands either freshly logged or freshly burned, which, up to the time of examination have had an insufficient interval to restock. Such areas should again be examined within a few years time. (See appendix for complete summary of young growth.)

UTILIZATION.

(1) Present Utilization and Markets.

On this island, up to the present there has been approximately 10,000 acres logged. Practically all this land was alienated at the time of logging but 90% of it has since reverted to the Crown.

At the time of writing, the only logging operations on the island are those of handlogger's working along the southern coast of the southwest peninsula of the island. They are taking off Fir, Hemlock and Cedar - varying the species by the existing market requirements. Their market is the open log market at Vancouver with a possibility of occasional small scales to the mill operating

at Shoal Bay on East Thurlow Island to cover local demands for rough lumber. Besides these above mentioned markets there is a chance for intermittent sales of swifters to adjacent logging outfits.

(2) Difficulties in Way of Complete Utilization of the Forest.

The general topography of the island may be considered the chief obstacle in the complete utilization of the Forest on the island. The rugged nature of the country makes logging-road building costs and actual roading cost excessive and in many cases prohibitive. It likewise makes many smaller areas of good timber practically inaccessible as far as the resources of the average logging out-fit of the region is concerned.

Another negative feature in the matter of complete utilization of the forest is the fast water (strong currents, rapids, overfalls, etc.) adjacent to some shores of the island... These waters make booming of logs along those shores almost an impossibility and most certainly a long chance. An excellent example of more or less in-

accessible timber on the island is that body along Florence Lake. The whole area south of the lake is heavily timbered and the northerly part of it might easily be roaded to the lake. Once at the lake there is a possibility of two routes - firstly by way of a road to Thurston Bay, or, secondly east on the lake to the head and thence out to Cardero Channel. The Thurston Bay route has an almost prohibitive grade directly back of the Bay while the eastern route (although the end of the lake is only 10 chains from the salt water) offers no booming ground, due to the Yuculta Rapids along that shore.

(3) Development Possibilities for Next Few Years Under Present Conditions.

From a compilation and averaging of cruises available on Sonora Island it is estimated that of the total merchantable stand on the island approximately 43% is Fir, 13% Cedar, 40% Hemlock and the remaining 4% other species including White Pine, Spruce and Yellow Cedar.

The timber available for development purposes under present conditions during the next few years may be divided into three blocks.

(a) The timber adjacent to Florence Lake. This stand will naturally come out via that lake. There are two ways to salt water, both having their advantages and disadvantages.

(1) To bring the logs out to Thurston Bay means the construction of 1½ miles of skidroad, skyline or railroad. This route brings the logs to a good booming ground independent of tides and weather.

(2) To take the logs out the east end of the lake to the Yucultas is the alternative. This route requires about a quarter of a mile of chute or tight-line to salt water, where trouble will most likely be great due to the fast water and the rapids. A boom across the Channel to catch the logs is out of the question, for the Channel must be left open. Owing to the uncertain element of risk involved in this route it is doubtful which route is preferable.

Besides the above, the timber on T.L's. 9494p, 9496p, 9499p, 9500p and 11589p is to be considered. There are three outlets for this, as follows:

(1) By way of Florence Lake, entailing the roading of the timber on 9500p, 9499p and 9496p to Hendrick Lake, thence to Edith Lake, and also bringing that from 9494p and 11589p to Edith Lake, thence to Florence Lake and out to the main road as mentioned above.

(2) Out from Edith Lake via T.L's. 9493p and 9494p. As before, the route would be to Edith Lake, then by way of the valley to Thurston Bay. This route would also get the timber from T.L. 9493p, Lot 674 and a piece from the north end of T.L. 9495p.

(3) Via St. Aubyn Lake. A road from Edith to Heidrick, from Heidrick to St. Aubyn Lakes and to salt water following the creek through L. 1095 will be necessary. By damming the outlet of St. Aubyn Lake and constructing a flume of 1¾ miles, the logs could be sluiced to salt water in Ckisollo.

The timber on T.L's. 5161p and 5160p will come out to Old Churchhouse via Mitchel Lake.

(b) The second body of merchantable timber is that shown on Lots 514, 515, 516, T.L. 45113 and X 363. The cruise of these areas, as kindly supplied by the Vancouver Lumber Co. is as follows:

AREA	FIR	CED.	HEM.	W. PINE	TOTAL	Av./Ac.
L. 514	6296M	1859M	4857 M	59M	13071M	23 M.
L. 515	5924M	4414M	10062M	3138M	23538M	37 M.
L. 516	13807M	1113M	8902M	465M	24287M	38 M.
X. 363	4850M	160M	2120M	40M	7170M	11 M.

It is proposed by the owners to log 514, 515 and 516 by a railroad running north through these claims, the precise levels for which have already been run.

(c) The remainder of the merchantable timber lies north of Florence Lake. Here the ground is very rough and rugged and for the most part high. An idea of the timber on some parts of this area may be gained from the following cruises as shown in Mr. Gregg's report of 1924.

AREA	FIR	CED.	HEM.	TOTAL	Av./Ac.
TL.1499p	11000M	4000M	9000M	24000M	38M
TL.420P	15000M	2000M	6000M	23000M	36M

The timber on T.L. 37003 is scattered and found usually in the draws. The ridges for the most part are inaccessible and non-merchantable. The Crown Land north of T.L's. 37003 and 1499p has fair timber scattered over it, but does not present one

good large sized logging chance, although there are several smaller chances which are good.

A small stand of about thirty acres of excellent tall, clean Fir and Cedar is to be found on Lot 1189. Very rough ground intervenes between it and the shore, however. Besides this there is a considerable amount of fair timber scattered along the shore.

MANAGEMENT.

(1) Main Objects.

From a management point of view for the future years, the island need not be considered as a unit for the specific purpose of filling the timber requirements of any one market in perpetuity. It should rather be classed as a portion of our general coastal timber assets and as such managed in conjunction with them for the sustained supply of the coast timber industries. Consequently it would not be advisable to attempt to form and carry out any definite working plan to apply to the island alone.

(2) Silvicultural Treatment.

Our coastal timber, as a whole, represents an uneven-aged stand. An extensive selection system might be applied to this whereby successive areas would be logged and all trees removed down to a specified minimum D.B.H. When the whole area has been cut over in this way the area first cut would be ready for a re-cut and the process repeats itself. In time, the whole stand would become one of even-aged groups on separate areas. Sonora Island, classed as mentioned in the previous paragraph - merely as a working portion of the whole - might very well be utilized as one of these successive areas and as such would eventually represent an even-aged group.

(3) Determination of Sustained Yield.

The following figures have been supplied by the Research Department to represent rough average yields that may be expected per acre in this region.

Rotation	Av. Yield / Acre Saw Material.
80	21430 Bd. ft.
100	27,270 " "
120	31910 " "
140	36210 " "
160	39884 " "

In the previous tabulated yields the species represented are approximately 50 %, 30%, and 20% of Fir, Hemlock and Cedar, respectively.

This determination will be based on a rotation of 120 years using a yield of 31910 board feet per acre.

The total area of forest land is 34837 acres, which would be capable of producing 1,111,616 board feet at 120 years.

The mean annual increment over the 120 years amounts to 266 board feet per acre, and, since the total area of land open to young growth (that is, areas already under reproduction, together with those suitable, but not at present satisfactorily stocked) is 11628 acres, we may expect from these lands a total mean annual increment of about 3,000,000 board feet.

The present stand of merchantable timber on the Island amounts to 455,210,000 board feet.

Using E.J.Hanzlik's sustained yield formula:-

$$Y = \frac{Vm}{r} + I$$

Where "Y" is the sustained annual yield, "Vm" the volume of mature timber above rotation age, "r" the rotation and "I" the mean annual increment of the immature timber, we arrive at a sustained annual yield of approximately - 6,900,000 board feet for this Island.

The Von Mantel formula, $Y = \frac{Vm}{\frac{1}{2}r}$, used in the U.S. National Forests, would give a sustained annual yield about 7,600,000 board ft. - a difference of 700,000 bd.ft., as compared to Hanzliks. This method, however, neglects all consideration of the immature timber, and as a consequence, perhaps does not apply as well to the case as the previous formula.

The third method, especially applicable to the case where the actual growing stock is in excess of the normal growing stock, is Heyer's formula:

$$Y = I + \frac{V-NV}{x} \quad \text{where}$$

"I" = actual M.A.I. = $\frac{1,111,616,760}{120}$ = 9,263,473 bd.ft.

"V" = actual growing stock = 455,210,000 bd.ft.

"NV" = normal growing stock = $\frac{31920 \times 34837}{2}$ = 555,998,520

"x" = the period of years over which the surplus of "V" over "NV" (or the deficit, if "NV" is greater than "V") is to be distributed. For this determination "x" might be taken as one third the rotation or 40 years.

With the above figures this formula then gives a sustained annual yield of about 6,700,000 bd.ft.

In the latter method, the "x" is a more or less optional figure and may become fixed when a definite plan of management has been laid out, which at the present time in this case does not appear practical. correctly and in an exact calculation it would be

necessary to materially alter several of the above used figures through a study of growth over a period of years (i.e., the figure used for M.A.I.). Consequently, it is likely that E.J. Hanzlik's method gives a figure most applicable to this area.

PROTECTION.

(1) Fire Damage in Last Seven Years.

Comparative with the total area of the island there has been but a small area burnt over in the last seven years, and that in 1922. The burned area comprises two fires. The larger of these lies at the extreme south-east of the Island and borders on the Hole in the Wall. It represents an area of approximately 3085 acres and for the greater part swept over a high rocky, semi-barren, mountainous area, consequently doing little damage from a timber standpoint. The only other fire on the Island during the above mentioned period was on a small area in the north of the Island and bordering Cardero Channel. It represents roughly 200 acres burned and is best located by the west boundary of S.T.L. 3713, which passes centrally through it.

(2) Recommendations for Improved Protection.

(a) That where logging operations are to be carried out on the Island under departmental supervision, no highlead or skyline systems be permitted. Ground lead or modified lead might be supplemented for

these more usual practices. In this way, dangerous dry slash hazards will be avoided and likewise the younger growth present in the stand will, to a far greater extent, be left undamaged.

(b) That protective restrictions be placed upon all campers, fishermen, hunters, trappers or prospectors travelling the Island and, if necessary, special permits be required to cover these activities.

(c) That all such restrictions, rules, proclamations, etc., be prominently displayed where most likely to be seen by persons implied in those regulations, and all local residents and transients be especially educated to such restrictions.

(d) That no attempt be made at artificial reforestation of the Island.

(e) That in future, logging of areas should, where practical, be so planned that all timber tributary to any one booming ground or particular route of access will be taken out by one continuous operation, thereby avoiding the necessity of using roads through areas previously logged and which may contain excellent stands of reproduction.

(f) That the following old skidroads, which, at the present are in fair condition, but partly grown over, be opened up for the purpose of easy access to certain areas of young growth in case of fire danger.

(1) An old fore and aft road running from the shore line of Lot 1139 in Cameleon Harbour southerly to within fifty chains of Ckisollo.

(2) An old road and trail beginning near the north-west corner of Lot 1130 at the head of Cameleon Harbour and running south-easterly to Barnes Bay.

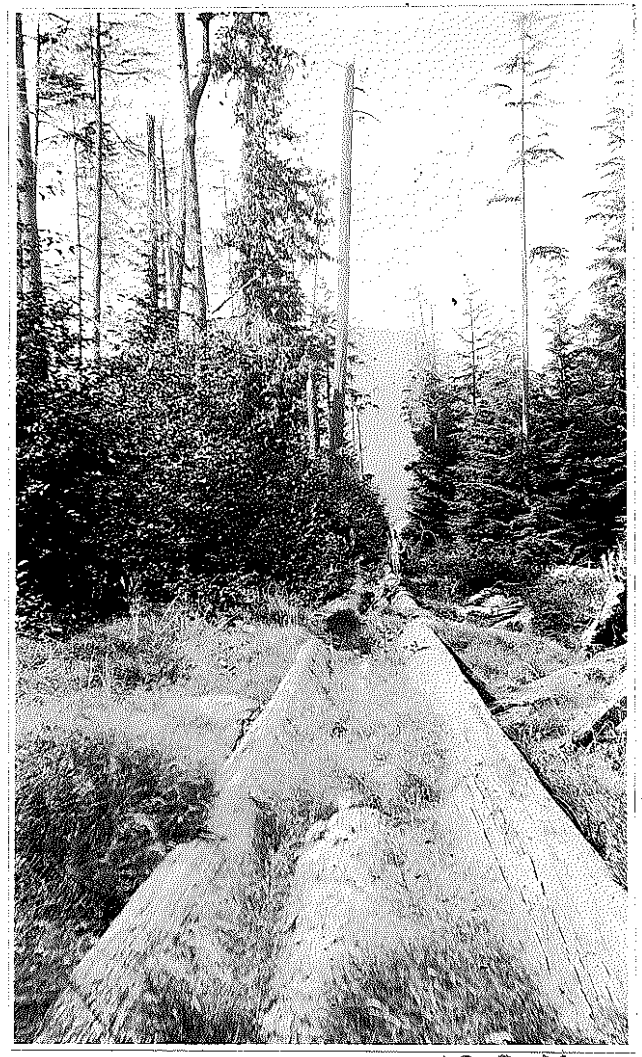
The above two roads will give access to one of the largest areas of young growth on the Island - namely all that area from Cameleon Harbour south to Ckisollo. In the event of fire in the area mentioned the proximity of Cameleon Harbour and these trails to the Forest Station at Thurston Bay would save considerable precious time in the arrival of a fire-fighting crew which otherwise must necessarily go by launch all around the south-western peninsula of the Island, and, arrived in the Ckisollo, make a steep climb north into the area.

(3) Old roads and trails leading to Florence and St. Aubyn Lakes from Thurston Bay and Cwen Bay, respectively.

At least the former of these two would be of very practical use. The road in question is at present in fair condition and offers good travelling, but should be brushed out somewhat now to save more extensive work later. With the aid of some permanently located boats or canoes on Florence Lake this road offers a quick and easy overland route to the Cardero Channel side of the Island. The second road to St. Aubyn Lake from Cwen Bay gives access to a considerable area of young growth.

Abandoned Logging Roads of the Region.

Old Cross-Skid Road near Simmons Lake, East Thurlow Island



K.C.M.

Old Fore and Aft Road near Shorter Point, West Thurlow Island.

EAST THURLOW ISLAND.

LOCATION AND BOUNDARIES.

East Thurlow (or Lower Thurlow) Island, situated in Range 1 of the Coast District, is bounded by Cardero Channel on the north, Mayne Passage and Blind Channel on the west, Nodales Channel and Johnstone Strait on the south and Nodales Channel on the east.

GENERAL TOPOGRAPHY.

(a) Mountains.

There are three conspicuous landmarks on the Island. Chief of these is Mt. Brougham rising from the southern shore of Hemming Bay Lake to an elevation of approximately 2000 ft.

Mt. Eldon, 2000 feet elevation, and another mountain of like elevation are the remaining two. They are situated due south of Mellin Lake and on the extreme north-east of the Island respectively. The latter, on its Cardero Channel side, is an almost straight rock wall for several hundred feet above the shore and may be considered inaccessible on that side.

Other prominent elevations are as follows: A rise of 1400 feet due north from Mellin Lake, one of 1500 feet in a south-westerly direction from Bickley Bay and two other of 1000 feet and 1500 feet, north and north-east of Hemming Bay, respectively.

(b) Lakes.

The largest lake on this Island is Hemming Bay Lake. It has an area of approximately 580 acres, an elevation of 60 feet, and is situated at its south-eastern tip, 12 chains from the head of Hemming Bay, The B.C. Mills T. and T. Company, who have used the lake for log transportation for many years, have damned this tip at its outlet and constructed a log flume from there to the Bay. The water level was further raised by the damning of another creek outlet of the lake on its south-eastern side, which likewise formerly drained to Hemming Bay. In this latterly mentioned dam, fish ladders have been constnucted. The Company operates a 38 foot gas towboat on the lake for moving logs from their road mouths down to the flume, taking supplies up to the camp, etc. A short railway incline connects the tip of the lake and start of

navigation with the Bay. There is an almost constant westerly breeze on the lake, and at times the water becomes quite rough, considering the size of the lake. This fact is due to the straight sweep of the wind down Johnstone Strait, across Mayne Passage and then thru the Max Lake - Mellin Lake draw to Hemming Bay Lake and then to Nodales Channel. There is good fishing in this lake and at its extreme eastern and western ends it is the home of a considerable number of beaver.

Simmons Lake is next in size to Hemming Bay Lake. It covers approximately 320 acres, lies at an elevation of 200 feet and drains north-easterly to Hemming Bay Lake. This lake has also been used for the moving of logs by the B.C. Mills T. and T. Company. It is situated 100 chains south-west of Hemming Bay Lake and 50 chains north-east of the Johnstone Strait side of the Island opposite Pender Island. The lake may be reached either by an old skidroad running from the shore to the south-western end of the lake or by an old railway grade beginning at the head of a bay just west of the south-east corner of Lot 16. This latter road takes one to the lakeshore almost 30 chains from its north-

eastern tip. Another old trail, now in poor condition, runs along the creek from Hemming Bay Lake to Simmons Lake. Excellent fishing is to be had in the lake. There are no boats on the lake.

Mellin Lake, situated 28 chains west of Hemming Bay Lake, has an elevation of 80 feet and covers roughly 190 acres. Mt. Eldon to the south and another mountain to the north rise steeply to 2000 feet and 1500 feet, respectively, from its shores. This lake likewise drains to Hemming Bay Lake and has been used in logging operations. An old fore and aft road, partly salvaged connects it with the western end of that lake. Mellin Lake, like Hemming Bay Lake, is especially susceptible to strong westerly winds. At present no craft is on the lake.

Caesar Lake, Vera Lake, Max Lake and Artificial Lake are the remaining bodies of water on the Island. Of these the two former are largest and are situated a mile east of Charles Bay and just south of the western end of Simmons Lake, respectively. Max Lake lies west of Mellin Lake in the Mellin Lake - Hemming Bay Lake draw. All four of these lakes have at one time or another been used for log transportation purposes.

Simmons Lake - East Thurlow Island.

From South-western End.

(c) Harbours and Surrounding Waters

This Island is exceptionally fortunate as regards harbours and sheltered waters. Booming grounds are plentiful and camp sites and good fresh water easily found at almost any place along its shores. Some of the outstanding shelters are as follows: Shoal Bay, Bickley Bay and Crawford Anchorage in the north. The former of these offers a government wharf and float, a store and post office. On the west shore is Charles Bay. This indentation offers good shelter, but has quite extensive mud flats. Hemming Bay, on the eastern shore of the island is also an excellent shelter. The B.C. Mills T. and T. Company have a float there. Besides the above mentioned shelters there are several other unnamed shelters that make excellent booming grounds.

The surrounding waters of the island are, with two exceptions, favorable at all times to any craft. These exceptions are Blind Channel, which at certain tides presents a very fast run, and Johnstone Strait from Edith Point to Turn Island which often, with a strong wind bucking tide, is very bad water for a small craft.

CLIMATE

A moderate coastal climate with an average fire season. Average precipitation of 70 inches per annum of which approximately 5 inches is in the form of snow.

INDUSTRIES

From an agricultural standpoint, at the present time practically nothing is being done on the Island, with the exception of several small truck gardens worked by residents of Shoal Bay. There are, however, several large areas on the Island with soil suitable to farming, but these same areas represent some of the best stands of reproduction on the island which necessarily means high clearing costs. Several pre-emptions were located in one of these areas - namely between Bickley Bay and Hemming Bay Lake, but they have since been abandoned, and at present there remain no pre-emptions on the Island.

There are several mineral claims, situated in that country just south-west and south-east of Shoal Bay that have had considerable development work done upon them. No work is being carried on at present, however, although very good prospects are reported.

There has been several shingle bolt operations carried out on the Island. The largest of these was in the area north-west of Simmons Lake where a small lake was damned and over a mile of "U" flume used.

Logging forms the chief industry, at one time or another practically the whole Island having been logged off. At the present time it is just a question whether it will remain as a chief industry for future years, in the event of this Island being gazetted as a Provincial Forest, or, if the Island be, not reserved, but thrown open to settlement, it fall into secondary importance beside agriculture and other pursuits. Even should the latter be the case the logging industry will always hold a prominent place on the Island, for there are very large areas fit for nothing else but forestry purposes.

Fish, game birds, deer, mink and martin are fairly plentiful on the Island and the many old logging roads give easy access to their haunts.

DESCRIPTION OF THE FOREST.

Types Represented.

The type represented throughout on the Island is the coastal Fir-Hemlock-Cedar type with occasional White Pine on the ridges and Spruce in the depressions. The stand appears healthy and thrifty with conk, etc. , present only to average coast extent. Blister rust on Pine, and Mistletoe on Hemlock were noticed to a small extent.

AGE CLASSES AND THEIR DISTRIBUTION.

This paragraph will treat only with young growth. For reference purposes it will be mentioned in age classes from 0-10 years, 11-20 years, 21-30 years, etc., and only the larger areas will be mentioned here due to the scattered and patchy locations of a great part of the stand.

(a) 0-10 Year Class. - 3881 acres.

The majority of the young growth on the Island comes under this classification. The largest area is located west and south of Simmons Lake. Here the stand averages six years of age and is composed of Cedar, Hemlock, White Pine, Fir and occasional Spruce. It appears healthy and thriving.

Other areas under this head are located west of Mellin Lake, west of Caesar Lake, and east of and west of Storey Lake.

(b) 11-20 Year Class. - 998 acres.

There are two areas of sufficient size to warrant mention here under this class- namely due west of Hemming Bay and extending half a mile inland along that shore of the Bay, and an area due south of Bickley Bay. These stands run from 4000 to 5000 trees per acre.

(c) 21-30 Year Class. - 1880 acres.

The best and largest areas under this class is located due north of the eastern end of Hemming Bay Lake. Here the stand is composed of Hemlock, Cedar, Fir, W.Pine and Spruce and averages roughly 4000 to 5000 trees per acre. This is a very excellent stand - one of the best on the Island - and two permanent sample plots have been established by the Research Department on this area.

Other stands of this age are situated along the shore just south of John's Point, just east and due south of Shoal Bay and east and south-east from the head of Bickley Bay. The latterly mentioned area runs very strongly to Fir especially adjacent to the shore of Bickley Bay.

Besides the above classification there are several portions of the Island that have been selectively logged. Young growth over these areas is in patches and often shows fairly wide variations in age, making classification and definite boundaries by age classes difficult. Such areas as Lot 27 and a large area north-east of Hemming Bay are typical examples of such. Generally speaking, it may be said selectively logged areas run strongly to Hemlock and climax types.

(d) Forest Land Unsatisfactorily Stocked - 2647 Acres.

All areas classed under this heading on this island have up to the time of examination, had an insufficient interval to restock, being either freshly logged or freshly burned. They should again be examined within the next few years for possible young growth. (For complete summary of young growth see appendix.)

FACTORS AFFECTING REPRODUCTION.

(a) Fire.

This factor has been and probably will continue to be to a lesser extent, one of the most important of factors as regards reproduction on the Island. By the close of 1926 it is likely that logging operations on the island will be at an end for some years to come and such being the case the fire hazard will be considerably decreased from this agency. There still remains, however, the hazard due to fishermen camping ashore, hunters,

prospectors, settlers, etc., and strong restrictions should be placed upon such as regards fire. If fire can be kept out till the close of operations on the Island there is no reason why this factor should not be considered only of secondary importance for a good many years to come.

(b) Wind.

Situated as it is on the inside passage of Vancouver Island, wind in any appreciable amount on this Island as far as forest damage is concerned is negligible. The only part of the area at all open to wind damage is the southern portion of the Island, which takes the full sweep from Johnstone Strait.

(c) Logging.

All indications, from the stand of young growth viewpoint, seem to point to a return to ground lead methods on the Island as the best poling. In every case where old ground lead was practiced the reproduction is thriving under a good supply of scattered seed trees. Where high lead has been used, the area has most likely burned over (perhaps several times), seed trees are fewer and in many cases scant, soil has been impaired and the reproduction set back several years. This is one reproduction factor that should

be carefully considered in future logging practiced on the Island.

(d) Erosion.

This factor seems to come on the Island as an aftermath of fire. Several areas that have been badly burned and soil later eroded from them now offer only bare rock. Such area offers very poor chance for reproduction.

(e) Disease.

Mistletoe on Hemlock and Blister Rust on White Pine were the only two diseases noticed on young growth. The former of these seemed to occur in patches and those where the trees were living under poor environme nt. The White Pine Blister Rust in the majority of cases is affecting a great number of the young trees and is a real menace to the White Pine reproduction. The U.S. Forest Service have been studying the disease and have numerous marked trees in this region.

(f) Slides, Lightning and Insects.

These factors represent but a small hazard to young growth on the Island and may be considered practically negligible.

K.C.M.

Young Growth, L.905, W.Thurlow Island
Age 8-15 years - 4500 trees/acre.

Young Growth W.of Simmon's Lake, East Thurlow Island.
Age 3-7 years - 5000 trees/acre.

UTILIZATION.

Present Utilization and Markets.

At the present time the only large logging outfit on the Island is that of the B.C. Mills T. and T. Company, who are operating in the north-east portion of Lot 27, roading the logs to Hemming Bay Lake, towing down the lake, fluming to Hemming Bay and finally booming them there. This company, however, when through here will probably be leaving the Island. Besides this operation there is a small gas donkey show being logged in Charles Bay and a hand logging chance being worked just west of Bickley Bay.

The market for timber is the open log market at Vancouver, or, as in the case of the B.C. Mills T. and T. Company, their own mill at Vancouver.

At Shoal Bay, a small one man gas engine mill cutting rough lumber chiefly and some planed stuff is operating and purchasing logs from the nearby small logging shows. The capacity of the mill is about 1000 F.B.M. per day.

Difficulties in Way of Complete Utilization of the Forest.

As was the case with Sonora Island, the steep and rugged hills in parts of this Island necessarily make certain areas of the forest inaccessible from a logging standpoint. For the rest, however, practically all features of the Island are favorable to logging operations - that is, it has large lakes for log moving, fair road grades into these lakes, and a considerable number of good natural booming grounds.

Development Possibilities for Next Few Years Under Present Conditions.

The total area represented by the merchantable timber areas available for development in the next few years under present conditions, is, comparative with the total area of the Island, very small. It amounts to roughly only 12%. Of this timber, from a compilation and averaging of available cruises it is estimated that approximately 33% of the stand is Fir, 25% Cedar, 37% Hemlock and the remaining 5% other species including Spruce and White Pine. This may be separated into four general blocks as follows:

(a) A block surrounding Mt. Eldon and lying between Mellin and Simmons Lakes.

This stand is on a rough rugged area and averages from 0 to 20 M. per acre. The ground rises steeply from the shores of both Mellin and

and Simmons Lakes with bluffs quite frequent. If brought out to either of these lakes there are old roads out from each of them that might again be utilized for roading purposes.

(b) North of Mellin Lake is a second block of virgin merchantable timber. The area is again a rough mountainous one over its greater part, rising steeply on the Mellin Lake side. The stand averages from 10 to 35 M per acre and its most likely outlet is to the north and by utilization of old roadbeds leading to Charles Bay.

(c) A block south-west of Bickley Bay including X. 94 and T.L. 10603p.

This area shows its best timber in its western portion. Here the stand averages 40 M per acre, Fir and Hemlock. The country is high and rough and will offer a considerable problem from a logging standpoint. The complete shoreline of the area is steep rock bluffs while centrally in the southern part of the area the land rises to 1500 feet.

(d) The fourth and last block of any importance, as regards size, lies south of Hemming Bay Lake. It consists, for the most part, of an area in Lot 27 that was selectively logged for Fir and Cedar years age. There now remains about 25M per acre of Hemlock, together with a fair number of Cedar poles. Patches of reproduction are to be found throughout the area and are thriving and healthy.

MANAGEMENT.

(1 & 2) The objects of management and the silvicultural treatment of this Island may be considered the same as those for Sonora Island. (See page 20).

(3) Determination of Sustained Yield.

This Island offers 20,685 acres of land suitable to forest requirements and which, using a yield per acre the same as previously used for Sonora Island (see page 21), should be capable of producing approximately 660,000,000 bd. ft. at 120 years.
The area open to young growth at present amounts to 9,405 acres, which would give an annual increment of 2,501,730. The normal growing stock for the area

given by $NV = \frac{Ir}{2}$ amounts to 330,132,600 bd. ft. The actual growing stock is 194,885,000 bd.ft., so that this island, as was the case with Sonora, shows a deficit of actual growing stock which might be distributed over a period of years until normality is attained.

The sustained annual yields for East Thurlow Island by the different methods are then approximately as follows:-

(a) Hanzlik's Method:

Sustained annual yield = 4,125,000 bd.ft.

(b) Von Mantel's Method:

Sustained annual yield = 3,250,000

(c) Heyer's Method:

(Using 40 year period of distribution of deficit.)

Sustained annual yield = 2,120,000 bd.ft.

PROTECTION.

Fire Damage in Last Few Years.

The fire damage in the last seven years on this Island has not been very extensive. It comprises only some 155 acres represented by two fires.

The larger and older of these occurred in 1919 and covered 130 acres in the southern portions of X. 94 and S.T.L. 10603p, north of Hemming Bay Lake. A considerable part of this area is now bare rock and so far gives few indications of reproduction.

The other fire occurred in 1923 on Lot 1674, near the shore, and in the southern part of Lot 1675 on the shore. The area burned, for the most part, was rocky scrub.

Hazards and Recommendations for Improved Protection.

(a, b, c, d & e) As for Sonora Island (See page 22-23)

(f) That the following old skidroads and trails be re-opened for the purpose of easy access to the Island in case of fire danger.

(1) An old road from Bickley Bay to Hemming Bay Lake. The majority of this road at present offers fair travelling although it is just beginning to grow over. A portion of it, in Lot 1689, requires

re-establishing as it has been partly lost and in many places is hard to follow.

(2) An old trail from the south-western end of Hemming Bay Lake to Simmons Lake and the old railway grade from the north-east of Simmons Lake out to the shore on Lot 16. The trail is only in fair shape at present, but the grade, with very little clearing near the centre portion of its length can be put in excellent condition.

(3) An old fore and aft road from Blind Channel to Max Lake and thence to Mellin Lake.

This road has been partly salvaged, but is in good condition for travel over the majority of its length. At present only fireweed and occasional willow and alder have grown in on it.

The above mentioned three roads, with an arrangement as regards boats on Hemming Bay Lake and Mellin Lake, would divide the whole Island into three parts, all of which may be reached on one side by launch and on their inner side by trails. If kept in travelling condition - and it would require only a minimum amount of work to do this - these roads offer quick and time saving access to practically any portion of the inner part of the Island.

WEST THURLOW ISLAND.

LOCATION AND BOUNDARIES.

West Thurlow (or Upper Thurlow) Island is located in Range 1 of the Coast District and is bounded by Chancellor and Cardero Channels on the north, Blind Channel and Mayne Passage on the east and Johnstone Strait on the south.

GENERAL TOPOGRAPHY

(a) Mountains.

This Island, representing roughly 19000 acres, may be considered fairly rough and mountainous country, although at no place does it rise to any very great elevation. There are several chief rises of which an elevation of some 1500 feet is the highest. This latter is situated centrally on the northern shore of the Island and north-west from Knox Bay. The remaining chief elevations are situated just north-west of Blind Channel, north of Butterfly Bay, south-east of Shorter Point and 1½ miles east of the head of Vere Cove, and represent elevations of 700 feet, 800 feet, 800 feet and 1300 feet, respectively.

(b) Lakes and Streams.

There is only one lake on the Island and that a very small one situated in the southern portion of Lot 350. It represents only about 20 acres.

Fair sized streams, however, are abundant and the majority of them flow the year round. Some of the larger of these find their outlets at the following locations:- Blind Channel, Butterfly Bay, Knox Bay (probably best and largest on the Island) Vere Cove, a bay just west of Shorter Point, a bay ¾ of a mile east of Shorter Point and a bay just west of Tucker Point.

(c) Harbours and Surrounding Waters.

The best all round harbour offered by the Island is Blind Channel. There is a wharf and float here and although at certain stages of the tide there is a fairly fast run of water through the Channel it still offers good shelter.

Knox Bay, the headquarters of P.B. Anderson's operations, likewise offers a wharf and fair shelter, but is more open to a blow from Johnstone Strait.

Besides the above mentioned harbours, Vere Cove, a bay near the north-west corner of Lot 355, a bay just east of Shorter Point and Butterfly Bay, all offer good shelter for booms.

The surrounding waters of the Island are, generally speaking, navigable at all times. Blind Channel and the Green Point Rapids adjacent to the north-eastern end of the Island present fast water at certain tides, but may be run at almost any time. Chancellor Channel and Johnstone Strait present no difficulties for the average boat except in the event of a heavy blow, when the latter especially gets very rough. In such a case a particularly bad spot is just west of Eden Point at the meeting place of the Strait, Chancellor Channel and Current Passage. Mayne Passage offers no difficulties to practically any craft.

CLIMATE

The Island has a very moderate coastal climate. Average yearly precipitation is 70 inches, of which 5 inches comes in the form of snow to a depth of 3 feet. Temperature ranges from 0-80 degrees with a mean for the year around 50 degrees. The fire season is an average coast one with a high average relative humidity.

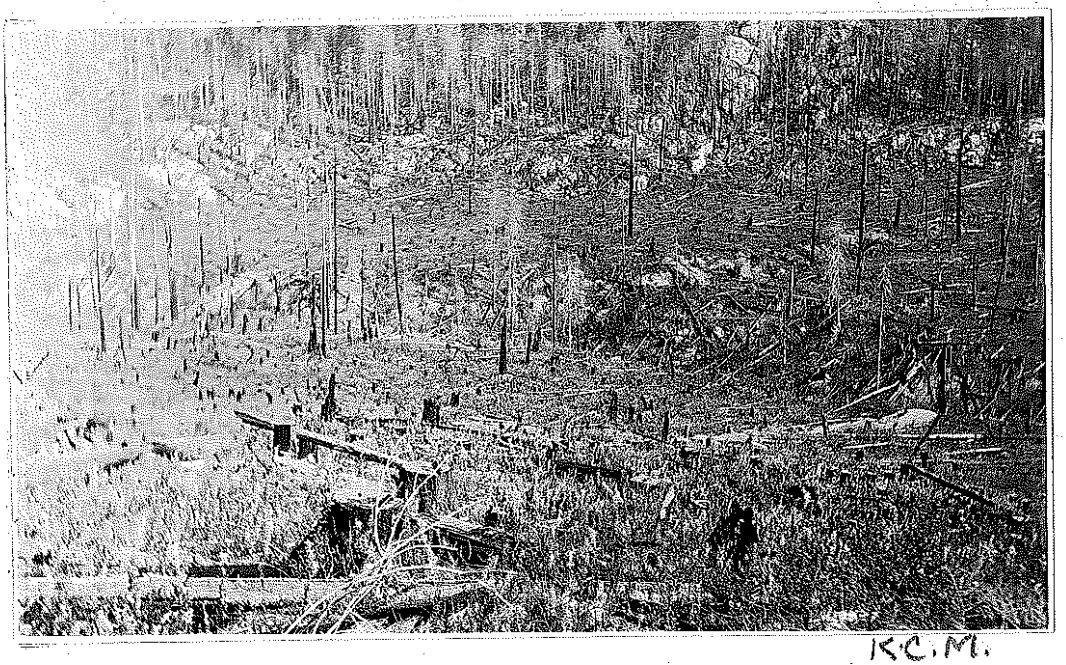
INDUSTRIES.

As was the case with Sonora and East Thurlow Islands, logging has played the largest part in industry on the Island. At the present time it still remains as such, although the merchantable timber is practically at an end and very shortly operations must necessarily close. Some hand-logging is being practiced along the shores.

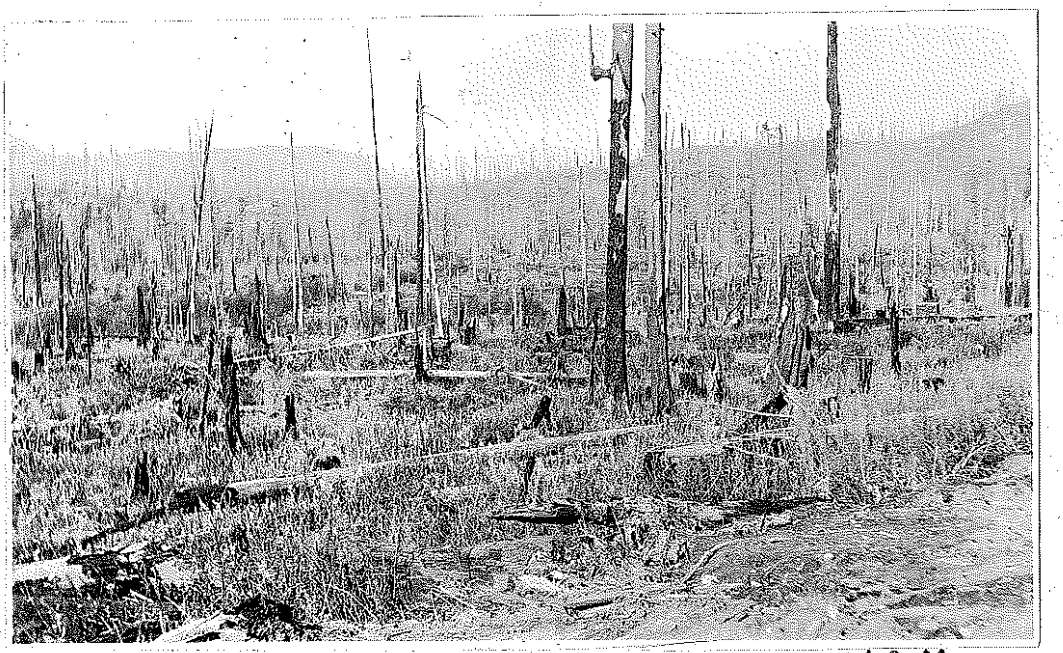
Two other notable projects are operating on the Island, namely , a shingle mill and a cannery at Blind Channel. The former, operated under lease, seems to be working out very successfully. They are cutting only the better grade shingles, shipping by scow to Vancouver and selling through the regular channels there. Blind Channel, besides the above, also boasts a store and school.

The Island offers good hunting both for deer and game birds.

From a prospecting, mining or agricultural standpoint, however, very little seems to have been accomplished on the Island.



K.C.M.



K.C.M.

Fire denuded areas near Knox Bay, West Thur--low Island. Note absence of ground cover and seed trees.

DESCRIPTION OF THE FOREST.

Types Represented.

The type represented throughout is the coastal Fir-Hemlock-Cedar type with occasional White Pine on the ridges and Spruce in the depressions. Where stands remain they appear healthy and thriving with defect present only in average quantities. Mistletoe and White Pine Blister Rust are present on Hemlock and White Pine, respectively, but to no alarming extent.

Age Classes and Their Distribution.

Referring only to the younger growth in age classes 0-10 years, 11-20 years, 21-30 years, etc., and only to the larger areas of such.

(1) 0-10 Year Class. - 2946 acres.

There are three fairly large areas worthy of mention under this class. The first of these is situated in the north-eastern portion of the Island, adjacent to Greene Point. Here the stand is mixed Hemlock, Cedar, Fir and Pine, averaging 5 years of age and running at present approximately 11000 trees to the acre.

The second area is located west of Blind Channel. It has been selectively logged, however, and the stand is more or less broken up by groups of old standards. Where examined it averaged 10 years of age and ran about 9000 trees per acre of mixed Hemlock, Cedar, Balsam and White Pine.

The third area lies adjacent to Butterfly Bay. The stand averages 8 years of age, is composed of mixed Hemlock, Cedar and Fir and runs, at the present time about 9000 trees per acre.

Besides the above, there are several other smaller areas under this class, situated along the north shore of the Island between Shorter Point and a point a mile east of Tucker Point and also another area in the seedling stage on portions of Lots 353 and 351.

(2) 11-20 Year Class. - 629 acres.

Under this class there are again three areas worthy of note. The largest is situated on portions of Lot 111 and X.6387 on the southern shore of the Island, west of Knox Bay. The stand represents mixed Hemlock, Cedar and Fir, runs about 5000 trees to the acre and averages 11 years of age.

The other two areas are located on the south portion of Lots 354 and 355 and an area 60 chains east of Shorter Point. They both run about 10,000 trees per acre where plots were taken and average 14 and 11 years of age,

(3) 21-30 Year Class. - 119 acres.

There is very little young growth in this class on the Island. Where it occurs it is chiefly in very small areas. One such area, rather larger than the rest, is located centrally in the northern portion of Lot 327. Here the stand runs roughly 7000 trees per acre of Hemlock and Cedar and averages 26 years of age.

(4) Forest Land Unsatisfactorily Stocked - 6988 acres.

On this island there are 6988 acres of forest land which at the time of examinations were found to be unsatisfactorily stocked. Of this area some 3346 acres have but a poor chance of restocking satisfactorily by natural means. The areas which go to make up this total are practically all fire denuded and lie for the most part in the Knox Bay operation. They may be found on the following lots: L. 79, L. 80, L. 14, L. 20, L. 286, L. 595, S.T.L. 43634 and S.T.L. 31746.

The remaining 3642 acres represent freshly logged or freshly burned areas which have not yet had sufficient time to reproduce. Such areas should again be examined within the next few years.

FACTORS AFFECTING REPRODUCTION.

(a) Fire and Erosion.

Young growth, speaking generally, at present covers but a small per-cent of the areas on this Island that it might cover. Large areas, which formerly yielded

excellent timber and on which at one time there must have been a fair amount of good soil, have been so severely burned after logging that at present they offer very little chance for reproduction. On many such areas the soil is rapidly being eroded from the slopes by the heavy precipitation current over the area, leaving only bare rock or large portions of the country with practically no ground cover. The Knox Bay area, burned over in 1922, is a typical example of such a case. In many parts of this large logged and burned area, besides considerable denudation, much of the former forest fringe has been burned and natural reproduction chances appear slim at best for a good many years to come. (See illustrative photos of this area.)

(b) Wind.

The western half of the Island, especially along its southern face, is open to the full sweep from Johnstone Strait. This, however, in former times does not seem to have occasioned any very appreciable amount of damage to the forest.

(c) Logging.

All indications, from the stand of young growth viewpoint, seem to point to a return to ground lead methods on the Island as the best policy. In every case where old ground lead was practiced the

reproduction is thriving under a good supply of scattered seed trees. Where high lead has been used the area has most likely burned over (perhaps several times), seed trees are fewer and in many cases scant, soil has been impaired and the reproduction set back several years. This is one reproduction factor that should be carefully considered in future logging practiced on this Island.

(d) Disease.

The young growth on this Island seems to be practically free from disease as compared with Sonora and East Thurlow Islands. There are a few traces of mistletoe in some of the older stand of reproduction, but very little White Pine Rust was noticed.

UTILIZATION.

Present Utilization and Markets.

There are at present two logging companies operating on the Island, the P.B. Anderson outfit and Hansens. The former of these is the larger and is operating this fall west of Knox Bay on Lot 938.

The Company expects to bring their operation to a close on the Island with the completion of this show.

Hansen is operating two camps on the western end of the Island. The larger of these two operations is back of Vere Cove with that harbour as a headquarters and booming ground. This camp is working a half mile incline up from the beach with a mile and a half of railway beyond that. The second camp is working a beach show along the north-western portion of the Island.

Besides the above mentioned large operators several hand-loggers are operating along the shores at different points.

A shingle mill operating at Blind Channel has been previously mentioned in this report.

The market employed by these companies is the open log market at Vancouver.

Difficulties in Way of Complete Utilization of the Forest.

Over its greater part, the slopes, etc., on this Island are of a nature suited to logging operations The surface, speaking as a whole, is fairly uniform and not to any great extent rugged. A considerable number of draws and benches are evident throughout. There are, however, of necessity a few stands made more or less

inaccessible by rock bluffs, etc., principally along the shoreline and to a lesser extent in the interior. In a few places such stands are likewise outside the reach of a sufficient water supply. Summing up, in this case there are very few difficulties in the way of complete utilization of the forest, this Island rather lends itself to logging operations.

Development Possibilities for Next Few Years Under Present Conditions.

Generally speaking, practically all the merchantable timber has already been logged on this Island and that which remains is for the most part in scattered patches. The stand originally represented chiefly Douglas Fir and Cedar with Hemlock and White Pine present in smaller quantities. Some scattered Balsam, also, was on the Island. At the present time, however, the remaining stands run largely to Hemlock--50% on the average--practically all stands composed of the more valuable species having been taken up and logged off. A virgin stand running approximately 30M. per acre and located centrally near the eastern end of the Island probably is the largest remaining stand worthy of mention. Here it is estimated the stand averages approximately 50% Hemlock, 30% Fir and 20% Cedar and other species.

MANAGEMENT

The objects of management for this Island may be considered the same as those enumerated for Sonora Island (See Page 20 of this report).

SILVICULTURAL TREATMENT.

Over the majority of this area the same silvicultural treatment as outlined for Sonora Island would probably apply. To those areas which have been badly burned, however, it would most likely be necessary to apply some previous artificial reforestation treatment as an endeavor to bring the growth on those areas within an approximate age class represented by the remainder of the Island restocked by natural means.

(3) Determination of Sustained Yield.

The total area of land suitable for forest on this Island amounts to 16,744 acres, which, using a yield per acre the same as previously used for Sonora Island (see page 21 of this report), should be capable of producing approximately 534,300,000 bd.ft. at 120 yrs. Areas now under, or satisfactory to reproduction, total 10683 acres, capable of giving an annual increment of 2,841,678 bd.ft. The normal growing stock for the Island amounts to 267,234,240 bd.ft., while the present stand or actual growing stock totals 188,685,000 bd.ft., so that in this case, a deficit is again presented for distribution over a period of years until normal growing stock is reached.

The sustained annual yields for this Island approximately as follows:

(a) Hanzlik's Method.

Sustained annual yield = 4,400,000 bd.ft.

(b) Von Mantel's Method:

Sustained annual yield = 3,150,000 bd.ft.

(c) Heyer's Method:

(Using 40 year period for distribution of deficit.)

Sustained annual yield 2,500,000 bd.ft.

PROTECTION.

Fire Damage in Last Few Years.

The fire damage in the last seven years on this Island is represented chiefly by two large fires. The first and larger of these occurred on the Knox Bay area in 1922 and covered approximately 3000 acres. It burned completely across the Island from Knox Bay to Chancellor Channel and in many places was so severe as to burn practically all the mineral soil on the area.

The second occurred in 1922, also, on the northern portions of Lot 353 and 354, Lot 831 and adjacent country. It covered approximately 1300 acres, a considerable areas of which had been logged.

Two other smaller fires occurred in 1923 and 1924 on the northern portions of Lots 350 and 351, respectively, and covered roughly 200 acres between them.

Hazards and Recommendations for Improved Protection.

(a,b,c and e) Same as for Sonora Island (See pages 22-23 of this report.

(d) That some special silvicultural treatment, i.e. artificial reforestation on a small scale, be applied to those areas on this Island which are fast being denuded due to the effects of fire and heavy precipitation. Portions of the Knox Bay area in particular come under this recommendation.

(f) That the following old trails and skid-roads be kept open for the purpose of easy access to the interior of the Island.

(1) The railway grade now being utilized by the Hansen interests from Vere Cove.

(2) An old fore and aft road beginning near the south-west of Lot 45, in a bay just west of Shorter Point and an old grade beginning near the south-east of Lot 353, These two roads might easily be joined as only 30 chains separate them and they would then offer a trail completely across the Island.

(3) The mainline north and south grade of the Knox Bay operation. This will also give a road to within a few chains of the other side of the Island and approximately cuts the Island in half.

Stand of Young Growth, Lot 95, East Thurlow Is.

Abandoned Railway Grade, Knox Bay Operation. K.C.M.

HARDWICKE ISLAND.

LOCATION AND BOUNDARIES.

Hardwicke Island is located in Range 1 of the Coast District and bounded by Sunderland Channel on the north-west, Wellbore Channel on the north-east and Chancellor Channel and Current Passage on the south.

GENERAL TOPOGRAPHY

(a) Mountains.

There are two chief rises on the Island. The higher of these is Mt. Royston, situated centrally and rising to an elevation of roughly 3000 feet. The other mountain is located near the eastern extremity of the Island and attains an elevation of 2300 feet.

Besides the above mentioned, there are several other notable elevations of which Craven Hill, situated in the north-west part of the Island, is the highest, with an elevation of 1700 feet. Another rise of 1500 feet is located just west of Mt. Royston. Rises of 1000 foot elevation are located in the south-west and north-east portions of the Island.

(b) Lakes and Streams.

Two small lakes are to be found on the Island. They are located near one another and centrally along the northern half of the Island. The larger of these, Lily Lake, lies at an elevation of approximately 800 feet and covers 65 acres. It is surrounded by virgin timber and drains north-westerly to Sunderland Channel.

There are several comparatively good sized streams on the Island. The largest of these is some 4½ miles in length and flows in a westerly direction to Sunderland Channel, its mouth being near the north-west corner of Lot 181. Another fair sized stream flows to Current Passage, meeting it near the south-west of Lot 54. Smaller streams are abundant and to be found throughout the Island.

(c) Harbours and Surrounding Waters.

This Island, generally speaking, offers very little in the way of harbours or shelters. There are two notable anchorages, however, which, although not absolute shelter, still in most cases can be depended upon. These are located just on the north-east extremity of the Island in Wellbore Channel and

on the south-west shore of the Island back of Earles Reef, respectively. A few other scattered booming grounds are to be found along the shores, but due to the fact that the majority of the Island is subject to strong westerly winds during the summer months and the easterly portion of it to south-easters during the winter, these are not exceptionally dependable.

The surrounding waters of the Island are not as favorable to navigation as those of the other Islands treated in this report. Chancellor Channel, Sunderland Channel and Current Passage are all open to strong winds and at such times are very hazardous to smaller craft. Current Passage and Wellbore Channel also present very strong tides and rapids which add considerably to the problem of navigation in these waters.

CLIMATE

An average coast climate with an average annual precipitation of some 70 inches. The temperature ranges from 0-80 degrees F., with a yearly mean around 50 degrees F. The Island has an average coastal fire season with a fairly high relative humidity. All the Island, barring the eastern extremity, is subject to strong westerly winds in summer. The south and eastern portions are exposed in winter to prevailing south-easterly winds.

INDUSTRIES.

Logging has been and at present remains as the chief industry on the Island, although very little was being done just at the time of this reconnaissance. The last operation was conducted north of Earles Reef where donkeys were used for yarding and horses for roading purposes.

A noteworthy project on this Island is a boat-building establishment situated in a small bay approximately half way through Wellbore Channel. The plant builds the average size craft of the region, makes repairs, etc., and seems to be operating quite successfully.

Agriculture is being practiced by residents at Earles Reef and results obtained there are well worthy of mention, the cultivated areas there being, without doubt, better than any other such projects on the other Islands treated in this report.

This Island offers exceptionally good hunting both for deer and game birds.

DESCRIPTION OF THE FOREST.

Types represented.

The coastal Fir-Hemlock-Cedar type is represented throughout the Island. Other species present in lesser quantities include Balsam, White Pine, Spruce and occasional Cypress on the ridges. Stands appear healthy and thriving with usual defects of conk and mistletoe, etc., present only in average quantities.

Age Classes and Their Distribution.

Referring only to the younger growth in age classes 0-10 years, 11-20 years, 21-30 years, etc., and only to the larger areas of such.

(1) 0-10 Year Class. - 2824 acres.

Practically speaking, all the young growth on the Island comes under this class. Probably the largest body of it is located on the western end of the Island where the young growth, although in the seedling stage (1-3 years), covers a fairly large area and promises a good stand.

Other areas under this class are located on logged areas along the shore in Wellbore Channel and in scattered areas along the Current Passage side of the Island.

(2) 11-20 Year Class. - 268 acres.

The areas of young growth in this class are small and scattered to such an extent that separate mention seems unnecessary. Sufficient to say that where found the

stands run approximately 6000 trees per acre of Fir, Hemlock and Cedar and in most cases are in group form on old ground lead operation areas. They appear healthy and thriving.

(3) 21-30 Year Class. - 154 acres.

Only one area of any size under this class was examined. It is located on the northern shore of the Island in an old burn over steep, rocky country. The stand, besides young growth, contains scattered all aged timber, more or less suppressed by poor environment in many places.

(4) Forest Land Unsatisfactorily Stocked - 2014 acres.

Practically all areas classed under this heading on this island should, in time fully restock by natural means. At the time of examination several areas were found badly burned and showing very little in the way of reproduction but in all cases they are fairly adjacent to areas offering seed trees and should in time fully restock--although they may take somewhat longer than average. Such areas may be found on the following lots: L.96, L. 725, L. 1764, L. 1763, L. 1762, L. 1761, L. 1759, S.T.L. 45117, X. 3062, X.3114 Blk. A, Area S. of L's. 724 & 725, and Area S. of L. 726. Areas under the above heading but on lots other than mentioned above, represent freshly logged or freshly burned blocks, which, up to the present, have had insufficient time to reproduce.

FACTORS AFFECTING REPRODUCTION.

(a) Fire and Erosion.

There have been several fires on the Island which have been destructive from a reproduction standpoint, causing

loss of mineral soil, seed bed and considerable erosion in different areas. One such area is located on Lot 56, where in many places the seed bed has been completely destroyed, leaving bare rock exposed. Some similar scattered areas are to be found in the south-west portion of the Island and likewise in the north-eastern extremity.

(b) Wind.

The whole of this Island, barring the south-eastern portion, is open to the full sweep of westerly winds. Some timber directly along the Sunderland Channel and Johnstone Strait shore shows evidence of this fact, but on the whole very little extensive damage seems to have been done to the forest.

(c) Logging.

Same as for West Thurlow Island (See pages 51-52 of this report.)

(d) Disease.

Due to the young age of the majority of the young growth on this Island, very little disease was noticed. In the few older stands, however, mistletoe to an average extent was found on Hemlock in the poorer sites.

UTILIZATION.

Present Utilization and Markets.

At present no logging is being carried out on the Island. The last operation was just north of Earles Reef by Bendickson Company. In this show donkeys were used for yarding and horses for roading purposes.

In previous years considerable logging was done by Japanese operators for the most part on the smaller shows. In these operations a very heavy slash remains in most cases and there seems to have been a considerable waste, especially in Hemlock.

The market available to loggers on this Island is the open log market at Vancouver.

Difficulties in Way of Complete Utilization of the Forest.

As was the case with the other Islands treated in this report, the chief difficulty in the way of complete utilization of the forest is the topography in certain parts of the Island. The chief body of merchantable timber remaining on the Island for the greater part lies at an elevation of 800 feet or over, and consequently offers quite

a problem from a logging standpoint as far as the resources of the average company is concerned. Proper booming facilities will offer another problem for the logging of this timber, as the shoreline along this area is rugged and steep with few indentations, and open to strong westerly winds from Johnstone Strait. Water supply should offer little difficulty, as small streams are abundant throughout the area.

Development Possibilities for Next Few Years Under Present Conditions

Speaking generally, it may be said that the whole interior portion of the Island and north to Sunderland Channel, except Lot 96 and some adjacent small areas, represents timber. There are portions of the area that of course run to scrub, but over the majority of it a stand averaging from 20 to 40M. per acre is represented. Much of the area is high, rugged country of average elevation, 800 feet, but a fair number of draws throughout should aid as rights of way for roading purposes. The timber will divide itself between Sunderland, Wellboro and Chancellor Channels as means of outlet. Many of these road rights of way must necessarily come through areas under control of the Crown, some of which have already been logged. Consequently, the granting of these rights of way should be carefully considered and be so regulated as to provide maximum protection from fire or other damage to existing reproduction. Again, in some of the larger units, if logging is not correctly planned and regulated as to time allowed for removal of the timber, the concluding stages of the operation will be a hazard to areas of new growth which have started on portions of the unit logged in the initial periods of the operation.

MERCHANTABLE TIMBER ON HARDWICKE ISLAND.

Area	Fir	Cedar	Hemlock	Other Species	Total M.B.M.
Alienated Land					
STL. 34882p STL. 30566p	1500	4000	4000	1145	10645
1652 STL. 1562p (Approx)	720	1320	600	360	3000
1654 STL. 1564p (Approx)	960	1760	800	480	4000
STL. 13082p	500	500	1000	1000	3000
STL. 3635p	171	6714	3084	1822	11791
STL. 9754p	685	3135	1234	717	5771
STL. 3939p	635	8246	4069	1778	14728
STL. 1646p	7675	2129	1595	887	12286
STL. 3634p	1085	6522	2886	638	11131
STL. 1648p	5223	6675	2699	1695	16292
STL. 1647p	4281	7263	2109	2130	15783
Total	23435	48264	24076	12652	108427
V.C. Land					
V.C.L. Nor. of L. 41	472	252	360		1084
E. Centre	5864	10670	8472	2320	27326
X. 5201	1371	37865	15893	8582	63711
X. 4669 (Approx)	200	500	500	150	1350
Total	7907	49287	25225	11052	93471
GRAND TOTAL	31342	97551	49301	23704	201898

Note:-

Above estimates taken from previous report submitted by Vancouver District Office.

MANAGEMENT AND SILVICULTURAL TREATMENT.

(1 & 2) The objects of management and the silvicultural treatment of this Island may be considered the same as those enumerated for Sonora Island (See pages 20 - 21 of this report).

(3) Determination of Sustained Yield.

This Island, similar to those previously treated in this report, likewise shows a deficit of actual growing stock. The total forest land amounts to 16,438 acres, which should produce about 524,500,000 bd. ft. at 120 years. The area of land open to young growth is 5,260 acres, capable of giving an annual increment of 1,399,160 bd. ft. The present stand totals 201,898,000 bd. ft.

The sustained annual yields for this Island as determined by the three methods are approximately as follows:

(a) Hanzlik's Method.

Sustained annual yield = 3,100,000

(b) Von Mantel's Method.

Sustained annual yield = 3,400,000

(c) Heyer's Method.

Sustained annual yield = 2,900,000

PROTECTION.

Fire Damage in Recent Years.

Over a period of the last seven years there has been two notable fires on the Island. The first of these occurred in 1919 and covered a narrow strip beginning in Lot 1764 and running north-westerly to the north-east corner of S.T.L. 34882. The total acreage burned was approximately 225 acres and at several times since fires have repeated on this area.

The other fire was one of much larger extent covering roughly 5950 acres and swept over practically the whole north-eastern end of the Island. It occurred in 1922 and portions of the area have since been subjected to repeated burns. Greatest damage was done by this fire, destroying soil and seed bed and causing severe erosion over many large areas. Considerable timber was also destroyed, particularly Cedar on T.L's. 1647, 1648 and Vacant Crown Land to the north of these areas.

Hazards and Recommendations for Improved Protections.

(a,b,c,d and e) Same as for Sonora Island (See pages 22-23 of this report.)

(f) That the following old trails and roads be kept open for the purpose of easy access to the interior of the Island.

(1) An old cross-skid and fore and aft road beginning at the south-west corner of Lot 1763 and running north into Lot 182 and an abandoned fore and aft road beginning the north-west portion of Lot 181 and running in a southerly direction to the north-east of Lot 182. Only some 20 chains separates the ends of these roads and if kept open they offer an easy road across the western portion of the Island.

(2) An old fore and aft road running from the north-east of Lot 96 to the south-west of that lot. This road traverses centrally a large logged and burned area which should eventually represent a stand of reproduction. Easy access to this stand will in time be of value in case of fire danger.

A P P E N D I X

DATE OF SURVEY, ETC.

This survey was carried out between May 17th and October 2nd 1926. The party consisted of one estimator, a compassman and an engineer cook for the launch used throughout the season. During the last three weeks of the work the party was supplemented by Mr. McCannel and a compassman. The Forest Station at Thurston Bay was used as headquarters throughout.

In 1924 a reconnaissance of these Forests was carried out by members of the Vancouver District staff. Commercial cruise maps covering some of the alienated timber were also obtained. These sources provided estimates of all merchantable timber on the islands, approximate type boundaries, and the topography. The 1926 party checked this information and measured sample plots in all immature stands. No estimating of merchantable timber was done on any of the islands.

METHODS ADOPTED.

Strips, Lines and Traverses.

The method employed for checking type boundaries was though of rough box compass traverses of old logging roads, railway grades, trails, etc., supplemented by careful observation from known points of eminence. These traverses were located, where possible, from established survey posts, but otherwise from some definite shore indentation creek mouth or other feature of the area established by survey. Where the above mentioned traverses did not sufficiently cover the country for the purposes required, additional strips were run. Strips as closely as topography allowed were run in cardinal directions. All distance was measured by 200 link steel tape with Abney clinometer being used as a correction for slope.

Stocktaking Methods.

Sample plots were located in each type encountered, offsetting from the above mentioned traverses or strips. No regular interval could be

laid down for these plots as they were chosen in order to fairly represent each "type" of young growth (in this connection "type" includes variation in age-class). Plots were not blazed nor posted, but their location merely shown on the compass map and later plotted upon the field map. The size of the plot taken likewise was variable with the density of the stand, the estimator endeavoring where possible to include roughly a minimum of 200 trees to the plot.

All trees forming the main body of the stand were tallied individually in inch classes, using a diameter tape occasionally to check the eye, i.e. up to ½" D.B.H. tallied as 0" class, ½" to 1½" as 1" class, etc. Then, knowing the area of the plot, by totalling the complete tally, an estimate of the number of trees per acre was easily found.

Several representative trees of each species on each plot were felled and measured for age, total height and D.B.H. - this data being recorded in the space provided on the back of the tally sheet. In every case, as closely as was pos-

sible, these "representative" trees chosen were average dominant trees. Occasional sample trees of mature timber left standing among the young growth were likewise measured as a rough indication of the site quality.

No plot studies were made in reproduction under virgin timber, all plots being taken in young growth in logged or logged and burned areas.

COAST HEMLOCK

(Based on 250 trees)

Age.	Site 1.		Site 2.		Site 3.	
	Av. Ht.	Av.DBH	Av.Ht.	Av.DBH	Av. Ht.	Av.DBH.
5	-	1.82	-	.84	-	.65
10	23.25	2.95	16.70	1.67	10.40	1.21
15	33.00	3.73	23.75	2.45	14.70	1.65
20	41.70	4.38	30.00	3.18	18.30	1.97
25	49.60	4.92	35.40	3.88	21.40	2.21
30	56.25	5.38	39.90	4.51	24.00	2.39
35	-	5.80	-	5.10	-	2.50

Note:-
In the above table Sites 1, 2 and 3 correspond to Site Index 140, 110 and 80, respectively.

COAST DOUGLAS FIR

(Based on 125 trees)

Age.	Site 1.		Site 2.		Site 3.	
	Av. Ht.	Av.DBH.	Av. Ht.	Av.DBH	Av. Ht.	Av. DBH.
5	-	1.58	-	1.35	-	-
10	25.7	3.05	19.0	2.55	12.3	-
15	36.2	4.35	27.0	3.60	17.6	-
20	45.2	5.43	33.7	4.53	22.3	-
25	53.2	6.31	39.9	5.35	26.6	-
30	60.3	-	45.5	-	30.4	-
35	66.7	-	50.5	-	33.7	-

Note:-
In this table Sites 1, 2, and 3 correspond to Sites 1, 1.5 and 2 (See Research Department report 1924) or approximately Site Index 150, 135 and 120.

(over)

Explanatory Note:-

In each plot taken throughout the season's work several average dominant trees of each species were measured for D.B.H. and total height. Using these measurements and applying Baur's System of Bands three site classes were determined. Plots were then segregated into their respective site classes and curves of average D.B.H. and total height drawn and balanced.

The preceding tabulated figures show results of this work.

COST OF SURVEY.

Wages.	$ 1843.10
Travelling Expenses.....	250 .12
Launch and General Expenses.....	443.65
Food (Meals on 35¢ basis).....	410.70
Freight and Haul.....	9.00
Total Charge to Vote	$ 2946.57

Forest Area - 98 554 Ac
Cost per Acre - 3.0d

SONORA ISLAND PROVINCIAL FOREST.

AREA Vacant Crown Land			PRODUCTIVE LAND Merchantable Timber Over 40M	20-40M	10-20M	Under 10	Young Growth 0-10yrs	11-20yrs	21-30.	L. or B. not satis. restocking	Non-Productive Land Bar.& Scrub	Water	TOTAL Acreage
T.L.	5160p		-	325.6	-	-	17.2	-	-	104.2	96.4	62.8	607.2
S.T.L.	38432	- 13000p	-	42.0	-	-	-	-	-	76.8	494.8	8.4	622
L.	104		-	-	-	-	345.2	-	-	116.4	6.4	-	468
L.	105		-	-	-	-	-	61.2	-	92.8	-	-	154
L.	107		-	-	-	13.2	96.8	-	10	-	-	-	120
L.	171		-	70.8	-	-	1159.2	-	-	9.2	80.8	-	1320
L.	968		-	-	-	-	40.0	-	-	-	-	-	40
L.	969		-	-	-	-	40.0	-	-	-	-	-	40
L.	970		-	-	-	-	40.0	-	-	-	-	-	40
L.	971		-	-	-	-	40.0	-	-	-	-	-	40
L.	972		-	-	-	-	55.6	-	-	-	6.4	-	62
L.	976		-	-	-	-	160.0	-	-	-	-	-	160
L.	1096		-	-	-	-	25.2	18.8	-	24.8	37.2	-	106
L.	1128		-	-	-	-	79.8	-	-	-	-	-	79.8
L.	1129		-	-	-	7.2	89.5	-	-	-	-	-	96.7
L.	1130	Ex.	-	-	-	14.2	64.2	-	-	-	-	-	78.4
T.L.	9492p		-	-	98.0	426.0	-	-	-	-	-	-	524.0
T.L.	12643p		-	-	-	421.8	336.4	150	-	-	-	16.8	925.0
T.L.	31742p		-	-	494.8	78.4	-	-	66.8	-	-	-	640
T.L.	34827		-	61.6	-	-	374.8	-	-	52.8	148.8	-	638
L.	1131	Ex.	-	-	-	2.8	77.2	-	-	-	-	-	80
L.	1132		-	-	-	-	147.2	-	-	-	-	12.8	160
L.	1133		-	-	-	-	38.8	-	-	-	138.2	63.8	240
L.	1136	Ex.	-	-	-	23,2	47.6	-	-	-	-	-	70.8
L.	1139	Ex.	-	-	-	-	75.2	-	-	-	-	-	75.2
L.	1141	Ex.	-	-	-	50.2	-	-	-	-	47.3	-	97.5
L.	1142	Ex.	-	-	-	43.3	-	10.8	-	-	20.0	-	74.1
L.	1143	Ex.	-	5.6	-	-	54.4	-	-	-	-	-	60.0
L.	1144	Ex.	-	-	-	-	66.0	-	-	14.0	-	-	80.0
L.	1145	Ex.	-	-	-	-	14.8	-	-	58.0	7.2	-	80.0
L.	1146	Ex.	-	-	-	-	28.	-	-	52.0	--	-	80.0
L.	1147	Ex.	-	-	-	-	50	-	--	-	-	-	50.0
L.	1148	Ex.	-	-	-	-	40	-	-	-	-	-	40.0
L.	1149	Ex.	-	16.8	-	-	23.2	-	-	-	-	-	40.0
L.	1173	Ex.	-	-	-	-	59.0	-	-	-	41.0	-	100
L.	1176	Ex.	-	-	-	-	-	-	-	13.4	37.0	-	50.4
L.	1177	Ex.	-	-	-	-	-	-	-	29.9	9.2	-	39.1
L.	1183	Ex.	-	-	-	-	69.4	-	-	-	43.6	-	113.0
L.	1184	Ex.	-	-	-	-	27.4	-	-	24.6	-	-	52.0
L.	1189		-	24.4	112.2	27.6	-	96.8	80	-	-	-	341.0
T.L.	36090p		-	66.0	-	89.2	371.2	-	-	-	-	13.6	540.0
X	20		-	-	69.2	-	28.5	3.5	-	48.4	10.4	-	160.0

SONORA ISLAND PROVINCIAL FOREST

AREA	PRODUCTIVE LAND								NON-PRODUCTIVE LAND		TOTAL ACREAGE.
	Merchantable Timber.				Young Growth.			L. or B. not satis. Restocking			
Vacant Crown Land	Over 40M	20-40M	10-20M	Under 10	0-10 yr	11-20 yr	21-30		Bar. & Scrub	Water	
Area adj. to X20 & S. of X363	-	42.0	123.2	408	307.6	-	-	-	-	-	880.8
T.S. X3902 & Area N. of X3902	-	-	-	-	-	-	-	-	770	-	770.0
T.L. 36456p and Land adjac. N. & S.	-	389.6	-	3686	-	315.6	-	276.8	585.6	16.4	5270.0
Area N. of L. 139	-	4	656.8	383.2	-	-	-	-	-	-	1040.0
Area N. & E. of T.L.37003	-	124	931	132.8	-	129.2	28.0	25.0	-	-	1370.0
Area W. of T.L. 31742	-	--	2.4	-	5.6	-	51.0	-	34.0	-	93.0
Area E. of T.L. 45113	-	54	-	186.0	-	-	16.0	-	-	-	256.0
Area E. of L. 516	-	170.8	-	-	112.0	-	-	107.2	-	-	390.0
T.L. 44320	-	-	-	-	210.2	-	-	-	50.8	-	261.0
OUTSIDE THE FOREST	22.4		-	133.7	676.4	10.8	-	191.9	205.5	-	1260.5
TOTAL V.C. LANDS ON THE ISLAND	1394.2		2487.6	5993.1	4817.2	785.9	251.8	1126.3	2665.1	193.8	19715.0
WITHIN THE FOREST (as at July 1953)	1371.8		2487.6	5859.4	4120.8	775.1	251.8	934.4	2459.8	193.8	18454.5
T. L'S.											
T.L. 420p	-	620	20	-	-	-	-	-	-	-	640.0
T.L. 421p	-	459	-	42.4	109.4	-	-	29.2	-	-	640.0
T.L. 1499p	-	293.2	128.8	206	-	-	-	-	-	-	628.0
T.L. 1500p	-	474	-	-	-	-	-	-	-	-	474.0
T.L. 1653p - L. 386	-	37	-	81.2	175.2	-	-	67.4	90.2	-	451.0
T.L. 3937p - L. 429	-	8.8	-	4.4	-	120.8	-	-	-	-	134.0
T.L. 3938p - L. 430	-	-	-	432.2	-	178.8	-	-	-	-	611.0
T.L. 4320p - L. 515	-	508.8	-	131.2	-	-	-	-	-	-	640.0
T.L. 4321p - L. 514	-	248.3	-	239.6	7.6	67.8	-	-	-	-	562.7
T.L. 4324p - L. 516	-	604.0	-	-	6.0	-	-	30.0	-	-	640.0
T.L. 5163p	-	510.6	-	54.4	-	-	-	-	-	-	565.0
T.L. 9493p	-	640.0	-	-	-	-	-	-	-	-	640.0
T.L. 9494p	-	536	-	80.0	-	-	-	-	-	12	628.0
T.L. 9495p	-	260.4	41.8	223.2	14.6	-	-	-	-	4.8	544.8
T.L. 9496p	-	511.6	-	116.4	-	-	-	-	-	52.0	680.0
T.L. 9497p	-	374.4	-	265.6	-	-	-	-	-	-	640.0
T.L. 9498p	-	582.2	-	17.2	6.0	-	-	5.0	19.6	-	630.0
T.L. 9499p	-	582.0	-	18.0	-	-	-	-	-	-	600.0
T.L. 9500p	-	561.8	-	29.2	-	-	-	4.0	-	-	595.0
T.L. 11588p	-	311.2	-	-	-	-	-	213.6	38.0	-	563.0
T.L. 11589p	-	592.4	-	20.6	-	-	-	-	-	30.0	643.0
T.L. 45113 - 12738p	-	251.6	-	171.2	32.6	-	142.6	-	42.0	-	640.0
T.L. 35153 - 12835p.L674	-	225.2	110	12.4	1.6	125.6	-	-	-	-	474.8
T.L. 37003 - 13251p	-	-	499.2	140.8	-	-	-	-	-	-	640.0
T.L. 33713	--	34.0	207.4	-	51.4	-	171.4	85.8	-	-	550.0
139	-	185.4	156.2	-	-	214.4	-	-	-	-	556.0

SONORA ISLAND PROVINCIAL FOREST

AREA	Merchantable Merchantable Timber				PRODUCTIVE LAND Young Growth.			L. of B. not	NON-PRODUCTIVE LAND		TOTAL ACREAGE.
T.L.'s (Con'd)	Over 40M	20-40M	10-20M	Under 10M	0-10yrs	11-20yrs	21-30yrs	Satis Restocking	Bar.& Scrub	Water	
L. 143	-	-	-	-	-	43.2	-	-	141.8	-	185.0
L. 150	-	40.0	110.8	12.6	7	119.6	-	-	-	-	290.0
L. 40	-	-	-	6.4	111.6	-	-	-	-	-	118.0
L. 41	-	-	-	15.6	302.8	-	-	-	11.6	-	330.0
L. 55	-	143.6	-	78.6	695.2	41.8	-	-	-	12.8	972.0
S.T.L. 41841	-	4.4	-	-	364.0	-	-	102.4	137.8	12.4	621.0
TOTAL T.L.'S.	-	9599.9	1274.2	2399.2	1885	911.4	314.0	537.6	481.0	124.0	17526.3
C. G's. & P.R's	-										
	-										
L. 778	-	-	-	-	-	-	-	160.0	-	8.0	168.0
L. 779	-	-	-	-	-	-	-	148.0	-	-	148.0
L. 1134	-	-	-	-	-	-	-	-	-	5.0	5.0
L. 1175 Ex.	-	-	-	-	-	-	-	47.9	-	-	47.9
L. 1140 Ex.	-	-	34.8	-	-	18.2	-	4.0	-	-	57.0
L. 1137 Ex.	-	-	-	14.0	58.3	-	-	-	-	-	72.3
L. 1135 Ex.	-	-	-	11.6	71.7	-	-	-	-	-	83.3
L. 1095	-	-	-	-	94.4	28.0	-	37.6	-	-	160.0
L. 1094	-	-	-	-	53.6	-	-	143.4	-	-	197.0
L. 1138 Ex.	-	-	-	-	83.5	-	-	-	-	-	83.5
L. 1174 Ex.	-	-	-	-	50.7	-	-	-	-	-	50.7
OUTSIDE THE FOREST			34.8	25.6	264.2	18.2		51.9		-	394.7
TOTAL C.G's & P.R's	-	-	34.8	25.6	412.2	46.2	-	540.9	-	13.0	1072.7
WITHIN THE FOREST			-	-	148.0	28.0		489.0		13.0	678.0
Florence, St. Aubyn & Hyacinth Lakes.	-	-	-	-	-	-	-	-	-	1343.0	1343.0
OUTSIDE THE FOREST	-	22.4	34.8	159.3	960.6	29.0	-	243.8	265.3	-	1655.2
GRAND TOTALS	-	10994.1	3796.6	8417.9	7114.4	1743.5	565.8	2204.8	3146.1	1673.8	39657.0
WITHIN THE FOREST	-	10971.7	3761.8	8258.6	6153.8	1714.5	565.8	1961.0	2940.8	1673.8	38001.8

(as at July 1933)

Note:
"Ex." - Lot excluded from Provincial Forest.

EAST THURLOW ISLAND PROVINCIAL FOREST.

AREA		PRODUCTIVE LAND								NON-PRODUCTIVE LAND		TOTAL
		Merchantable Timber per Acre				Young Growth			L. or B. not			
Vacant Crown Land		Over 40M	20-40M	10-20M	Under 10M	0-10yrs	11-20yr	21-30Y	Satis. Restocking	Bar.& Scrub	Water.	ACREAGE
T.L. 36321		-	-	182.8	244.0	-	-	-	213.2	-	-	640
X 94		393.4	-	-	357.4	-	-	-	-	109.2	-	860
X 5166		-	-	-	53.6	-	-	6.2	173.8	191.4	-	425
L. 1676	Ex.	-	-	-	-	-	-	40.4	-	2.0	-	42.4
L. 1677	Ex.	-	-	-	-	-	-	30.8	21.6	12.6	-	65
L. 1678	Ex.	-	-	-	2.0	-	-	50.4	22.4	5.6	-	80.4
L. 1679	Ex.	-	-	-	5.6	-	-	44.2	7.2	3.0	-	60
L. 1680	Ex.	-	14.0	-	15.2	4.8	-	6.0	-	-	-	40
L. 1681	Ex.	-	37.6	-	2.4	-	-	-	-	-	-	40
L. 1682	Ex.	-	40	-	-	-	-	-	-	-	-	40
L. 1683	Ex.	-	-	-	-	-	-	43.6	-	16.4	-	60
L. 1685	Ex.	-	-	-	-	-	-	12.8	2.4	24.8	-	40
L. 1686	Ex.	-	-	-	-	-	-	19.6	-	20.4	-	40
L. 1687	Ex.	-	-	-	-	-	-	21.6	18.4	-	-	40
L. 1689	Ex.	-	-	-	-	-	-	42.0	10.0	8.0	-	60
L. 1691	Ex.	-	-	-	-	-	-	40.0	-	-	-	40
L. 1692	Ex.	-	-	-	-	-	-	23.0	2.2	14.8	-	40
L. 1693	Ex.	-	-	-	-	-	-	10.0	-	29.8	-	39.8
L. 1694	Ex.	-	-	-	-	-	4.0	33.2	-	22.8	-	60
L. 1695	Ex.	-	-	-	-	-	16.7	10.2	-	9.0	-	35.9
L. 1696	Ex.	-	-	-	-	-	35.6	-	-	-	-	35.6
L. 1697	Ex.	-	-	-	13.7	-	6.5	-	-	15.3	-	35.5
L. 1503		-	-	-	-	-	-	40.0	-	-	-	40
L. 1502	Part Ex.	-	1.2	-	-	-	116.0	288.8	-	-	-	406
Area W. of L. 156		-	-	-	-	-	-	122.8	-	291.2	-	414
L. 1606	Ex.	-	-	-	-	-	-	25.4	-	9.4	-	34.8
L. 187		-	-	-	-	236.2	-	-	15.5	343.2	10	605
X.5708 & Area W. of L.187		-	-	-	-	66.0	-	87.6	-	646.4	-	800
L. 1902		-	-	-	-	38.0	-	65.0	-	4.0	-	107
L. 186		-	8.4	-	244.2	31.6	-	-	13.5	135.2	6.0	439
X. 697		-	-	-	230.4	-	146.4	53.6	21.2	32.4	-	484
T.L. 44318		-	-	-	---	-	-	2.8	13.2	144.0	-	160
L. 1872		-	-	-	114.2	-	-	-	54.8	-	-	169
L. 1671		-	-	-	7.5	-	110.5	-	-	-	-	118
T.L. 6614 & Area East		-	146.4	170.8	200.0	312.4	-	-	35.4	295.8	19.2	1180
L. 1672		-	-	-	24.4	-	70.6	-	-	-	-	95
L. 1673		-	-	-	61.6	-	37.4	-	1.0	-	-	100
L. 1674		-	-	15.4	4.8	-	20.0	-	44.3	-	-	84.5
L. 1675		-	-	9.6	-	-	14.0	-	41.7	-	-	65.3
Area E. of X. 169		-	-	2.0	69.6	-	45.8	-	10.6	-	-	128
X. 169		-	-	-	89.0	-	3.0	-	-	-	-	92
L. 1900		-	-	20.8	-	-	-	-	73.5	-	-	94.3
Area N. of L. 1900		-	-	134.0	11.6	-	-	-	101.2	3.2	-	250
Area S. of L. 16		-	-	-	-	40.0	-	-	-	120	-	160.0
Area W. of L. 95		-	-	-	109.4	63.6	-	-	-	-	-	173.0
Area S. of L. 186	OUTSIDE THE FOREST	-	-	-	145.6	-	-	- 25.4	26.0	93.4	-	265.0
TOTAL V.C. LAND ON THE ISLAND		393.4	247.6	535.4	2006.2	792.6	626.5	1120	923.3	2603.3	35.2	9283.5
	WITHIN THE FOREST (AS AT JULY 1937)	393.4	247.6	535.4	2006.2	792.6	626.5	1094.6	923.3	2593.9	35.2	9248.7

EAST THURLOW ISLAND PROVINCIAL FOREST.

AREA		PRODUCTIVE LAND								NONPRODUCTIVE LAND		TOTAL
		Merchantable Timber Per Acre				Young Growth			L. or B. not			
Timber Licenses		Over 40M	20-40M	10-20M	Under 10M	0-10yrs	11-20yr	21-30yr	Satis. Restocking	Bar.& Scrub	Water	ACREAGE
L. 95		-	34.0	-	424.2	1012.8	-	-	59.6	114.6	68.8	1714
T.L. 2837p		-	-	-	181.0	241.2	-	-	67.0	129.8	21.0	640
T.L. 44643		-	-	-	316.6	10.2	-	-	27.2	-	-	354
T.L. 27		-	1478(S.L)	482.2	303.0	3.6	-	42.0	238.0	156.8	64.4	2768
T.L. 40773		-	-	311.4	313.6	-	-	-	-	-	-	625
T.L. 40772		-	134.6	105.6	172.0	78.8	-	-	-	-	144.0	655
T.L. 36322		-	44.8	146.0	198.0	-	71.0	-	161.2	11.0	-	632
T.L. 34796		-	-	450.0	145.0	-	-	-	43.0	3.0	-	640
L. 23		23.0	192.0	4.6	26.4	177.6	-	-	703.5	145.9	65.0	1338
T.L. 10603p		454.2	-	-	157.6	-	-	-	21.2	7.0	-	640
L. 112		-	-	-	460.2	-	-	6.4	8.2	37.2	-	512
L. 22		-	53.2	-	24.8	389.4	-	90.0	-	206.6	-	764
L. 24		-	-	11.6	159.2	656.2	-	-	-	12.0	-	839
TOTAL T.L's.		477.2	1956.6	1511.4	2881.6	2569.8	71.0	138.4	1328.9	822.9	363.2	12121.0
C.G's & P.R's.												
L. 16	Ex.	-	-	9.5	23.2	342.1	-	-	-	17.2	-	392
L. 1669		-	76.0	-	-	-	28.0	-	-	-	-	104
L. 21		-	127.2	-	-	92.8	-	-	38.0	12.0	-	270
L. 1684	Ex.	-	-	-	-	-	-	40.0	-	-	-	40
L. 1690	Ex.	-	-	-	-	-	-	16.4	23.6	-	-	40
L. 1698	Ex.	-	-	-	26.3	-	12.8	-	-	-	-	39.1
L. 1433	Ex.	44.0	-	-	-	-	-	55.8	5.2	-	-	105.0
L. 1434	Ex.	144.2	-	-	-	-	14.8	1.0	-	-	-	160.0
L. 6	Ex.	1.5	-	-	-	-	108.4	50.1	-	-	-	160.0
L. 113		-	-	-	122.4	-	-	9.0	-	11.6	-	143.0
L. 255	Ex.	-	-	-	3.6	-	-	34.4	-	-	-	38.0
L. 1432	Ex.	-	-	-	18.4	-	-	25.1	-	-	-	43.5
L. 156	Ex.	-	-	-	24.0	-	-	136.0	-	-	-	160.0
L. 1901		-	-	-	-	-	-	37.2	30.0	80.8	-	148.0
L. 1688	Ex.	-	-	-	-	-	-	26.8	5.2	8.0	-	40.0
L. 234A		-	-	-	17.2	-	-	29.72	-	-	-	46.93
L. 1435		-	-	-	-	-	-	67.2	12.8	112.0	-	192.0
L. 316		-	-	-	-	-	-	50.34	-	-	-	50.34
L. 317		-	-	-	16.0	-	-	34.23	-	-	-	50.23
L. 7		-	-	-	139.2	42.0	-	8.4	280.0	100.4	-	570.0
L. 1670		-	-	-	-	-	92.0	-	-	-	-	92.0
L. 440	Ex.	-	129.2	-	39.4	-	44.2	-	-	19.2	-	232.0
Area W. of T.L. 40773		-	-	180.4	128.0	41.6	-	-	-	-	-	350.0
TOTAL C.G's & P.R's on Island Outside Forest		189.7	125.2	9.5	108.6	342.1	167.4	327.8	5.2	38.8	-	1325.3
TOTAL C.G's & P.R's on Island Within the Forest		189.7	332.4	189.9	557.7	518.5	300.2	621.7	394.8	361.2	-	3466.1
		-	203.2	180.4	449.1	176.4	132.8	319.3	389.6	322.8		2178.6
AREA OF LAKES (not included above)		-	-	-	-	-	-	-	-	-	910.0	910.0
GRAND TOTAL Outside on the Forest		189.7	125.2	9.5	108.6	342.1	167.4	327.8	5.2	38.8	-	1325.3
GRAND TOTAL on the Island		1060.3	2536.6	2236.7	5445.5	3880.9	997.7	1880.1	2647.0	3787.4	1308.4	25780.6
GRAND TOTAL Within the Forest (as at July 1922)		870.6	2407.4	2227.2	5336.9	3538.8	830.3	1552.3	2641.8	3741.6	1308.4	24435.3

Note: "Ex" - Lot Excluded from Provincial Forest.

WEST TEURLOW ISLAND PROVINCIAL FOREST.

AREA	PRODUCTIVE LAND								NON-PRODUCTIVE LAND			TOTAL
	Merchantable Timber per Ac.				Young Growth			L. or R. not Satis. Restocking				ACREAGE
Vacant Crown Land	Over 40M	20-40M	10-20M	Under 10M	0-10yr.	11-20y.	21-30Y.		Bar.&	Scrub	Water	
L. 831 T.L. 1957p	-	-	-	-	-	-	-	500	-		-	500
L. 1303 T.L. 9959p	-	-	-	-	11.6	-	-	62		420.4	-	494
L. 79	-	-	-	-	-	-	-	109.4		115.6	-	225
S.T.L. 43634 - 1498p	-	166.8	-	-	-	-	-	54.2		64.0	-	285
Area S. of L. 448	-	6.0	-	105.6	94.2	-	-	-		4.2	-	210
L. 45	-	-	-	-	20.8	-	-	139.2	-		-	160
Area W.& S. of S.T.L.45111	-	4.8	176	130.8	-	17.2	-	13.2	-		-	342
L. 38	-	91.2	-	-	38.0	5.6	-	68.2	-		-	203
Area S. of L. 111	-	-	-	-	-	146.0	-	36.0		24.0	-	206
Area N.& E. of L. 45	-	-	-	-	28.8	11.4	-	131.8		198.0	-	370
Area S. of L. 353	-	-	-	-	9.4	14.4	-	-		1.2	-	25.0
Area E. of L.327 & L.349	-	5.6	6.8	-	80.4	23.2	-	294.0		855.0	-	1265
Area E. of L. 81	-	-	-	-	-	-	-	47.2		59.8	-	107
Area between L.286 &L.595	-	-	-	-	-	-	-	1.0		19.0	-	20
Area between L. 1871 and S.T.L. 38764	-	-	-	-	-	-	-	3.6		14.4	-	18
Area E. of S.T.L. 31746	-	28.6	-	-	176.6	-	-	55.2		20.6	-	281
L. 1064	-	-	41.0	-	135.6	-	-	25.4	-		-	202
Area bet. L.1061 & L.1857	-	-	121.4	-	-	17.6	-	-		58.0	-	197
Area bet. L.447 & L. 394	-	12.8	-	-	21.6	-	-	-	-		5.6	40
L. 394 Exp. T.L. 40881	-	10.6	9.8	77.6	413.4	-	-	30.8		6.0	8.8	557
TOTAL VACANT CR. LAND.	-	326.4	355.6	314.0	1030.4	235.4	-	1571.2		1850.2	14.4	5707
T. L's												
S.T.L. 45111 - 13105p	40.8	114.8	136.4	252.0	-	-	-	112.0		4.0	-	660.
L. 355 T.L. 11558p	-	26.8	-	215.6	-	80.0	-	303.2		14.4	-	640.
L. 354 T.L. 11560p	-	121.2	172.8	25.6	-	38.0	-	246.8		35.6	-	640.
L. 352 T.L. 11559p	-	149.6	157.2	-	-	7.6	-	178.8		41.7	-	534.
L. 351 T.L. 11557p	37.2	211.2	-	-	191.78	-	34.8	92.0		9.0	-	575.
L. 353 T.L. 11561p	-	-	-	-	129.0	51.0	-	74.0		39.2	8.8	302.
L. 350 T.L. 11556p	-	-	-	-	97.12	31.7	-	272.4		3.6	9.7	414.
L. 327 T.L. 11554p	160.0	170.0	71.6	-	83.5	-	84.5	45.2		25.2	-	640.
L. 349 T.L. 11552p	-	112.8	-	199.8	-	-	-	24.4		-	-	338.
L. 938 T.L. 12839p	-	-	-	255.2	-	-	-	357.2		27.6	-	640.
L. 286 T.L. 9458p	-	34.0	-	28.8	-	-	-	1600.0		157.2	-	1820.
L. 80	-	-	-	-	15.6	-	-	324.8		11.2	8.4	360.
L. 1302 T.L. 11945p	-	-	-	-	94.2	-	-	99.6		117.2	-	311.
L. 287 TL. 9458p	-	-	-	80.2	151.4	-	-	-		10.4	-	242.
S.T.L. 31746 - 12798p	-	-	-	70.0	181.6	-	-	291.2		44.4	12.8	600

WEST THURLOW ISLAND PROVINCIAL FOREST.

AREA	PRODUCTIVE LAND: Merchantable Timber per Acre: Over 40M	20-40M	10-20M	Under 10	Young Growth: 0-10Yr.	11-20Y	21-30Y	L. or Satis.	B. Not Restocking	NON-PRODUCTIVE LAND: Bar.& Scrub	Water.	TOTAL ACREAGE
T.L.'s (continued)												
L. 595 - T.L. 12840p	-	96.0	-	99.6	-	-	-		230.8	26.4	4.8	457.6
S.T.L. 38764 - 13001p	-	160.0	-	-	13.0	-	-		30.0	111.0	-	314.0
S.T.L. 30613 - 12954p	-	250.4	-	-	163.6	-	-		86.8	31.2	-	532.0
L. 447 - T.L. 698p	-	296.2	-	-	254.0	-	-		30.2	49.6	-	630.0
L. 448 - T.L. 1104p	-	562.0	-	-	26.4	-	-		48.0	3.6	-	640.0
L. 905 - T.L. 11780p	-	267.6	86.4	-	96.0	-	-		-	-	-	450.0
L. 111	21.8	2.0	-	161.8	97.0	185.4	-		20.8	145.2	-	634.0
L. 81	-	-	-	-	-	-	-		122.8	25.2	-	148.0
TOTAL T.L's.	259.8	2575.6	624.4	1388.6	1594.2	393.7	119.3		4591.0	932.9	44.5	12524.0
C.C's and P.R's.												
L. 1871	-	-	-	-	-	-	-		63.6	62.4	-	126.0
L. 1061	-	-	5.2	25.6	70.2	-	-		-	-	-	101.0
L. 1062	-	-	12.0	-	80.8	-	-		15.2	19.2	-	127.2
L. 1857	-	-	-	74.9	34.1	-	-		-	-	-	109.0
L. 455 †	-	-	-	16.8	19.8	-	-		-	-	-	36.6
L. 449	-	-	-	37.6	90.8	-	-		11.6	-	-	140.0
L. 14 †	-	-	45.2	-	-	-	-		456.0	14.8	-	516.0
L. 20	-	-	-	-	25.6	-	-		280.0	16.4	-	322.0
Outside the Forest			45.2	16.8	19.8				456.0	14.8		552.6
Island TOTAL C.C's & P.R's.	-	-	62.4	154.9	321.3	-	-		826.4	112.8	-	1477.8
Within the Forest			17.2	138.1	301.5				370.4	98.0		925.2
Outside the Forest	-		45.2	72.8	19.8	-	-		456.0	14.8	-	552.6
GRAND TOTAL on the Island	259.8	2962.0	1041.8	1857.5	2945.9	629.1	119.3		6988.6	2905.9	58.9	19708.8
Within the Forest	259.8	2962.0	996.6	1846.7	2926.1	629.1	119.3		6532.6	2891.1	58.9	19156.2

(as at July 1934)

† Excluded from Provincial Forest.

HARDWICKE ISLAND PROVINCIAL FOREST.

AREA	PRODUCTIVE LAND								NON-PRODUCTIVE LAND		TOTAL ACREAGE
	Merchantable Timber per Acre				Young Growth			L. or B. Not Satis. Restocking			
Vacant Crown Land	Over 40M	20-40M	10-20M	Under 10	0-10yr	11-20y	21-30Y		Bar.& Scrub	Water	
X. 4669	20.6	-	39.6	-	12.2	-	-	8.4	52.2	-	133
L. 1760 Ex.	-	-	-	2.8	-	17.0	-	82.0	18.2	-	120
X. 4639 Blks "A" & "B"	-	-	65.6	374.2	88.6	11.6	-	-	5.0	-	545
X. 5201	465.4	1098.0	93.0	234.0	2.0	-	4.8	4.0	-	78.8	1980
X. 4483	-	-	6.0	36.0	-	-	-	-	-	-	42.
L. 96	-	10.4	1.0	40.0	810.2	-	-	243.6	64.8	-	1170
X. 3062 Exp.	-	6.0	-	16.6	-	-	-	17.4	-	-	40
X. 3114 Blk "A"	-	-	-	-	-	-	-	40.0	-	-	40
X 3114 Blk "B"	-	-	-	12.4	-	-	-	22.6	-	-	35
L. 667	4.8	-	-	222.4	130.9	-	-	212.4	5.5	-	576
L. 722	17.2	-	4.0	364.8	135.6	-	-	25.6	48.8	-	596
Area N. of L. 96	-	-	-	-	65.0	-	-	-	-	-	65
Area N. of L's 724,725 & 726	198.8	25.2	133.2	971.4	12.4	-	-	4.0	-	-	1345
" S. " L.183 & X.5201	121.0	86.8	35.8	299.0	94.0	8.0	-	63.2	22.2	-	730
" NE. " L.181 & N.X5201	15.2	38.0	24.4	362.4	183.6	-	149.0	32.8	59.6	-	865
" W " X. 4669	-	-	-	-	74.6	-	-	-	45.4	-	120
" E&S. of L. 722	-	30.4	-	104.8	80.0	-	-	42.8	-	-	258
" S. of L's. 724 & 725	-	-	26.0	127.6	58.8	23.0	-	66.0	23.6	-	325
Outside Forest	-	-	-	2.8	-	17.0	-	82.0	18.2	-	120.0
TOTAL V.C. LANDS on Island	843.0	1294.8	428.6	3168.4	1747.9	59.6	153.8	864.8	345.3	78.8	8985.0
Within Forest	843.0	1294.8	428.6	3165.6	1747.9	42.6	153.8	782.8	327.1	78.8	8865.0
as of July 1933											
T.L's											
S.T.L. 34882 - T.L.13093p	67.4	52.2	-	-	228.2	26.8	-	-	59.4	-	434
STT.L. 30566 - T.L.13065p	1.4	9.2	4.8	-	110.8	2.0	-	52.0	44.8	-	225
L. 181 - T.L. 1652p	4.8	219.4	64.4	139.3	169.1	-	-	-	-	-	597
L. 182 - T.L. 13087p	25.8	17.8	-	121.2	265.2	2.4	-	60.4	147.2	-	640
L. 183 - T.L. 1654p	38.4	175.0	47.2	199.8	103.2	8.4	-	-	68.0	-	640
L. 723 - T.L. 9754p	-	125.6	125.6	405.8	-	-	-	22.0	26.0	-	705
L. 670 - T.L. 3635p	61.2	290.4	209.2	25.2	-	-	-	-	52.4	-	638.4
L. 727 - T.L. 3939p	148.1	100.5	256.4	111.2	-	-	-	-	-	-	616.2
L. 724 - T.L. 1646p	96.0	65.6	225.6	149.2	46.6	-	-	-	57.0	-	640
L. 671 - T.L. 3634p	88.8	224.6	27.8	75.4	-	-	-	71.6	151.8	-	640
L. 725 - T.L. 1647p	192.7	129.0	244.8	29.8	6.7	-	-	37.0	-	-	640
L. 726 - T.L. 1648p	83.8	198.2	148.8	101.8	-	-	-	107.4	-	-	640
S.T.L. 45117	20.0	-	-	196.0	-	46.0	-	303.0	75.0	-	640
Area S. of L. 726	-	-	-	39.0	-	-	-	165.8	15.2	-	220
TOTAL T.L's Within Forest	828.4	1807.5	1354.6	1593.7	929.8	85.6	-	819.2	696.8	-	7915.6

HARDWICKE ISLAND PROVINCIAL FOREST.

AREA			PRODUCTIVE LAND									NON-PRODUCTIVE LAND		TOTAL
			Merchantable Timber per Acre.				Young Growth.			L. or B.	Not			
Crown Grants & P.R's.			Over 40M	20-40M	10-20M	Under 10	0-10yr	11-20Y	21-30Y	Satis.	Restocking.	Bar.& Scrub	Water	ACREAGE
L.	1764	Ex.	-	-	-	-	-	6.4	-		100.0	7.6	-	114.0
L.	1765	Ex.	-	-	-	-	-	-	-		-	15.0	-	15.0
L.	1763	Ex.	-	-	-	-	8.0	14.8	-		38.0	10.0	-	70.8
L.	1762	Ex.	-	-	-	-	11.2	25.6	-		31.2	0.8	-	68.8
L.	1761	Ex.	-	-	-	-	-	76.2	-		104.8	-	-	181.0
L.	1759	Ex.	-	-	--	22.2	11.4	-	-		56.0	22.4	-	112.0
L.	19		-	-	29.6	7.6	115.6	-	-		-	7.2	-	160.0
OUTSIDE FOREST					-	22.2	30.6	123.0			330.0	55.8		561.6
TOTAL C.G's & P.R's			-	-	29.6	29.8	146.2	123.0	-		330.0	63.0	-	721.6
WITHIN FOREST					29.6	7.6	115.6	-			-	7.2		160.0
OUTSIDE FOREST			-	-	-	25.0	30.6	140.0	-		412.0	74.0	-	681.6
GRAND TOTAL			1671.4	2902.3	1812.8	4791.9	2823.9	268.2	153.8		2014.0	1105.1	78.8	17622.2
WITHIN FOREST			1671.4	2902.3	1812.8	4766.9	2793.3	128.2	153.8		1602.0	1031.1	78.8	16940.6
(as at July 1933)														

Note:-

"Ex" - Lot excluded from Provincial Forest.

SONORA ISLAND PROVINCIAL FOREST.

Summary of Young Growth by Lots.

Lot.	Repr. by Age Classes 0-10 Yr	11-20Yr	21-30Yr	Trees/Acre		Species by Percent. F	H	C	Dom. Trees Av.DBH	Av.THt.
T.L. 5160p.	17.2	-	-		1500		75		-	-
L. 104	345.2	-	-		25000		83	16	0 Cl.	-
L. 105	-	61.2	-		20000	30	65		0 Cl.	-
L. 107	96.8	-	10.0		15500	36	55		.75	7.0
L. 171	1159.2	-	-		1500		75		-	-
L. 968	40.0	-	-		15500	36	55		.75	7.0
L. 969	40.0	-	-		15500	36	55		.75	7.0
L. 970	40.0	-	-		15500	36	55		.75	7.0
L. 971	40.0	-	-		15500	36	55		.75	7.0
L. 972	55.6	-	-		15500	36	55		.75	7.0
L. 976	160.0	-	-		15500	36	55		.75	7.0
L.1096	25.2	18.8	-		1500		75		-	-
L.1128	79.8	-	-			40	60		0 Cl.	-
L.1129	89.5	-	-			40	60		0 Cl.	
T.L. 12643p.	336.4	150.0	-	15500&	10000	36430	55&65		.75	7.0
T.L. 34827	374.8	-	-		5000	65	30			
L.1132	147.2	-	-		25000		83	16	0 Cl.	-
L.1133	38.8	-	-		1700	28	60	12	.75	7.0
L.1189	-	96.8	80.0	6000&	5000		63&99		1.0&1.5	9.0&12.0
T.L. 36090p.	371.2	-	-		25000		83	16	0 Cl.	-
X 20	28.5	3.5	-		15500	36	55		.75	7.0
T.L. 31742p.	-	-	66.8		2200		99		2.0	17.0
Area Adj. to X 20.	307.6	-	-		15500	36	55		.75	7.0
T.L. 36456p. & Adj.	-	315.6	-	Handlogged - Varied.						
Ar. No. E.T.L. 37003.		129.2	28.0	H.L.	& 3900		100		2.0	17.0
" W. of T.L. 31742.	5.6	-	51.0		15500	36	55		.75	7.0
" E. of T.L. 45113.	-	-	16.0		2200		99		2.0	17.0
" E. of L. 516.	112.0	-	-		15000	60	30		1.0	9.0
L. 44320	210.2	-	-		15500	36	55		.75	7.0
T.L. 421p.	109.4	-	-		9000	7	81	8	0 Cl.	-
L. 386	175.2	-	-			28	60	12	.75	7.0
L. 429	-	120.8	-		1600		81		0 Cl.	-
L. 430	-	178.8	-	Varied						
L. 514	7.6	67.2	-	Selectively Logged.						
L. 516	6.0	-	-		15000	60	30		1.0	9.0
T.L. 9495p.	14.6	-	-			40	60		0 Cl.	-
T.L. 9498p.	6.0	-	-			40	60		0 Cl.	-
T.L. 45113	32.6	-	142.6	15500&	2200	36	55&99		.75& 2.0	7.0&17.0
T.L. 35153	1.6	125.6	-		6000		6.7	30	1.0	9.0

SONORA ISLAND PROVINCIAL FOREST.

Summary of Young Growth by Lots.

	Repr. by Age Classes			Trees/Acre	Species by percent.			Dom. Trees.	
	0-11	11-20	21-30		F	H	C	Av.DBH.	Av.THt.
T.L. 33713	51.4	-	171.4	3300		98		2.0	17.0
L. 139	-	214.4	-	6000		63		1.0	9.0
L. 143	-	43.2	-	Selectively Logged					
L. 150	7.0	119.6	-	7000		67	30	0 Cl.	-
L. 40	111.6	-	-		40	60		0 Cl.	-
L. 41	302.8	-	-		40	60		0 Cl.	-
L. 55	695.2	41.8	-	12000		63	31	0 Cl.	-
S.T.L. 41841	364.0	-	-		40	60		0 Cl.	-
L. 1095	94.4	28.0	-		28	60	12	.75	7.0
L. 1094	53.6		-	Varied					
TOTALS	6153.8	17145	565.8						

Sheet 1.

EAST THURLOW ISLAND FOREST

Summary of Young Growth by Lots.

Lot.	Repr. by Age Classes 0-10	11-20	21-30	Trees/Acre	Species by Percent. F	H	C	Dom. Trees Av.DBH	Av.T.H.
X 5166	-	-	6.2	5870	17	50	30	2.0	17.0
L.1503	-	-	40.0	5850	10	70	18	1.0	9.0
L.1502	-	116.0	288.8	4000 & 5850	7 &10	92& 70	1 & 18	1.5&1.0	12& 9.0
Ar. W. of L. 156	-	-	122.8	5850	10	70	18	1.0	9.0
L.1506	-	-	25.4	2000		32	64	2.5	20.0
L. 187	236.2	-	-	3700	11	49	40	0 Cl.	-
X 5708 & Ar.W. of L. 187	66.0	-	87.6	& 2000		& 32	& 64	0Cl.&2.5	- & 20
L.1902	38.0	-	65.0	3700 & 4350	11& 16	49&56	40&27	0Cl&1.0	- & 9.0
L. 186	31.6	-	-	3700	11	49	40	0 Cl.	-
X 697	-	146.4	53.6	8600 & 5200	30& 15	57&82		10& 2.0	12.0&17.0
T.L. 44318	-	-	2.8	5200	15	82		2.0	17.0
L. 1671	-	110.5	-	5690	9	58	32	1.0	9.0
T.L. 6614 & Ar. East	312.4	-	-	5800	6	52	35	0 Cl.	-
L. 1672	-	70.6	-	5690	9	58	32	1.0	9.0
L. 1673	-	37.4	-	5690	9	58	32	1.0	9.0
L. 1674	-	20.0	-	5690	9	58	32	1.0	9.0
L. 1675	-	14.0	-	5690	9	58	32	1.0	9.0
Ar. E. of X 169	-	45.8	-	5690	9	58	32	1.0	9.0
X 169	-	3.0	-	5690	9	58	32	1.0	9.0
Ar. S. of L. 16	40.0	-	-					0 Cl.	-
" W. of L. 95	63.6	-	-	4950	3	55	35	0 Cl.	-
L. 95	1012.8	-	-	5060	3	50	39	0 Cl.	-
T.L. 2837p.	241.2	-	-	17000	20	75	5	0 Cl.	-
T.L. 44643	10.2	-	-	2660	4	86	7	0 Cl.	-
L. 27	3.6	-	42.0	& 5870	& 17	& 50	& 30	0Cl&2.0	-& 17.0
T.L. 40772	78.8	-	-	4950	3	55	35	0 Cl.	-
T.L. 36322	-	71.0	-	5690	9	58	32	1.0	9.0
L. 23	177.6	-	-	2660	4	86	7	0 Cl.	-
L. 112			6.4	5200	15	82		2.0	17.0
L. 22	389.4	-	90.0	& 5850	& 10	& 70	& 18	& 1.0	& 9.0
L. 24	656.2	-	-	4950	3	55	35	0 Cl.	-
L. 16	342.1	-	-	17000	20	74	5	0 Cl.	-
L. 1669	-	28.0	-	5690	9	58	32	1.0	9.0
L. 21	92.8	-	-	2660	4	86	7	0 Cl.	-
L. 1433	-	-	55.8	2660		89	11	1.0	9.0
L. 1434	-	14.8	1.0	4000	7	92	1	1.5	12.0
L. 113	-	-	9.0	2000		32	64	2.5	20.0
L. 255	-	-	34.4	3860	22	64	14	1.0	9.0
L. 1432	-	-	25.1	3860	22	64	14	1.0	9.0
L. 156	-	-	136.0	2000		32	64	2.5	20.0
L. 1901	-	-	37.2	4350	16	56	27	1.0	9.0
L. 1688	-	-	26.8	5870	17	50	30	2.0	17.0
L. 234 A	-	-	29.73	5850	10	70	18	1.0	9.0
L. 1435	-	-	67.2	5850	10	70	18	1.0	9.0

Sheet 2.

EAST THURLOW ISLAND FOREST.

Summary of Young Growth by Lots.

Lot.	Repr. by Age Classes 0-10	11-20	21-30	Trees/Acre	Species by Percent. F	H	C	Dom. Trees Av.DBH	Av.THt
L. 316	-	-	50.34	5850	10	70	18	1.0	9.0
L. 317	-	-	34.23	5850	10	70	18	1.0	9.0
L. 7	42.0	-	8.4	3700& 4350	11& 16	49&56	40&27	0Cl.&1.0	- &9.0
L. 1670	-	92.0	-	5690	9	58	32	1.0	9.0
L. 440	-	44.2	-	5690	9	58	32	1.0	9.0
Ar. W. of T.L. 40773	41.6	-	--	4950	3	55	35	0 Cl.	-
TOTALS	3876.1	813.7	1345.8						

WEST THURLOW ISLAND FOREST

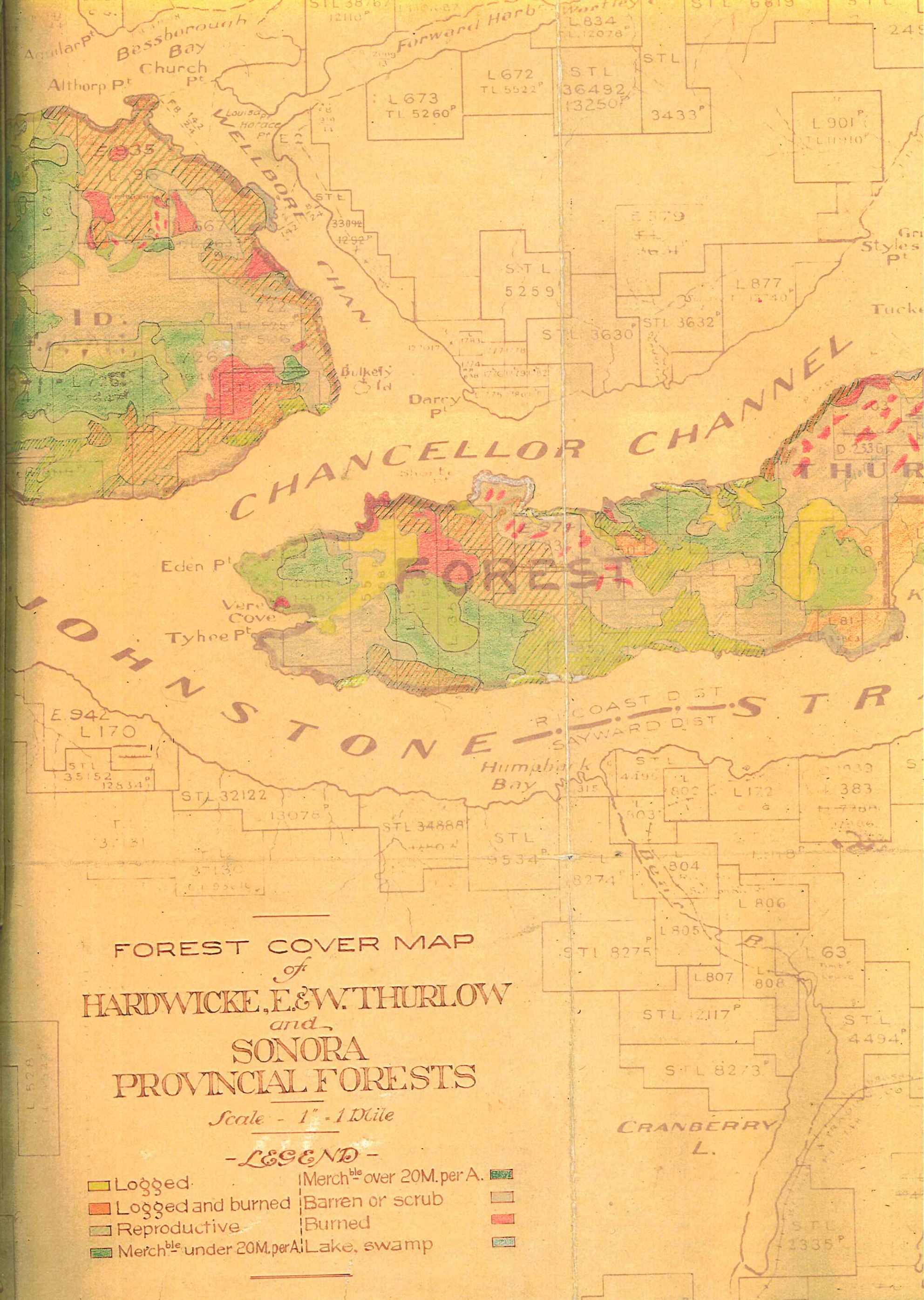
Summary of Young Growth by Lots.

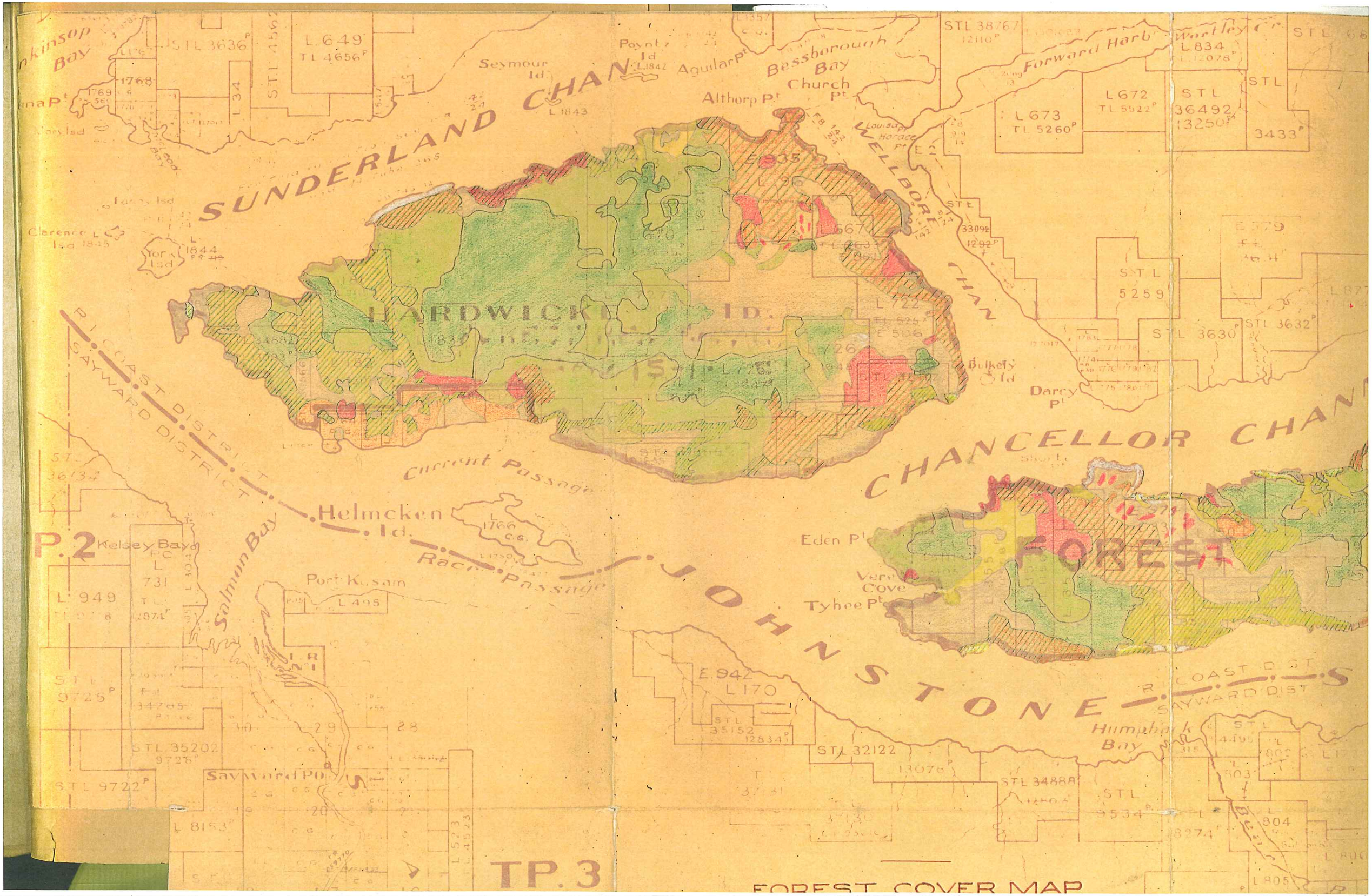
LOT.	Repr. by Age Classes 0-10	11-20	21-30	Trees/Acre	Species by Percent F	H	C	Dom. Av. DBH.	Trees Av. THt.
L. 1303	11.6	-	-	4000	1	76	23	0 Cl.	-
Ar. S. of L. 448	94.2	-	-	9300		76	22	0 Cl.	-
L. 45	20.8	-	-	6600	Sp.19	63	17	.75	8.0
Ar. W.&S. of S.T.L. 45111	-	17.2	-	12400		88	11	0 Cl.	-
L. 38	38.0	5.6	-	10600& 2500		88&93	10& 6	0Cl& 2.0	- &18.0
Ar. S. of L. 111	-	146.0	-	6000	20	40	37	0 Cl.	-
Ar. N. & E. of L. 45	28.8	11.4	-	5160	7	63	29	0 Cl.	-
Ar. S. of L. 353.	9.4	14.4	-	8000& 6000	24 & 20	75&40	1 & 37	0 Cl.	-
Ar. E. of L 327 & 349	80.4	23.2	-	6960 &	6 &	44&	47 &	0 Cl.&	-
Ar. E. of S.T.L. 31746	176.6	-	-	10800		78	20	0 Cl.	-
L. 1064	135.6	-	-	14000	Pw. 10	82	7	0 Cl.	-
Ar. Between L. 1061 & 1857	-	17.6	-						
" " L's 447 & 394	21.6	-	-	9500		93	6	.75	8.0
L. 394	413.4	-	-	9500		93	6	.75	8.0
L. 355	-	80.0	-	12400		88	11	0 Cl.	-
L. 354	-	38.0	-	12400		88	11	0 Cl.	-
L. 352	-	7.6	-	12400		88	11	0 Cl.	-
L. 351	191.78	-	34.8	8000 & 1200	24 & 0	75&92	1&8	0Cl&3.0	- & 30
L. 353	129.0	51.0	-	8000 & 1900	24 & 1	75&61	1 & 37	0 Cl.	-
L. 350	97.12	31.7	-	1850	2	91	6	0 Cl.	-
L. 327	83.5	-	84.5	1900 & 6750	20 & 2	73&78	4 & 14	0Cl&1.5	- & 16
L. 80	15.6	-	-	2270	6	58	32	0Cl.	-
L. 1302	94.2	-	-	2270	6	58	32	0 Cl.	
L. 287	151.4	-	-	2270	6	58	32	0 Cl.	
S.T.L. 31746	181.6	-	-	10800		78	20	0 Cl.	-
S.T.L. 38764	13.0	-	-						
S.T.L. 30613	163.6	-	-	9300		76	22	0 Cl.	-
L. 447	254.0	-	-	10800		78	20	0 Cl.	-
L. 448	26.4	-	-	9300		76	22	0 Cl.	
L. 905	96.0	-	-	10600		88	10	0 Cl.	-
L. 111	97.0	185.4	-	1850 & 6000	2 & 20	91&40	6 & 37	0 Cl.	-
L. 1061	70.2	-	-	14000	Pw. 10	82	7	0 Cl.	-
L. 1062	80.8	-	-	14000	Pw. 10	82	7	0 Cl.	-
L. 1857	34.1	-	-	14000	Pw. 10	82	7	0 Cl.	-
L. 449	90.8	-	-	9500		93	6	.75	8.0
L. 20	25.6	-	-	2270	6	58	32	0 Cl.	-
TOTALS	2926.1	629.1	119.3						

HARDWICKE ISLAND FOREST.

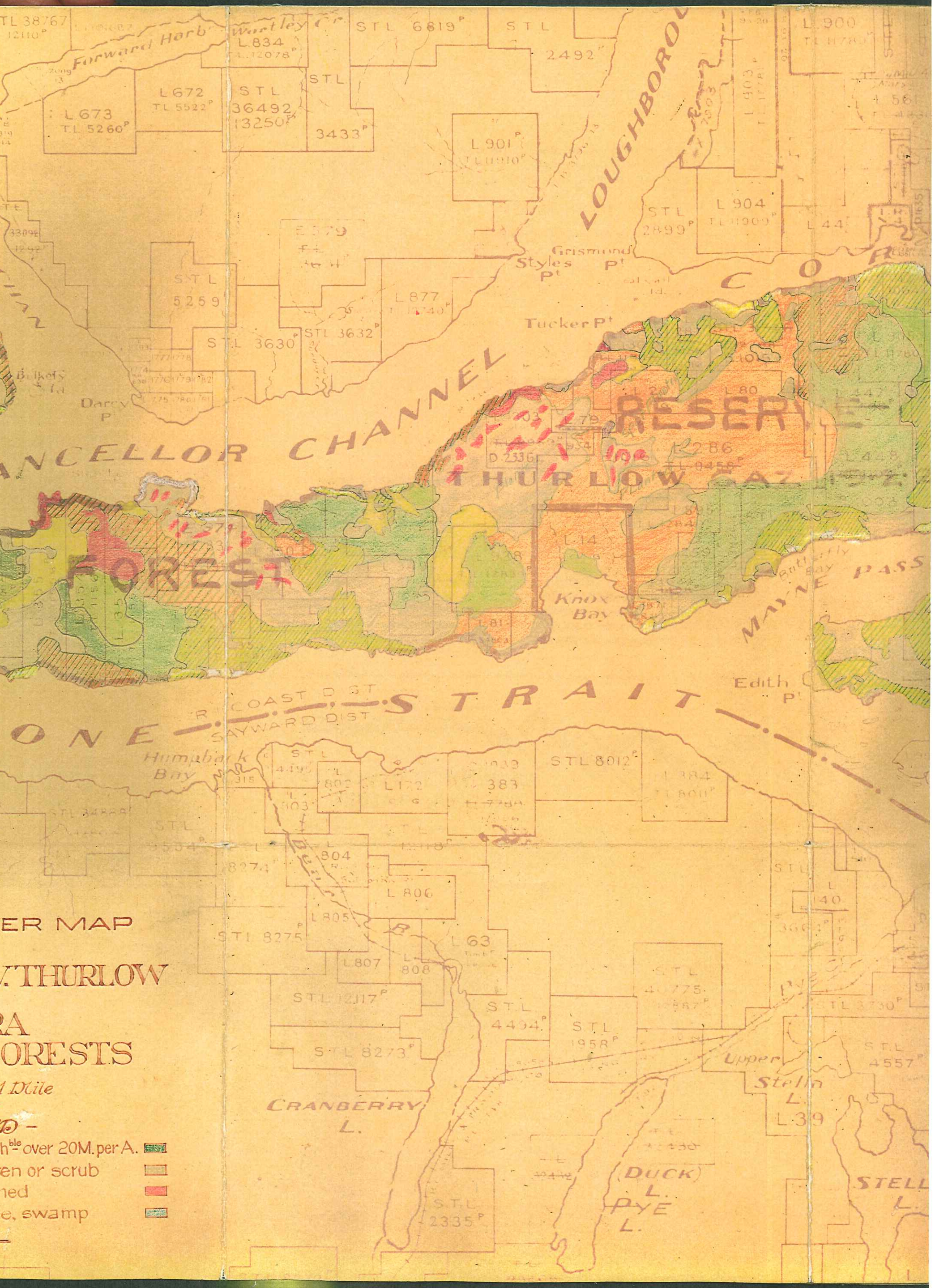
Summary of Young Growth by Lots.

LOT.	Repr. by Age Classes 0-10	11-20	21-30	Trees/Acre	Species by Percent F	H	C	Dom. Trees Av.DBH	Av.T.Ht.
X 4669	12.2			Fully Stocked	5	90	5	0 Cl.	-
X 4639 Blk. A & B	88.6	11.6		7225&6640	4 & -	85&88	Pw. 6&9	.75&1.0	8.0&10
X 5201	2.0		4.8	F.S.& 4200	& 19	& 67	& 11	0Cl.&1.0	- & 10
L. 96	810.2			920	15	68	8	0 Cl.	-
L. 667	130.9			2320	7	45	42	0 Cl.	-
L. 722	135.6			2320	7	45	42	0 Cl.	-
Ar. N. of L. 96	65.0			920	15	68	8	0 Cl.	-
" " " " 724, 725& 726	12.4			920	15	68	8	0 Cl.	-
" S. of L. 183 & X5201	94.0	8.0		3200 & F.S.	Pw.57&	25&	Pj.10&	0 Cl.&	- &
" N.E. of L. 181& N.of5201	183.6		149.0	F.S. & 4200	& 19	& 67	& 11	0Cl&1.0	- & 10
" W. of X4669	74.6			13500	12	66	15	0 Cl.	-
" E. & S. of L. 722	80.0			2320	7	45	42	0 Cl.	-
" S. of 724 & 725	58.8	23.0		7225 & 6640	4 & -	85&88	Pw 6 &9	.75&1.0	8.0&10
S.T.L. 34882 - 13093p.	228.2	26.8		2000 & 2000	10 & 5	80&75	5 & 5	0Cl&1.0	-& 10
S.T.L. 30566-13065p	110.8	2.0		F. Stocked	10 &	80 &	5 &	0Cl. &	-&
L. 181	169.1			F. Stocked				0 Cl.	-
L. 182	265.2	2.4		7760 &	5 &	75 &	Sp.12&	0 Cl.	-&
L. 183	103.2	8.4		7760 & F.S.	5 &	75&	Sp.12&	0 Cl.	-
L. 724	46.6			7225	4	85	Pw. 6	.75	8.0
L. 725	6.7			7600	10	75	Pw. 13	0 Cl.	-
S.T.L. 45117		46.0		Scant				0 Cl.	-
L. 19	115.6			7225	4	85	Pw. 6	.75	8.0
TOTALS	2793.3	128.2	153.8						


FOREST COVER MAP
of
HARDWICKE, E. & W. THURLOW
and
SONORA
PROVINCIAL FORESTS
Scale - 1" - 1 Mile
-LEGEND-
Logged
Logged and burned
Reproductive
Merchble under 20M. per A.
Merchble over 20M. per A.
Barren or scrub
Burned
Lake, swamp
CHANCELLOR CHANNEL
JOHNSTONE STR
Bessborough Bay
Church Pt
Althorp Pt
Forward Harb
WELLBORO CHAN
Bulkely Id
Darcy Pt
Eden Pt
Vere Cove
Tyhee Pt
Humphrey Bay
CRANBERRY L.
Styles Pt
Tucke
COAST DIST
SAYWARD DIST
FOREST



FOREST COVER MAP


Forward Harb
Wartley Cr
LOUGHBOROUGH
CHANNEL
THURLOW
RESERVE
FOREST
Styles Pt
Grismund Pt
Tucker Pt
Darcy P
Knox Bay
Butterfly Bay
MAYNE PASS
Edith Pt
STRAIT
COAST DIST
SAYWARD DIST
Humphrey Bay
CRANBERRY L.
DUCK L.
PYE L.
Upper Stella L.
STELLA L.
ER MAP
V. THURLOW
RA
OREST
1 Mile
D –
h^ble over 20M. per A.
en or scrub
ned
e, swamp

RODERICK CHANNEL
PASSAGE
ISLANDS
CHANNEL
NOOTKA SOUND
Green Point
Rasmussen
Shell Pt
Hemming L
Hemming Bay
Jackson Pt
Lee Ids
Block Id
Thurston Bay
Hardinge Id
Young Pass
Howe I
Rock Bay
Chathain P
Otter Cove
Limestone Id
STELLA L.
Elk Bay
Metcalf
Granite
Brent
Cinque Islet Pt
Venture Pt
Chong Bay
Bickley Bay
Thurlow Pt
Owen Pt
Channel Id
Johns Pt
Walkem
Simmons L
Deer
Timber cross
L 26
L 23
L 215
L 28
L 1437
L 1746
L 1745
L 908
S.T.L. 40523
D.1627
S.T.L. 40773
S.T.L. 45115
S.T.L. 10597
S.T.L. 1655
S.T.L. 4558
L 344
L 43
L 726
L 727
L 388
L 513
L 514
L 1187
L 1186
L 1185
L 1912
L 1913
L 1437
L 1752
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L 980
L 1190
L 1300
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L

FREDERICK
CORDERO CHANNEL
Gomer Id
Owen Pt
Channe Id.
Johns Pt
Hall Pt
Denham Id
Dent Id
Steep pt
Gillard Id
Arran Rapids
Florence L.
FOREST
SONORA ID.
STUART
Yuquot Rapids
Hole in the Wall
Okis Id
Walters Pt
Caroline L.
Etta Pt
Harbott Pt
MAURELLE ID.
Egerton L.
Choat Point
Choat Bay