PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF LANDS

HON. A. W. GRAY, *Minister.*

H. CATHCART, *Deputy Minister.* P. Z. CAVERHILL, *Chief Forester.*

REPORT

OF

THE FOREST BRANCH

FOR THE

YEAR ENDED DECEMBER 31ST

1933

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1934.

VICTORIA, B.C., February 26th, 1934.

To His Honour J. W. FORDHAM JOHNSON,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

Herewith I beg respectfully to submit the Annual Report of the Forest Branch of the Department of Lands for the year 1933.

A. W. GRAY,
Minister of Lands.

The Hon. A. W. Gray,
Minister of Lands, Victoria, B.C.

SIR,—There is submitted herewith the Annual Report on activities of the Branch during the calendar year 1933.

P. Z. CAVERHILL,
Chief Forester.

REPORT OF THE FOREST BRANCH.

Any attempt to review forestry and lumber-trade conditions throughout 1933 and to indicate possible trends for 1934 is fraught with many difficulties. The general downward trend which had prevailed since 1929, the peak year of production, was checked early in the year, and by July a slight but steady improvement began, which, in so far as lumber is concerned, continued throughout the last six months. This improvement, reflected almost wholly in overseas buying and especially in the United Kingdom market, may be attributed partially to improved money conditions, but more to active trade-extension work carried on in those markets. It must also be remembered that these are highly competitive and that the prices prevailing, while somewhat better than in 1932, were still such that no adequate return was received for the produce shipped, and a further advance of $4 to $5 per thousand is needed, if we are to receive a return for stumpage and reasonable operating costs.

On the other hand, the United States market for the time being must be considered almost wholly outside the picture. The Prairie, Eastern Canada, and local sales did not absorb more than 35 per cent. of normal, and here also the prices received were far below profitable operating costs. In summing up, the production of sawn lumber was approximately 1,200,000 M.B.M., as compared with 2,460,000 M.B.M. in 1929; and the value was $16,200,000, as compared with $51,196,464 in 1929.

In minor forest products the courses followed were varying. The shingle market was relatively active during the spring and early summer. The adoption of the N.R.A. code in the United States, our chief shingle market, and the placing of British Columbia shingles on a quota basis thereunder, the seasonal decline in building, etc., have reacted to materially curtail production during the last quarter of the year.

In cedar poles, a slight improvement in the markets permitted a partial liquidation of yard stocks, and, in hewn ties, contracts let by Canadian railways for the winter's operation show a considerable advance over 1932.

As for 1934, it may be expected that the continued financial improvement throughout the world will react favourably in increasing the volume of sales and perhaps prices in foreign markets. The United States, which absorbed 600,000 M.B.M. in 1929, will absorb very little, if any, British Columbia lumber during 1934, while the local and Canadian markets will depend on the wheat-crop and the prices obtained for same, and on the Eastern money situation and whether or not credits are available for needed and deferred building. Some improvement may be experienced in this latter market, but, taking it all in all, it would appear that we cannot expect any very large increase in the volume of production, nor any immediate return to conditions such as prevailed in the period of 1926 to 1929.

The effect of the improvement during the latter part of 1933 on the general conditions in the Province may be illustrated by the following figures of log scale:—

	1933.	1932.
	(In Millions of Feet.)	
Scale during first six months	607	804
Scale during last six months	1,025	638
Scale during December	123	80

During December it is estimated that approximately 3,500 more men were employed in the timber industries than at the same date in 1932, and, if present conditions continue throughout 1934, some 4,000 to 5,000 men will be restored to pay-rolls during the year, making a material saving in relief expenditures.

The fifth session of the Pacific Science Congress met in British Columbia June 2nd to 15th last. The Congress brought together scientists from all countries bordering on the Pacific Ocean and dealt with many problems facing these countries, among them the problems of forestry. Resolution No. 1 of the Congress deals with the subject of forest production, as follows:—

"Moved by Dr. T. Wayland Vaughan (U.S.A.), seconded by Dr. C. Skottsberg (Sweden), and carried:—

"Whereas in many countries of the Pacific basin, forest fires are increasing in number and destructiveness:

"*Resolved*, That the Pacific Science Congress, acting through the proper channels, invite the attention of the Governments and peoples of the countries concerned to the necessity of vigorous action in the suppression of forest fires in an effort to reduce the great depletion of commercially valuable timber, the extensive areas of waste land, the destruction by uncontrolled flooding, the loss of soil-fertility by erosion and other detrimental effects resulting from repeated forest fires; also to the necessity of making provision for fundamental research in the solutions of the problems indicated above."

ORGANIZATION AND PERSONNEL.

During the year a further reduction of five was made in the permanent staff, which at the end of the year stood at 197, as compared with 204 in 1932, and 287 on the taking-over of the Railway Belt in 1930. The remaining personnel gave excellent service in spite of many handicaps and an increasing load of timber-sales, land examinations, more active logging operations, and the many incidental tasks which go to make up the Forest Officer's daily duties. The particulars and distribution of the staff throughout the year are shown in the following table:—

DISTRIBUTION OF FORCE, 1933.

Forest District.	PERMANENT.										TEMPORARY.				
	Chief Forester, Assistant Chief Forester, and Foresters.	District Foresters and Assistant District Foresters.	Supervisors of Scalers and Assistants.	Scalers and Assistant Scalers.	Assistant Foresters and Junior Foresters.	Inspectors, Royalty, Mechanical, and Export.	Supervisors of Rangers and Fire Inspectors.	Rangers.	Draughtsmen.	Clerks, Stenographers, and Messengers.	Assistant Rangers.	Patrolmen, Lookout-men, and Dispatchers.	Launch Crews and Repairmen.	Cruisers, Compass-men, and Packers.	Total.
Fort George	....	2	....	....	....	....	....	7	....	4	....	13	....	....	26
Kamloops	....	2	....	....	2	....	2	13	1	7	....	33	....	....	60
Nelson	....	2	1	....	....	....	3	10	1	6	....	27	....	....	50
Prince Rupert	....	2	....	1	....	....	1	7	....	5	....	14	2	....	32
Vancouver	....	2	3	23	2	1	3	15	1	17	....	36	11	....	114
Victoria	5	....	1	....	9	2	....	1	6	28	....	....	2	6	60
Totals	5	10	5	24	13	3	9	53	9	67	....	123	15	6	342

PROVINCIAL FORESTS.

Five new areas were reserved as Provincial Forests during the year. These were examined and reported upon in 1930 and 1931. The *Douglas Forest* covers an area of 696 square miles in the New Westminster Land District between Stave River and Harrison Lake; it contains 2,500,000,000 board-feet of accessible timber, 2,560 acres of young growth, and could produce 35,000 M.B.M. annually in perpetuity if managed on a sustained yield basis. The name is taken from the old town, named after Governor Douglas, at the head of Harrison Lake, on the old route to Lillooet and the Cariboo.

The new *Elk Forest*, 2,426 square miles in the Kootenay District, covers the watersheds of the Elk and Bull Rivers, flowing from the Rocky Mountains into the Kootenay River. The *Flathead Forest*, 532 square miles in the Kootenay District, adjacent to the Elk Forest, covers the watershed in this Province of the Flathead River down to the boundary of the State of Montana. The *Barriere Forest*, 532 square miles in the Kamloops District, covers the watershed of the Barriere River, a tributary of the North Thompson. The *Momich Forest*, 1,566 square miles also in the Kamloops District, lies to the east of the Barriere Forest and covers the watersheds of the Adams and Seymour Rivers; it takes its name from the Momich Lake and River, which drain the southern part of the Forest and flow into Adams Lake. These Forests have been reserved for the perpetual production of timber and lands suitable for agricultural development have not been included within their boundaries.

Forest Surveys.

A still further reduction in the programme of surveys of areas suitable for forest reserves was necessitated by financial conditions. Only one small party could be put in the field. It made a forest and topographical survey of the Seechelt Peninsula and Jervis Inlet. This area has produced great volumes of timber and, by reason of the numerous inlets, is very accessible to the Vancouver logging industry. Compilations and maps are being prepared.

These surveys, carried on during the last nine years, have now provided maps and knowledge of forest conditions on 14,000,000 acres of land more suitable for forestry than agriculture. The preliminary step in the process of bringing these areas under forest-management has been taken; the ultimate object is to bring the Provincial Forests into condition to supply a sustained annual yield of raw material for the forest industries of the Province. Twelve million five hundred and seventy-eight thousand acres (19,650 square miles) are under reserve in these Provincial Forests for the perpetual production of timber; this area is only 5 per cent. of British Columbia and 19 per cent. of the area in the Province which is believed to be more suitable for this purpose than any other.

Topographic and forest maps and reports were completed for the Shuswap, Larch Hills, Mount Ida, Arrowstone, and Hat Creek Forests, in the Railway Belt, transferred to the Province by the Dominion, of which a survey was made last year.

The *Shuswap Forest* lies north of Shuswap Lake and east of Adams Lake, in the Kamloops District, and within its revised boundaries covers 230,900 acres, classified as follows:—

Area capable of producing Commercial Timber—	Acres.	Acres.
Mature timber		89,460
Immature timber—		
1– 20 years old	15,000	
21– 40 years old	8,660	
41– 60 years old	10,680	
61– 80 years old	29,150	
81–100 years old	360	
		63,850
Recent burns, not reforested	12,330	
Non-commercial cover	6,920	
		19,250
Total sites of productive quality		172,560
Area incapable of producing Commercial Timber—		
Barren and scrub-covered		43,360
Grass and meadow		14,360
Swamp and water		620
Total non-productive sites		58,340

The timber is estimated as follows to a minimum D.B.H. of 11 inches:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Engelmann spruce	233,400	21,200	254,600
Western red cedar	106,400	13,000	119,400
Western hemlock	90,700	21,300	112,000
Douglas fir	85,200	22,700	107,900
Silver fir (balsam)	96,000	6,300	102,300
White pine	13,700	6,900	20,600
Yellow pine	2,200	500	2,700
Lodgepole pine	300	.....	300
Totals	627,900	91,900	719,800

There are, in addition, estimated to be 3,575,000 lineal feet of cedar pole timber, and 471,000 cords of smaller spruce and silver-fir stands suitable for pulp.

The spruce-silver fir stands at the higher elevations are chiefly suitable for pulp-wood. There is in this Forest a proportion of middle-aged classes of immature timber which is better than average and the Forest could produce a sustained annual yield not far below its regulated capacity. In its present condition a sustained yield of 12,900,000 F.B.M. saw-timber and 100,000 lineal feet cedar poles is available annually; increasing to 14,600,000 F.B.M. saw-timber, 283,000 lineal feet poles, and 4,800 cords of pulp-wood after regulation and when markets develop. To date the Forest has been logged chiefly for cedar poles, yellow pine and fir saw-timber, and some fir ties; most operations have been selective, leaving the Forest in good condition.

The *Larch Hills* (32,600 acres) and *Mount Ida* (33,150 acres) are two small Forests lying to the south and east of Salmon Arm. They are divided by the partly cultivated valley traversed by the highway between Salmon Arm and Grindrod, and are equally accessible. They have been summarized together as follows:—

Area capable of producing Commercial Timber—	Acres.	Acres.
Mature timber		18,320
Immature timber—		
1–20 years old	1,830	
21–40 years old	8,680	
41–60 years old	11,160	
61–80 years old	10,360	
Over 80 years old	7,700	
		39,730
Burned, not reforested	200	
Non-commercial cover	3,670	
		3,870
Total sites of productive quality		61,920
Area incapable of producing Commercial Timber—		
Barren and scrub-covered		3,480
Water and swamp		280
Grass		70
Total non-productive sites		3,830

The mature timber, to a minimum D.B.H. of 17 inches for yellow pine and 11 inches for other species, is estimated as follows:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Douglas fir	37,350	17,250	54,600
Western red cedar	30,000	7,850	37,850
Engelmann spruce	11,050	1,200	12,250
Yellow pine	1,800	8,250	10,050
Western hemlock	6,000	1,850	7,850
White pine	4,400	650	5,050
Silver fir (balsam)	3,750	.....	3,750
Western larch	2,400	400	2,800
Lodgepole pine	300	.....	300
Totals	97,050	37,450	134,500

These volumes include timber suitable for 242,000 hewn ties and 2,100,000 lineal feet of cedar poles. The older immature stands could be thinned to produce 785,000 fir, larch, and lodgepole-pine ties in addition to the above.

Utilization has been chiefly by selective cutting of poles and ties, averaging for the last few years the equivalent of 125,000 F.B.M. per annum, in addition to about 200 cords of fuel. As in the Shuswap Forest, the proportion of middle-aged classes is unusually good and the Forest could, in its present condition, support its estimated regulated sustained yield of 4,200,000 F.B.M. per annum, including poles and ties. The timber is all accessible.

The *Arrowstone Forest*, 186,800 acres north and east of Ashcroft, has little or no economic value for the production of commercial timber. Although three-quarters of the area may be classified as productive, the timber is of very low quality, good enough only for rough lumber, sawn ties, or fuel. The lodgepole-pine stands average site quality 50; i.e., the average tree takes eighty years to grow 50 feet high, and can be considered of value only as ground-cover and with a problematic future use for the production of pulp-wood when the time comes for such low-quality stands, which are at present inaccessible to any market. The area was reserved by the Dominion Government chiefly for watershed protection, but it is doubtful if this object justifies its continued administration as a Provincial Forest. The area has considerable grazing value in the open stands.

Qualified by the above remarks, the area may be classified as follows:—

	Acres.	Acres.
Area capable of producing Low-grade Timber—		
Mature timber		45,380
Immature timber—		
1– 20 years old	8,030	
21– 40 years old	2,190	
41– 60 years old	57,250	
61– 80 years old	6,200	
81–100 years old	1,300	
Selectively logged	330	
		75,300
Burned, not reforested	1,400	
Non-commercial cover	20,300	
		21,700
Total sites of productive quality		142,380
Area incapable of producing Commercial Timber—		
Alpine, barren, and scrub sites		41,980
Open grass		1,250
Swamp and water		1,190
Total non-productive sites		44,420

The mature timber (all Crown timber) is estimated as follows:—

Species.	Saw-timber (over 11" D.B.H.).	Pulp-timber (over 7" D.B.H.).
	M.B.M.	Cords.
Yellow pine	23,040	.....
Douglas fir	20,210	.....
Spruce	260	1,400
Lodgepole pine	.....	108,250
Totals	43,510	109,650

There are in addition 138,800 cords of fuel-wood, 95 per cent. fir.

The *Hat Creek Forest*, 491,000 acres west of Ashcroft, is of a quality very similar to that of the Arrowstone in so far as its value as a commercial timber-producer is concerned. It can grow timber suitable only for rough farm lumber, ties, and fuel. Its young stands are nearly all lodgepole pine of an even lower quality than those of the Arrowstone Forest. Reserved by the Dominion Government for watershed protection, it is doubtful if it is worth the expense of

administration as a Provincial Forest. Numerous cattle-ranches border the Forest and their cattle graze the open stands within the boundaries; the higher mountain ranges provide summer grazing for large flocks of sheep.

Classified as a forest, the following conditions exist:—

Area capable of producing Low-grade Timber—	Acres.	Acres.
Mature timber		146,000
Immature timber—		
21–40 years old	19,300	
41–60 years old	25,100	
61–80 years old	3,200	
Selectively logged	800	
		48,400
Burned, not reforested	2,900	
Non-commercial cover	28,200	
		31,100
Total sites of productive quality		225,500
Incapable of producing Commercial Timber—		
Alpine, barren, or scrub		246,600
Grass, swamp, and water		19,200
Total non-productive sites		265,800

The Forest contains 185,300 M.B.M. low-grade Douglas fir; 21,400 M. yellow pine; 16,200 M. Engelmann spruce; 1,800 M. lodgepole pine; total, 224,700 M.B.M.; also 552,000 cords of fir fuel-wood and 116,000 cords of pulp-wood, chiefly lodgepole pine.

Maps and reports on the area examined last year on *Loughborough Inlet* and neighbouring islands, in the Vancouver Forest District, were completed. Forest land which during the last ten years has produced over one billion board-feet of fine logs lies between the entrances of Knight and Bute Inlets. A forest and topographic survey was made of this and it is classified as follows (Mainland only):—

Area capable of producing Commercial Timber—	Acres.	Acres.
Mature timber—		
On vacant Crown land	77,450	
Alienated	83,210	
		160,660
Immature timber—		
1– 20 years old	20,420	
21– 40 years old	13,400	
41– 60 years old	1,020	
61– 80 years old	800	
81–100 years old	130	
		35,770
Logged or burned, not reforested	41,510	
Non-commercial cover	10,250	
		51,760
Total sites of productive quality		248,190
Incapable of producing Commercial Timber—		
Alpine, barren, or scrub		335,430
Swamp and water		14,910
Total non-productive sites		350,340

The timber, to 11 inches minimum D.B.H., is estimated as follows:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western hemlock	730,000	751,600	1,481,600
Western red cedar	362,600	963,500	1,326,100
Silver fir (balsam)	383,500	356,100	739,600
Douglas fir	174,600	185,000	359,600
Sitka spruce	48,300	40,700	89,000
Yellow cypress	19,300	49,700	69,000
White pine	5,400	14,500	19,900
Totals	1,723,700	2,361,100	4,084,800

The Forest could maintain a sustained annual yield of 40,700 M.B.M., rising to 62,500 M.B.M. when regulated, the lower figure being due to the shortage of middle-aged timber, as usual in our Coast forests. The average cut for the last ten years has been 105,000 M.B.M. This over-cutting being general in the Vancouver District, the forest industries concerned will experience a shortage of timber, unless improvement can be made in logging methods whereby a greater yield per acre can be obtained. Selective logging is a possible solution. With logging methods planned to avoid the creation of large areas of slash, fire protection should not be a major problem in this comparatively wet cedar-hemlock region. Practically all loss has been due to slash fires; a yearly average of 2,800 acres of logged lands have been burned during the last ten years. The area is recommended for reserve as a Provincial Forest.

In the same survey last year *Broughton, Gilford, Cracroft, Harbledown,* and smaller islands were included. These are small forested islands lying between the north end of Vancouver Island and the Mainland. They total 224,650 acres and were classified as follows:—

	Acres.	Acres.
Area capable of producing Commercial Timber—		
Mature timber		112,650
Immature timber—		
1– 20 years old	15,780	
21– 40 years old	2,960	
41– 60 years old	730	
61– 80 years old	840	
81–100 years old	190	
		20,500
Logged and burned, not reforested	11,130	
Non-commercial cover	6,170	
		17,300
Total sites of productive quality		150,450
Incapable of producing Commercial Timber—		
Barren and scrub sites		67,940
Swamp and water		6,260
Total non-productive sites		74,200

The timber, to 11 inches minimum D.B.H., is estimated as follows:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western red cedar	426,900	1,038,300	1,465,200
Western hemlock	243,300	628,200	871,500
Silver fir (balsam)	97,800	267,900	365,700
Yellow cypress	34,200	35,800	70,000
Sitka spruce	7,800	37,000	44,800
Douglas fir	8,800	21,300	30,100
White pine	2,600	5,900	8,500
Totals	821,400	2,034,400	2,855,800

The islands could maintain a sustained annual yield of 29,000 M.B.M., rising to 32,800 M.B.M. after regulation. The average cut for the last ten years has been 35,000 M.B.M., so that over-cutting is taking place here as on the adjacent Mainland. Little damage is done by fires which have burned an average of 320 acres a year during the last ten years, practically all in slash. It will be noticed that nearly 70 per cent., a very high percentage, of the total area is productive; the islands are quite unsuitable for agricultural settlement on account of the nature of the soil and location, and are recommended for reserve as Provincial Forests.

The reconnaissance of the *Duncan* and *Lardeau Rivers*, made last year, disclosed the following conditions on an area totalling 1,098,300 acres:—

Area capable of producing Commercial Timber—

	Acres.	Acres.
Mature timber—		
Accessible	58,400	
Inaccessible	124,900	
		183,300
Immature timber—		
1– 20 years old	6,300	
21– 40 years old	50,500	
41– 60 years old	9,500	
61– 80 years old	19,400	
81–100 years old	300	
		86,000
Burned, not reforested	55,800	
Non-commercial cover	17,500	
		73,300
Total sites of productive quality		342,600

Incapable of producing Commercial Timber—

Alpine, barren, and scrub	735,000
Swamp and water	20,700
Total non-productive sites	755,700

The area carried the following timber, over 11 inches minimum D.B.H.:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western hemlock	459,100	164,100	623,200
Western red cedar	312,300	223,000	535,300
Engelmann spruce	424,900	43,700	468,600
Silver fir (balsam)	102,200	13,600	115,800
Douglas fir	53,000	34,600	87,600
White pine	30,600	18,700	49,300
Western larch	18,900	7,400	26,300
Lodgepole pine	3,100	.....	3,100
Totals	1,404,100	505,100	1,909,200

The Duncan River flows from the Selkirk Mountains, which accounts for the large proportion of unproductive area. There is at present no commercial utilization of this great body of saw-timber. The large extent of burns not reforested with commercial species indicates the desirability of improved protection. Arable lands are confined to the valley-bottoms, and much of the lower Duncan land would require expensive dyking before farming could be carried on. The area is recommended for reserve as a Provincial Forest.

The extensive reconnaissance of 2,000,000 acres of the *Columbia River* watershed (Big Bend) made last year mapped 299,000 acres of mature timber, 66,000 acres of immature timber, and 15,000 acres of burn. Most of the watershed is the barren or scrub-covered slopes of the Rocky and Selkirk Mountains.

The timber was estimated as follows:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western red cedar	567,000	433,700	1,000,700
Engelmann spruce	642,200	249,600	891,800
Douglas fir	239,200	107,200	346,400
Silver fir (balsam)	254,200	47,900	302,100
Western hemlock	120,400	75,800	196,200
White pine	16,300	15,400	31,700
Totals	1,839,300	929,600	2,768,900

There are in addition 450,000 lodgpole-pine and fir ties on the Canoe River.

PROVINCIAL FOREST INVENTORY.

The forest atlas and timber estimates for the Kamloops Forest District were completed. All possible public and private sources were tapped in order to make the resulting compilations as accurate as possible. The following schedules give the classification of land and estimates of standing timber, divided into the twenty drainages shown on the accompanying index map.

Forest conditions in this District are somewhat better than in the Nelson District, which was reported last year. While the productive percentage of the area (43 per cent.) is about the same (Nelson 40 per cent.), less than 16 per cent. of it is not forested as compared with 24 per cent. in the Nelson District. Immature timber covers 54 per cent. (Nelson 43 per cent.); 69 per cent. of these young stands are over 25 feet high.

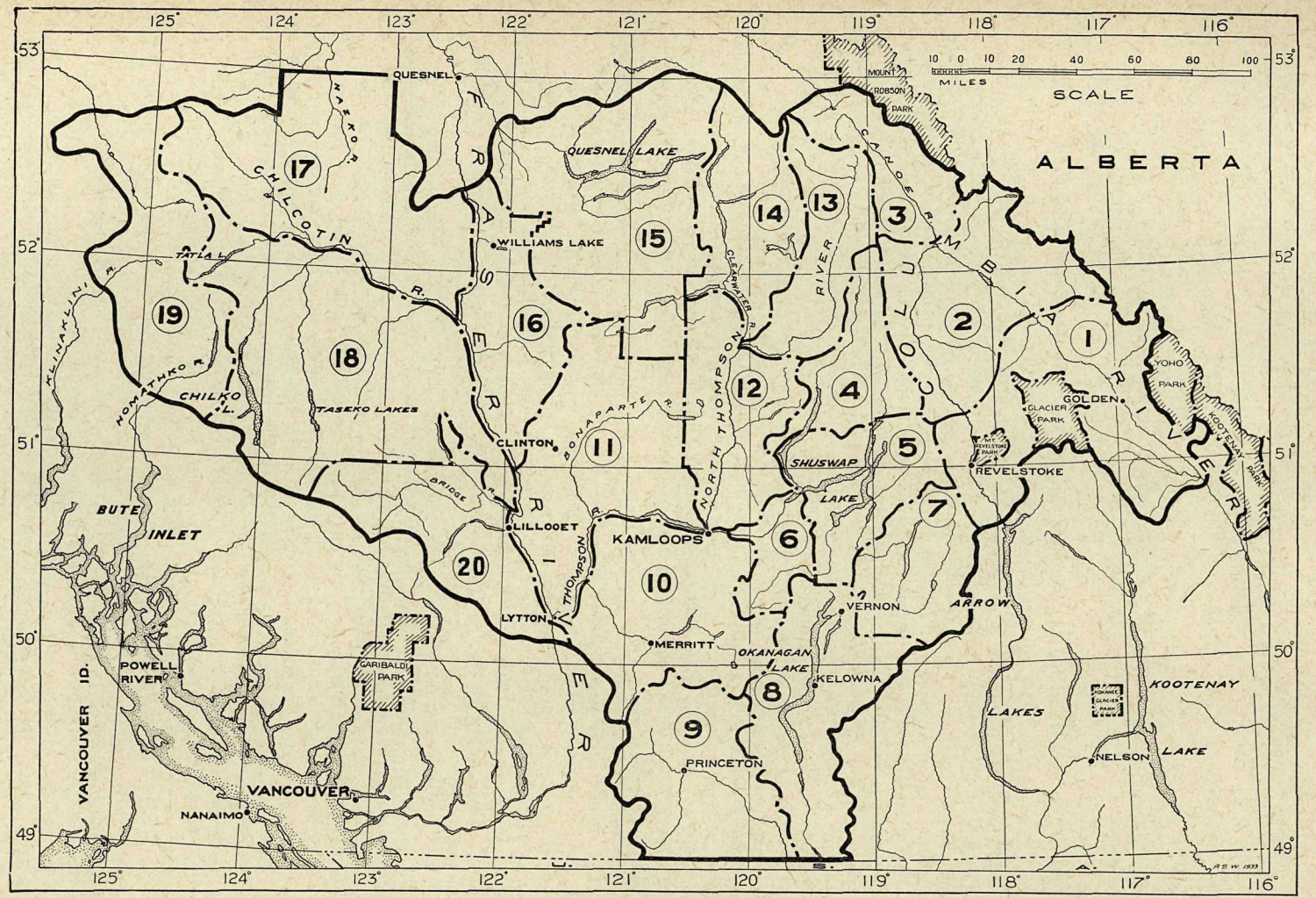
The effect of logging on the growing stock in this area is far less harmful than that of the heavy machine-cutting on the Coast. Much of it is of a selective nature, thinning for ties and poles. When this type of logging is carefully done, periodic cuts in the same stand can be made at much shorter intervals than when the complete forest-cover is removed or destroyed. Only 1 per cent. of the whole productive forest area is shown as logged and not reforested, while in the Southern Coast Region this condition exists on over 14 per cent., a comparison which speaks for itself.

The timber estimates were carefully adjusted to make the results of different cruisers' work as consistent as possible, and to check and revise old cruises. Of the total volume, 6 per cent. was estimated from private cruises; 54 per cent. from Provincial Forest surveys and other Forest Service cruises; 40 per cent. from extensive reconnaissance, including the Pacific Great Eastern Railway Resources Survey of 1930. The total volume of saw-timber is 31,871,500 M.B.M., of which 11,977,400 M.B.M. (37 per cent.) is considered to be accessible for present logging methods and with prices in the upper range of those which have obtained in the industry in the past.

Exact figures of the average annual depletion are not available owing to changes in the Kamloops District boundaries and the unestimated loss by insects, particularly bark-beetles. Logging varied during the last ten years from about 120,000 M.B.M. to 58,400 M.B.M. (average for last four years). A normal annual cut may be estimated at 100,000 M.B.M. The average annual loss by fire during the last ten years has been 42,500 M.B.M. The insect loss has been very largely in inaccessible lodgepole pine and low-quality fir. The total average annual depletion of accessible stands may be estimated at 150,000 M.B.M. This is within the sustained yield capacity of the district, as the accessible timber will last for eighty years at this rate of cutting and there should then be large volumes of timber in the stands now immature. Utilization, however, is not evenly distributed, some of the Provincial Forests, as reported elsewhere, being over-cut. This condition may have a bad effect on the future prosperity of some villages and communities depending to a large extent on forest industries.

In addition to the saw-timber quoted in the schedules, there are estimated to be about 5,000,000 cords of low-grade timber, chiefly fir, suitable only for fuel or very rough lumber. Also 3,400,000 cords of small timber, chiefly lodgepole pine and all inaccessible for present logging, suitable for pulp-wood but not large enough for lumber.

The Dominion Commission of Conservation, in 1917, estimated 38,381,700 M.B.M. on this same area. There was possibly an overestimate of cedar (9,590,000 M.) and hemlock (4,173,000 M.) at that time. Heavy stands of these species in this region have been found to be extremely defective.



PROVINCIAL FOREST INVENTORY.

Key to drainage-basins of the *Kamloops Forest District*. Numbers refer to drainages in accompanying schedules.

PROVINCIAL FOREST INVENTORY.

Classification of Areas (in Acres) in Kamloops Forest District.

No. on Map.	Drainage-basin.	Merchantable Timber.	Immature Timber.				Total Immature Timber.	Not Restocking.					Total Productive Forest Land.	Non-productive.			Total Non-productive.	Agriculture.		Total Area.
			Over 25 Feet.		Under 25 Feet.															
			Fully Stocked.	Sparse.	Fully Stocked.	Sparse.		Logged.	Burned.	Logged and Burned.	Non-Commercial Cover.	Total Not Restocking.		Barren.	Scrub.	Swamp and Water.		Cultivated.	Open Grazing.	
1	Revelstoke to Golden	189,215	184,218	19,050	48,667	7,725	259,660	4,852	78,710	35,825	71,760	191,147	640,022	1,335,530	721,064	40,415	2,097,009	5,750	5,390	2,748,171
2	Big Bend Columbia River	351,380	26,210	.....	30,260	.....	56,470	.....	4,350	.....	17,380	21,730	429,580	1,159,990	316,940	27,610	1,504,540	130	.....	1,934,250
3	Canoe River	80,680	35,400	3,600	10,260	6,140	55,400	5,525	17,205	710	1,770	25,210	161,290	676,150	124,340	12,140	812,630	640	.....	974,560
4	Adams-Seymour Rivers	238,885	100,195	.....	83,780	.....	183,975	.....	105,195	.....	8,265	113,460	536,320	58,625	400,060	29,410	488,035	.....	1,110	1,025,465
5	Shuswap Lake	238,500	210,300	4,450	40,040	7,750	262,540	4,935	51,710	6,010	70,565	133,220	634,260	113,680	255,712	106,405	475,797	41,005	42,960	1,194,022
6	South Thompson River	182,542	220,930	10,390	9,572	.....	240,892	9,490	22,810	.....	49,037	81,337	504,771	12,910	60,074	15,170	88,154	24,990	45,035	662,950
7	Shuswap River	257,880	243,741	2,800	25,340	1,710	273,591	3,230	68,775	3,130	26,630	101,765	633,236	213,414	216,074	23,273	452,761	17,940	11,060	1,114,997
8	Okanagan	467,446	476,071	8,475	89,271	12,075	585,892	18,590	236,420	.....	8,845	263,855	1,317,193	30,620	350,828	103,640	485,088	115,435	150,090	2,067,806
9	Similkameen	186,231	242,950	24,991	111,471	49,333	428,745	10,240	140,562	.....	1,600	152,402	767,378	26,890	923,909	10,750	961,549	25,820	108,875	1,863,622
10	Nicola	614,193	486,287	1,662	36,448	1,660	526,057	24,195	62,610	2,930	121,130	210,865	1,351,115	41,845	487,946	64,350	594,141	48,730	428,811	2,422,797
11	Bonaparte	525,669	485,464	79,867	59,945	11,892	637,168	18,350	16,855	120	193,745	229,070	1,391,907	21,910	856,332	57,868	936,110	24,990	231,735	2,584,742
12	Lower North Thompson River	451,355	404,630	45	65,105	1,020	470,800	12,100	103,300	3,480	174,260	293,140	1,215,295	38,330	262,870	51,990	353,190	14,255	72,500	1,655,240
13	Upper North Thompson River	202,513	28,000	.....	73,890	29,850	131,740	8,335	38,690	3,810	3,070	53,905	388,158	427,591	367,525	10,990	806,106	1,720	15,680	1,211,664
14	Clearwater River	175,105	16,950	.....	22,290	5,120	44,360	.....	30,380	.....	123,430	153,810	373,275	588,850	300,440	65,460	954,750	180	5,350	1,333,555
15	Quesnel-Horsefly	535,836	455,711	350,443	170,534	178,426	1,155,114	170	93,570	.....	145,681	239,421	1,930,371	230,010	960,288	174,001	1,364,299	800	59,225	3,354,695
16	Fraser River, East	161,364	162,761	3,869	23,237	13,440	203,307	13,520	19,940	.....	30,161	63,621	428,292	12,300	767,120	32,400	811,820	16,115	201,774	1,458,001
17	Chilcotin River North	138,488	740,359	356,821	335,243	149,452	1,581,875	20	100,890	.....	.....	100,910	1,821,273	7,553	1,243,911	53,725	1,305,189	3,250	216,217	3,345,929
18	Chilcotin River South	155,940	536,369	194,588	720,460	312,211	1,763,628	220	114,776	.....	20,475	135,471	2,055,039	704,928	1,228,711	115,400	2,049,039	23,100	304,947	4,422,125
19	Dean Homathko Headwaters	20,461	139,216	98,165	42,755	50,372	330,508	.....	76,270	.....	43,116	119,386	470,355	850,802	977,800	59,453	1,888,055	250	109,730	2,468,390
20	Bridge River-Lytton	53,080	44,953	.....	18,910	6,050	69,913	3,050	10,680	510	6,570	20,810	143,803	1,064,452	616,671	32,580	1,713,703	2,430	13,850	1,873,786
	Totals	5,226,763	5,240,715	1,159,216	2,017,478	844,226	9,261,635	136,822	1,393,698	56,525	1,117,490	2,704 535	17,192,833	7,616,380	11,438,555	1,087,030	20,141,965	367,530	2,024,339	39,726,767
		.....	56.6%	12.5%	21.8%	9.1%	100%	5.1%	51.5%	2.1%	41.3%	100%	.....	.....	.....	....	.....	....	....	.....
		30 4%	.....	.....	.....	....	53.9%	....	....	....	....	15.7%	100%	37.8%	56.8%	5.4%	100%	....	...	.....
		12.2%	.....	.....	.....	....	23.3%	....	...	....	....	6.8%	43.3%	19.2%	28.8%	2.7%	50.7%	0.9%	5.1%	100%

PROVINCIAL FOREST INVENTORY—*Continued.*

Accessible Merchantable Timber in Kamloops Forest District.

No. on Map.	Drainage-basin.	Merchantable Acreage.	Thousand Board-feet, B.C. Log Scale.									Total.
			F.	C.	H.	S.	B.	Pw.	Py.	Pl.	L.	
1	Revelstoke-Golden	89,225	113,540	257,460	101,370	231,450	36,620	27,300	.....	5,370	.....	773,110
2	Big Bend, Columbia River	151,050	135,870	866,830	196,670	405,210	20,210	31,230	.....	.....	.....	1,656,020
3	Canoe River	23,900	26,550	35,160	.....	40,460	13,720	.....	.....	14,600	.....	130,490
4	Adams-Seymour Rivers	1,680	5,310	4,380	490	360	.....	820	.....	140	.....	11,500
5	Shuswap Lake	110,835	281,550	238,060	51,400	84,720	13,350	41,170	23,110	3,530	13,200	750,090
6	South Thompson River	161,472	400,200	5,400	.....	127,120	16,790	.....	66,910	2,190	.....	618,610
7	Shuswap River	164,479	537,200	218,300	157,650	78,310	19,720	111,170	27,640	29,710	237,520	1,417,220
8	Okanagan	309,415	581,410	4,230	.....	100,410	30,750	.....	279,590	139,840	137,380	1,273,610
9	Similkameen	67,708	139,310	.....	.....	94,870	13,510	2,770	90,740	13,440	.....	354,640
10	Nicola	394,991	514,150	560	.....	12,410	2,420	1,120	298,860	28,540	.....	858,060
11	Bonaparte	351,370	617,400	.....	.....	20,590	60	.....	71,030	12,380	.....	721,460
12	Lower North Thompson River	122,988	475,220	30,710	8,170	136,140	26,160	3,260	52,090	10,830	.....	742,580
13	Upper North Thompson River	116,529	175,420	513,140	90,530	431,710	21,960	42,480	.....	1,410	.....	1,276,650
14	Clearwater River	4,390	10,200	3,040	.....	8,730	2,180	.....	.....	5,250	.....	29,400
15	Quesnel-Horsefly	51,883	384,130	124,210	95,430	210,690	57,150	.....	.....	41,550	.....	913,160
16	Fraser River East	152,024	230,150	.....	.....	.....	.....	.....	.....	8,400	.....	238,550
17	Chilcotin River North*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Chilcotin River South*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Dean-Homathko Headwaters*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Bridge River-Lytton	40,900	156,950	9,390	.....	3,070	400	.....	42,450	.....	.....	212,260
	Totals	2,314,839	4,784,560	2,310,870	701,710	1,986,250	275,000	261,320	952,420	317,180	388,100	11,977,410
		.....	40.0%	19.3%	5.9%	16.6%	2.3%	2.2%	7.9%	2.6%	3.2%	100.0%
	Vacant Crown land	1,589,441	3,384,830	1,013,770	279,780	1,127,890	184,210	133,120	555,690	280,300	270,210	7,229,800
	Timber licences and berths	280,776	650,690	1,004,710	372,830	712,150	83,330	112,690	53,000	8,740	31,390	3,029,530
	Crown grants	444,622	749,040	292,390	49,100	146,210	7,460	15,510	343,730	28,140	86,500	1,718,080

* Not accessible.

Abbreviations—F=Douglas fir. C=Red cedar. H=Western hemlock. S=Engelmann spruce. B=Silver fir (balsam).
Pw=White pine. Py=Yellow pine. Pl=Lodgepole pine. L=Western larch (tamarack).

PROVINCIAL FOREST INVENTORY—*Continued.*

Total Merchantable Timber in Kamloops Forest District.

No. on Map.	Drainage-basin.	Merchantable Acreage.	Thousand Board-feet, B.C. Log Scale.									Total.
			F.	C.	H.	S.	B.	Pw.	Py.	Pl.	L.	
1	Revelstoke-Golden	189,215	199,150	427,680	174,460	504,560	90,620	51,730	.....	37,760	400	1,486,360
2	Big Bend, Columbia River	351,380	215,220	1,419,390	451,010	1,065,570	334,830	63,480	.....	.....	.....	3,549,500
3	Canoe River	80,680	191,340	153,950	29,290	207,180	75,580	3,200	.....	14,600	.....	675,140
4	Adams-Seymour Rivers	238,885	231,870	624,800	476,070	751,200	294,540	83,300	.....	870	.....	2,462,650
5	Shuswap Lake	238,500	376,390	367,830	252,590	323,640	201,340	62,510	23,110	3,530	21,010	1,631,950
6	South Thompson River	182,542	403,400	5,400	.....	220,250	29,280	.....	66,910	5,900	.....	731,140
7	Shuswap River	257,880	570,450	321,190	220,920	329,730	280,360	129,780	27,860	31,110	247,090	2,158,490
8	Okanagan	467,446	688,300	4,870	.....	205,340	79,190	.....	287,670	366,380	175,060	1,806,810
9	Similkameen	186,231	296,490	.....	200	221,160	59,430	3,290	174,270	63,430	.....	818,270
10	Nicola	614,193	768,580	560	.....	58,720	4,440	2,860	322,540	93,970	.....	1,251,670
11	Bonaparte	525,669	789,670	.....	.....	144,620	22,270	.....	97,210	141,690	.....	1,195,460
12	Lower North Thompson River	451,355	836,750	147,790	42,160	1,634,850	405,550	12,300	57,620	270,730	.....	3,407,750
13	Upper North Thompson River	202,513	189,780	554,610	98,940	625,160	125,530	46,380	.....	1,410	.....	1,641,810
14	Clearwater River	175,105	140,050	268,140	128,180	355,250	155,950	.....	.....	15,750	.....	1,063,320
15	Quesnel-Horsefly	535,836	1,721,010	1,069,050	754,870	2,141,940	794,490	.....	.....	312,340	.....	6,793,700
16	Fraser River East	161,364	231,770	.....	.....	.....	.....	.....	.....	8,400	.....	240,170
17	Chilcotin River North	138,488	166,440	.....	.....	120	.....	.....	.....	103,050	.....	269,610
18	Chilcotin River South	155,940	242,280	.....	.....	990	480	.....	1,600	25,530	.....	270,880
19	Dean-Homathko Headwaters	20,461	53,830	8,660	2,800	40,730	21,960	.....	.....	15,840	.....	143,820
20	Bridge River-Lytton	53,080	176,900	9,390	.....	20,850	11,970	370	50,530	2,990	.....	273,000
	Totals	5,226,763	8,489,670	5,383,310	2,631,490	8,851,860	2,987,810	459,200	1,109,320	1,515,280	443,560	31,871,500
		.....	26.6%	16.9%	8.3%	27.8%	9.4%	1.4%	3.5%	4.7%	1.4%	100.0%
	Vacant Crown land	4,277,834	6,713,000	3,486,960	1,826,280	7,522,560	2,727,840	279,530	694,210	1,448,300	324,900	25,023,580
	Timber licences and berths	470,956	959,780	1,598,930	751,480	1,178,390	251,370	163,540	54,470	33,760	32,160	5,023,880
	Crown grants	477,973	816,890	297,420	53,730	150,910	8,600	16,130	360,640	33,220	86,500	1,824,040

Abbreviations—F=Douglas fir. C=Red cedar. H=Western hemlock. S=Engelmann spruce. B=Silver fir (balsam).
Pw=White pine. Py=Yellow pine. Pl=Lodgepole pine. L=Western larch (tamarack).

LAND CLASSIFICATION.

In addition to examining and reporting on some 9,875 acres adjoining the boundaries of the proposed Seechelt Forest, the Forest Service reported upon 605 applications, covering 88,100 acres, for alienation under the provisions of the "Land Act," the general conditions of which are shown in the tables herewith.

AREAS EXAMINED FOR MISCELLANEOUS PURPOSES OF THE "LAND ACT," 1933.

Forest District.	Applications for Crown Grants.		Applications for Grazing and Hay Leases.		Applications for Pre-emption Records.		Applications to Purchase.		Miscellaneous.	
	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.
Fort George	..	.....	11	1,768	40	5,847	23	3,334	16	1,589
Kamloops	..	.....	72	18,313	91	11,136	42	4,532	69	6,254
Prince Rupert	..	.....	..	.....	8	1,080	19	2,622	5	600
Nelson	..	.....	.	.....	8	754	40	3,962	3	195
Vancouver	2	311	4	969	40	2,812	70	8,628	35	3,394
Totals	2	311	94	21,050	187	21,629	194	23,078	128	12,032

CLASSIFICATION OF AREAS EXAMINED IN 1933.

Forest District.	Total Area.	Agricultural Land.	Non-agricultural Land.	Merchantable Timber Land.	Estimate of Timber on Merchantable Timber Land.
	Acres.	Acres.	Acres.	Acres.	M.B.M.
Fort George	12,538	6,461	6,077	118	869
Kamloops	40,235	4,284	35,951	143	875
Prince Rupert	4,302	1,254	3,048	.....	.....
Nelson	4,911	1,207	3,704	220	4,648
Vancouver	16,114	2,933	13,181	665	7,666
Totals	88,100	16,139	61,961	1,146	14,058

FOREST RESEARCH.

Research-work during 1933 was again confined to the field and office work essential to maintain records on studies previously instituted. Most of these studies are carried out under natural forest conditions on sample plot areas, varying in size from $\frac{1}{100}$ acre to many acres, which are reserved for the purpose. There are in all 256 of these plots established on which records are maintained, either annually, or periodically at intervals of three to five years. They may be roughly grouped as follows:—

	Plots.
Growth and yield	105
Experimental plantations	60
Varied silvicultural	82
Regeneration history studies (involving 2,896 temporary plots)	9
Total	256

Necessary periodic examinations were completed on 139 of these during the summer.

Work at the Cowichan Lake and Aleza Lake Experiment Stations was confined to these current examinations of established plots. In Forest Mensuration current examinations of growth and yield plots were all completed.

REFORESTATION.

Forest Nurseries.—The last stock from the Shelbourne Street Nursery at Victoria, about 142,000 seedlings, was lifted in early spring and shipped to the Green Timbers Nursery, and the Shelbourne Street development was abandoned. This area was secured on lease from the Municipality of Saanich in 1927 for temporary nursery purposes pending developments at the permanent Green Timbers Nursery. During the five and a half years of occupancy some 987,000 seedlings were produced.

At the Green Timbers Nursery stock from Shelbourne Street was received and transplanted, and about 100,000 seedlings shipped out for planting purposes. Of these, about:—

23,000 went to the Elk River Timber Company for an experimental plantation on their cut-over land.

27,000 to the Campbell River Experimental Forest.

1,500 to Green Timbers plantations.

48,500 in forty-four shipments to universities, various public institutions and projects, and to various individuals for a variety of purposes. A notable recent development is a growing interest in Christmas-tree plantations. A few lots of stock have been provided for this purpose. The plantations are subject to examination by Forest Branch officers, and may point the way to the development of a profitable use for farm lands too poor to produce the usual crops.

Since the inception of the nursery work in the fall of 1927 a little more than 1,000,000 seedlings have been produced, and there are now in stock at the Green Timbers Nursery about 165,000 seedlings available for planting in the spring of 1934.

Plantations.—An experimental plantation of about 40 acres was put in on the logged-off lands of the Elk River Timber Company in co-operation with the company, and about 25 acres were planted on the Campbell River Experimental Forest.

Plantations at Green Timbers Nursery and the Campbell River Forest were examined in detail for survival and detailed records started in order that the history of these may be followed with a view to improving methods and eliminating losses. Survival of planted stock proved good, except on certain plantations at Green Timbers, where rabbits have proved destructive.

Experimental plantations to date are summarized in the following table:—

Location of Planting.	Previously Reported.		1933.		Total to Date.	
	Acres.	Seedlings.	Acres.	Seedlings.	Acres.	Seedlings.
Green Timbers	343	296,000	.....	.....	343	296,000
West Thurlow Island	545	237,300	.....	.....	545	237,300
Campbell River Forest	77	110,400	25	27,050	102	137,450
Miscellaneous	12	12,000	40	22,875	52	34,875
Totals	977	655,700	65	49,925	1,042	705,625

LUMBER TRADE EXTENSION.

In co-operation with the British Columbia Lumber and Shingle Manufacturers, Limited, the trade-extension campaign was continued, chiefly in the United Kingdom markets, and much useful work was accomplished in removing the difficulties and smoothing the way for British Columbia timber in that market. Special attention might be drawn to the work done on paving-blocks, where it is expected to sell 30,000 to 40,000 M.B.M., and on the introduction of cedar. As a result of the above work a steady growth in the exports to the United Kingdom is noted. Figures show:—

1931 ..... 98,038 M.B.M.
1932 ..... 108,315 ,,
1933 ..... 271,073 ,,

The Commissioner paid a second visit to China early in 1933, following up the work begun in 1932, and here again the visit was followed by substantial increases in shipments.

1931	53,854	M.B.M.
1932	53,341	„
1933	130,596	„

Late in December the same officer was sent to Australia, where no work had been done for the past two years. The results accomplished leave no room for doubt that active marketing by means of special lumber representatives does bring results far beyond the expenses incurred, and that in any market absorbing 100,000 M.B.M. feet per year a permanent Commissioner should be maintained, with advantage both to the industry and to the Province.

TIMBER INDUSTRIES.

The statistical tables presented herewith show the conditions in the industry. In considering them, it must be borne in mind that the downward trend continued until about June, and therefore recovery represents only six months of the year. For that period it is more marked than is indicated by the average figures for the year.

Water-borne Lumber Trade (in F.B.M.).

Destination.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Australia	53,502,046	29,843,132	41,493,476	33,076,587	50,803,023	125,551,388	123,732,822
New Zealand	10,847,545	8,531,322	8,559,208	6,416,105	2,578,740	979,148	1,300,332
South America	2,168,973	10,304,032	2,449,494	1,774,697	1,354,028	140,945	3,641,569
China	9,178,973	16,902,137	43,323,398	55,224,104	53,854,005	53,341,172	130,596,268
Japan	191,597,552	219,361,557	192,411,505	150,869,880	138,851,607	60,031,785	60,657,328
United Kingdom and Continent	36,427,449	67,075,872	69,903,655	98,037,621	81,356,058	108,214,682	271,073,393
South Africa	18,562,680	13,625,781	15,889,002	17,685,896	13,120,035	5,664,646	18,213,254
India and Straits Settlements	3,566,713	411,577	243,807	241,129	369,689	544,271	916,536
United States and Atlantic Coast	392,074,528	384,107,908	351,526,590	259,093,570	207,586,216	79,682,896	29,528,026
Philippine and Hawaiian Islands	1,734,314	56,681	.....	122,744	.....	.....	.....
West Indies and Cuba	16,023,319	8,356,571	14,347,317	12,781,209	7,520,512	8,239,598	11,830,457
South Sea Islands	1,884,632	5,496,319	5,508,978	3,230,759	2,527,526	2,009,102	2,476,670
Mexico and Central America	.....	333,660	623,766	550,018	478,794	1,746,278	1,669,075
Egypt	2,649,559	1,149,573	4,744,180	.....	4,195,326	.....	.....
*Belgium	.....	.....	.....	.....	336,428	79,474	6,140,501
*Denmark	.....	.....	.....	.....	62,129	.....	.....
*France	.....	.....	.....	.....	241,865	148,901	10,066
*Germany	.....	.....	.....	.....	154,135	120,519	126,846
*Holland	.....	.....	.....	.....	419,373	144,018	301,818
*Italy	.....	.....	.....	.....	301,561	128,678	350,966
*Norway and Sweden	.....	.....	.....	.....	18,200	.....	.....
Spain	.....	.....	.....	.....	.....	15,955	.....
Foreign, unclassified	12,047	.....	50,494,046	73,195,238	.....	6,087	33,993
Totals	740,230,330	765,556,122	801,518,422	712,299,557	566,129,250	446,889,543	662,599,920

*Previously included with United Kingdom.

Estimated Value of Production, including Loading and Freight within the Province.

Product.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Lumber	$40,487,000	$48,346,000	$50,140,000	$32,773,000	$16,738,000	$13,349,000	$15,457,000
Pulp and paper	18,505,000	16,755,000	14,400,000	16,520,000	13,508,000	11,156,000	10,852,000
Shingles	6,800,000	10,000,000	8,300,000	4,161,000	2,721,000	2,805,000	4,500,000
Boxes	1,707,000	2,501,000	2,437,000	2,287,000	1,315,000	1,100,000	1,313,000
Piles, poles, and mine-props	4,030,000	4,684,000	5,500,000	4,726,000	2,453,000	772,000	450,000
Cordwood, fence-posts, and mine-ties	1,405,000	1,633,000	1,734,000	1,596,000	1,405,000	1,576,000	1,850,000
Ties, railway	1,440,000	1,873,000	2,116,000	1,253,000	1,044,000	502,000	250,000
Additional value contributed by the wood-using industry	2,100,000	2,200,000	2,100,000	2,387,000	1,350,000	1,014,000	1,200,000
Laths and other miscellaneous products	2,000,000	2,100,000	2,400,000	1,500,000	1,500,000	1,125,000	1,000,000
Logs exported	4,561,000	3,580,000	4,124,000	2,492,000	2,370,000	1,730,000	2,228,000
Pulp-wood exported	52,000	115,000	50,000	42,000	43,000	28,000	55,000
Totals	$83,087,000	$93,787,000	$93,301,000	$69,737,000	$44,447,000	$35,157,000	$39,155,000

Pulp (in Tons).

Pulp.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Sulphite	119,005	120,413	112,925	130,462	124,521	85,419	122,265
Sulphate	13,700	15,050	15,647	13,055	11,744	10,889	15,715
Ground wood	163,548	170,005	151,066	172,539	170,432	161,502	185,451

Paper (in Tons).

Product.	1927.	1928.	1929.	1930.	1931.	1932.	1933.
Newsprint	214,010	225,477	201,009	224,928	217,562	205,050	237,107
Other papers	13,745	15,960	19,492	20,446	17,709	24,051	23,492

Total Amount of Timber scaled in British Columbia during Years 1932–33. (F.B.M.)

Forest District.	1932.	1933.	Gain.	Loss.	Net Gain.	Net Loss.
Fort George	20,563,841	24,066,756	3,502,915	.....	.....	.....
Kamloops	64,752,039	66,038,963	1,286,924	.....	.....	.....
Nelson	84,294,505	97,361,716	13 067,211	.....	.....	.....
Totals, Interior	169,610,385	187,467,435	17,857,050	.....	17,857,050	.....
Prince Rupert	93,868,874	66,460,668	.....	27,408,206	.....	.....
Vancouver	1,347,979,202	1,644,652,961	296,673,759	.....	.....	.....
Totals, Coast	1,441,848,076	1,711,113,629	296,673,759	27,408,206	269,265,553	.....
Totals for Province	1,611,458,461	1,898,581,064	314,530,809	27,408,206	287,122,603	.....

Timber scaled in British Columbia in 1933. (By Months and Districts.)

Month.		Kamloops.	Fort George.	Nelson.	Prince Rupert.	Vancouver.	Total, F.B.M.	Total Lineal Feet.	Total Cords.	Total Hewn Ties.
January	F.B.M.	862,679	138,963	3,620,206	90,288	49,125,057	53,837,193			
"	lineal ft.	5,095		43,403	3,600	54,716		106,814		
"	cords	2,580	655	3,101	159	66,096			72,591	
"	hewn ties	2,645	4,945	1,799						9,389
February	F.B.M.	4,354,263	35,296	3,702,334	349,351	28,966,649	37,407,893			
"	lineal ft.	255,727	2,800	65,885	13,260	221,837		559,509		
"	cords	1,653	272	2,774	54	9,740			14,493	
"	hewn ties	2,450	1,522	390		491				4,853
March	F.B.M.	2,510,400		5,349,262	124,324	59,794,692	67,778,678			
"	lineal ft.	21,115		91,505	30,825	68,183		211,628		
"	cords	1,622	251	2,695	325	6,831			11,724	
"	hewn ties	7,651	3,393	600	74	1,015				12,733
April	F.B.M.	2,342,955	196,201	6,240,621	223,682	89,520,202	98,523,661			
"	lineal ft.	23,225	7,800	17,994	28,320	88,020		165,359		
"	cords	1,090	261	2,584	212	7,827			11,974	
"	hewn ties	10,796		4,450	2,150	7,560				24,956
May	F.B.M.	3,551,469	183,273	3,492,458	217,997	159,337,190	166,782,387			
"	lineal ft.	30,935		107,336	38,708	126,708		303,687		
"	cords	3,496	81	2,228	285	12,925			19,015	
"	hewn ties	13'633	14,228	5,420	15,078	364				48,723
June	F.B.M.	4,521,098	1,456,967	4,775,967	1,987,056	170,390,073	183,131,161			
"	lineal ft.	30,311	2,790	126,343	55,348	282,246		497,038		
"	cords	1,889	192	2,789	551	10,631			16,052	
"	hewn ties	11,583	17,844	38,810	33,757	600				102,594
July	F.B.M.	5,597,519	3,268,180	6,856,549	10,590,238	154,398,026	180,710,512			
"	lineal ft.	67,480	25,335	79,381	53,460	98,810		324,466		
"	cords	1,732	2,149	1,981	335	100,327			106,524	
"	hewn ties	9,678	7,278	56,741	12,121	495				86,313
August	F.B.M.	6,167,487	6,569,445	8,797,490	10,735,722	136,462,477	168,732,621			
"	lineal ft.	86,461	24,305	132,235	75,662	148,200		466,863		
"	cords	1,292	271	1,500	564	13,073			16,700	
"	hewn ties	13,104	14,098	44,869	22,679					94,750
September	F.B.M.	1,968,065	4,356,428	8,319,991	10,876,368	171,422,001	196,942,853			
"	lineal ft.	115,679	32,308	18,789	53,834	150,652		371,262		
"	cords	861	27	1,857	151	12,714			15,610	
"	hewn ties	6,343	6,756	7,857	31,554					52,510
October	F.B.M.	4,365,745	293,425	3,406,987	15,709,636	147,129,119	170,904,912			
"	lineal ft.	31,086	37,705	78,351	162,914	238,430		548,986		
"	cords	2,479	78	2,116	152	10,150			14,975	
"	hewn ties	15,988	2,967	5,065	11,049					35,069
November	F.B.M.	2,700,156	253,999	7,711,199	4,823,418	168,082,733	183,571,505			
"	lineal ft.	93,054	28,550	129,364	165,545	217,135		633,648		
"	cords	5,893	508	2,931	41	7,652			17,025	
"	hewn ties	10,355		8,868						19,223
December	F.B.M.	1,014,637	483,014	5,228,872	328,158	115,979,757	123,034,438			
"	lineal ft.	18,510	36,520	67,710	148,190	67,820		338,750		
"	cords	3,094	374	3,065	365	7,576			14,474	
"	hewn ties	2,583		2,142	190					4,915
Totals for year	F.B.M.	39,956,473	17,235,191	67,501,936	56,056,238	1,450,607,976	1,631,357,814			
"	lineal ft.	778,678	198,113	958,796	829,666	1,762,757		4,528,010		
"	cords	27,681	5,119	29,621	3,194	265,542			331,157	
"	hewn ties	106,809	73,031	177,011	128,652	10,525				496,028

Total scaled in F.B.M. = 1,898,581.064.

Total Scale segregated, showing Land Status. (In F.B.M.)

Forest District.	Timber Licences	Timber Leases.	Hand-loggers' Licences.	Timber-sales.	Pre-emptions S.R., and Miscellaneous.	Crown Grants.				Dominion Lands.	Totals.
						To 1887.	1887–1906.	1906–1914.	1914 to Date.		
Fort George	9,141,886	.....	.....	10,317,072	2,844,133	.....	196,620	557,486	1,009,559	.....	24,066,756
Kamloops	11,444,931	.....	.....	17,281,679	10,624,069	8,865,884	2,909,206	7,074,777	6,568,394	1,270,023	66,038,963
Nelson	11,586,361	.....	.....	12,979,046	6,613,252	951,274	54,601,072	7,139,928	3,479,583	11,200	97,361,716
Prince Rupert	19,732,005	1,622,109	8,288,576	30,626,983	1,280,764	.....	341,609	2,482,531	1,498,310	587,781	66,460,668
Vancouver	454,166,330	328,026,798	77,458	89,353,494	3,965,092	682,366,021	58,318,629	8,042,560	15,367,422	4,969,157	1,644,652,961
Totals, 1933	560,071,513	329,648,907	8,366,034	160,558,274	25,327,310	692,183,179	116,367,136	25,297,282	27,923,268	6,838,161	1,898,581,064
Totals, 1932	399,082,165	390,494,128	5,303,122	198,277,128	24,259,207	440,264,407	70,534,985	28,558,367	37,982,900	16,702,052	1,611,458,461
Totals, 1931	283,982,547	386,584,819	4,938,797	238,645,632	35,381,654	647,262,567	165,875,691	41,867,865	31,120,290	112,744,411	1,948,404,273
Totals, 1930	444,717,322	420,727,159	5,413,150	321,230,000	25,830,560	888,519,895	226,834,133	69,744,896	44,489,545	186,245,678	2,663,752,338
Totals, 1929	575,187,328	374,329,611	5,912,880	383,375,816	25,117,698	1,223,710,572	287,184,092	99,437,752	59,209,983	312,678,055	3,346,144,287
Totals, 1928	601,586,290	410,384,094	5,249,856	324,618,812	40,523,494	1,103,204,936	264,833,742	89,743,869	63,531,354	303,229,019	3,206,905,466
Totals, 1927	575,430,088	383,905,689	5,195,168	291,505,941	28,844,603	905,838,664	249,714,968	74,197,517	52,915,769	286,154,055	2,853,702,462

Timber from lands in the former Dominion Government Railway Belt which has passed over to the jurisdiction of this Province is included under the various land status headings shown above.

Only timber from Indian Reserves and other lands still under the jurisdiction of the Dominion Government is shown under the heading "Dominion Lands."

Species cut (in F.B.M.).

Forest District.	Fir.	Cedar.	Spruce.	Hemlock.	Balsam.	Yellow Pine.	White Pine.	Lodgepole Pine.	Larch.	Cottonwood.	Miscel.	Totals.
Fort George	2,631,525	905,550	14,846,887	.....	115,476	.....	.....	1,927,674	.....	6,409	3,633,235	24,066,756
Kamloops	15,599,890	10,963,776	2,656,992	93,471	20,846	19,018,351	1,730,723	222,934	486,110	161,433	15,084,437	66,038,963
Nelson	17,474,796	9,792,536	7,114,186	1,181,464	422,575	2,954,563	10,262,980	902,431	30,608,509	640,256	16,907,420	97,361,716
Totals, Interior	35,706,211	21,661,862	24,618,065	1,274,935	558,897	21,972,914	11,993,703	3,053,039	31,094,619	808,098	34,725,092	187,467,435
Prince Rupert	2,044,794	8,172,612	26,129,417	16,097,072	7,783,278	.....	.....	4,104,270	.....	3,675	2,125,550	66,460,668
Vancouver	835,436,183	344,413,460	35,968,394	221,100,886	59,861,088	32,942	10,193,065	.....	.....	3,656,358	133,990,585	1,644,652,961
Totals, Coast	837,480,977	352,586,072	62,097,811	237,197,958	67,644,366	32,942	10,193,065	4,104,270	.....	3,660,033	136,116,135	1,711,113,629
Grand totals, 1933	873,187,188	374,247,934	86,715,876	238,472,893	68,203,263	22,005,856	22,186,768	7,157,309	31,094,619	4,468,131	170,841,227	1,898,581,064
Grand totals, 1932	752,558,169	319,086,978	106,361,793	245,169,186	54,282,274	13,367,227	17,992,369	7,471,122	21,470,125	2,941,992	70,757,226	1,611,458,461
Grand totals, 1931	997,513,398	356,478,825	123,056,421	267,283,560	45,153,077	26,109,228	27,006,894	38,555,460	17,700,108	4,029,782	45,517,520	1,948,404,273
Grand totals, 1930	1,319,093,565	570,071,915	185,696,765	329,447,130	65,513,782	30,463,015	28,029,526	55,368,482	20,585,633	2,912,598	56,569,927	2,663,752,338
Grand totals, 1929	1,660,527,087	746,556,671	220,827,354	394,748,152	71,980,723	32,917,115	21,740,327	77,033,230	39,082,808	4,714,361	76,016,459	3,346,144,287
Grand totals, 1928	1,604,941,926	738,626,482	204,110,500	353,268,734	68,264,722	31,919,089	23,073,267	75,567,367	24,386,323	5,234,832	77,512,224	3,206,905,466
Grand totals, 1927	1,411,296,248	656,030,374	188,234,622	306,859,508	70,013,721	34,165,320	35,157,414	63,578,562	27,607,809	1,927,889	58,830,995	2,853,702,462

Logging Inspection.

Forest District.	Operations.				No. of Inspections.
	Timber-sales.	Hand-loggers' Licences.	Leases, Licences, Crown Grants, and Pre-e aptions.	Totals.	
Fort George	105	...	109	214	466
Kamloops	296	...	415	711	1,555
Nelson	166	...	131	297	1,803
Prince Rupert	374	66	205	645	1,768
Vancouver	296	1	565	862	2,529
Totals, 1933	1,237	67	1,425	2,729	8,121
Totals, 1932	1,124	37	1,316	2,477	7,273
Totals, 1931	1,562	92	1,675	3,329	8,969
Totals, 1930	1,932	100	1,862	3,894	8,859
Totals, 1929	1,907	99	2,002	4,008	9,512
Totals, 1928	1,623	50	2,023	3,696	9,596
Totals, 1927	1,584	133	1,873	3,590	8,661

Trespasses.

Forest District.	No. of Cases.	Areas cut over (Acres).	Quantity cut.				No. of Resulting Seizures.	Amount.
			Feet B.M.	Lineal Feet.	Cords.	Ties.		
Fort George	13	42	174,349	13,463	709	1,838	..	$380 76
Kamloops	19	38	154,466	22,167	31	1,125	1	398 90
Nelson	18	43	919,438	3,000	219	790	1	1,019 82
Prince Rupert	8	7	83,502	3,059	250	54	..	391 58
Vancouver	12	25	246,353	.....	204	.....	..	536 75
Totals, 1933	70	155	1,578,108	41,689	1,413	3,807	2	$2,727 81
Totals, 1932	95	368	767,896	35,484	2,140	9,265	14	$3,490 84
Totals, 1931	84	397	1,579,465	118,704	1,048	12,425	2	$5,633 68
Totals, 1930	96	1,000	969,351	165,729	1,457	9,612	4	$7,534 01
Totals, 1929	99	370	984,309	88,997	569	5,906	9	$5,431 07
Totals, 1928	105	878	5,867,052	98,279	4,713	16,599	12	$17,787 10
Totals, 1927	83	399	2,290,926	47,871	2,862	9,660	9	$9,097 53

Pre-emption Inspections, 1933.

Pre-emption records examined by districts are:—

Fort George	720
Kamloops	1,103
Prince Rupert	280
Vancouver	463
Nelson	145
Total	2,711

Areas cruised for Timber-sales.

Forest District.	Number cruised.	Acreage.	Saw-timber (M.B.M.).	Poles and Piles (Lineal Feet).	Shingle-bolts and Cordwood (Cords).	Railway-ties (No.).	Car Stakes & Posts (No.).
Fort George	127	22,282	2,861	382,010	10,759	136,461	3,200
Kamloops	234	37,793	42,001	102,475	25,134	109,300	.....
Nelson	148	39,064	20,569	409,945	13,848	51,493	170,205
Prince Rupert	210	36,087	35,208	476,600	3,001	251,322	1,456
Vancouver	223	34,605	85,779	249,082	42,491	1,400	.....
Totals, 1933	942	169,831	186,418	1,620,112	95,233	549,976	174,861
Totals, 1932	875	144,769	202,421	1,759,905	68,414	488,655	69,900
Totals, 1931	818	145,214	297,825	2,629,054	62,680	664,413	142,400
Totals, 1930	943	197,065	526,261	10,345,822	26,431	731,640	620,100
Totals, 1929	1,061	214,874	500,420	13,043,603	17,629	1,305,110	185,746
Totals, 1928	1,111	233,889	754,095	9,623,599	43,266	2,056,604	447,630
Totals, 1927	844	225,191	974,626	7,092,844	21,027	1,747,441	35,600

Timber Sales awarded by Districts, 1933.

Forest District.	No. of Sales.	Acreage.	Saw-timber (Ft. B.M.).	Poles and Piles (Lineal Feet).	No. of Posts.	No. of Cords.	No. of Ties.	Estimated Revenue.
Kamloops	294	29,137	21,687,000	304,619	117,000	16,285	74,448	$65,229 55
Fort George	114	21,284	7,816,000	392,095	3,200	10,384	162,823	37,044 72
Nelson	169	72,400	12,549,000	401,425	175,705	11,865	39,255	42,735 73
Prince Rupert	158	28,029	25,864,000	1,222,920	.....	2,369	153,037	85,304 85
Vancouver	213	39,944	77,780,000	169,185	.....	35,874	2,950	220,244 31
Totals, 1933	948	190,794	145,696,000	2,490,244	295,905	76,777	432,513	$450,559 16
Totals, 1932	836	134,868	181,470,000	1,746,616	161,600	54,154	423,676	$450,528 10
Totals, 1931	842	148,523	217,474,000	2,272,082	173,300	41,032	606,160	$624,596 27
Totals, 1930	866	162,043	199,485,000	9,963,164	398,150	19,997	494,202	$689,481 29
Totals, 1929	974	216,222.28	691,973,000	9,356,837	374,065	23,197	1,505,951	$1,908,100 70
Totals, 1928	1,033	194,929.37	525,250,760	6,537,002	880,000	48,728	1,996,457	$1,344,273 93
Totals, 1927	821	258,097.26	1,611,612,079	7,332,939	736,100	22,057	1,380,553	$2,666,678 32

Average Sale Price by Species.

Saw-timber.	Figures for 1933.		Figures for 1932.		Figures for 1931.		Figures for 1930.	
	Board-feet.	Price per M.	Board-feet.	Price per M.	Board-feet.	Price Per M.	Board-feet.	Price Per M.
Douglas fir	51,374,000	$1 16	44,105,000	$1 19	48,265,000	$1 39	55,490,000	$1 52
Cedar	20,361,000	1 17	28,217,000	1 15	17,509,000	1 50	21,558,000	1 46
Spruce	20,747,000	1 15	31,151,000	1 63	63,409,000	1 24	35,082,000	1 48
Hemlock	22,695,000	73	41,552,000	76	41,083,000	84	37,972,000	91
Balsam	7,742,000	73	12,498,000	77	16,038,000	89	17,973,000	89
White pine	4,816,000	1 94	2,565,000	1 43	4,006,000	1 78	4,709,000	2 39
Western soft pine	11,450,000	1 19	9,807,000	1 25	11,457,000	1 47	7,132,000	1 74
Tamarack ("Larch")	2,127,000	68	2,081,000	84	5,538,000	1 68	5,501,000	1 05
Other species	4,384,000	69	9,494,000	94	7,839,000	1 00	5,075,000	68
Totals	145,696,000	$1 08	181,470,000	$1 12	215,144,000	$1 22	190,492,000	$1 32

Note.—2,330,000 board-feet pulp saw-timber not included in 1931 totals.
8,993,000 board-feet pulp saw-timber not included in 1930 totals.

Timber cut from Timber-sales during 1933.

Forest District.	Feet B.M.	Lineal Feet.	Cords.	Ties.	Posts.
Kamloops	12,247,518	218,945	5,389.09	48,046	45,485
Fort George	5,603,581	136,835	2,364.91	34,528	9,150
Nelson	6,370,311	239,160	4,644.36	35,258	106,901
Prince Rupert	24,306,681	609,357	1,088.63	91,638	3,050
Vancouver	73,747,821	133,200	22,353.63	3,354	.....
Totals, 1933	122,275,912	1,337,497	35,840.62	212,824	164,586
Totals, 1932	165,666,929	1,583,955	30,646.62	258,284	79,885
Totals, 1931	177,172,765	5,697,152	15,499.20	662,120	255,545
Totals, 1930	227,019,617	11,960,055	17,176.17	1,341,426	388,749
Totals, 1929	266,016,942	7,966,223	24,663.46	1,554,870	332,038
Totals, 1928	203,208,331	7,672,294	24,389.35	1,714,709	376,253
Totals, 1927	214,209,921	6,368,269	27,508.54	1,359,902	86,109

Saw and Shingle Mills of the Province.

Forest District.	Operating.				Shut Down.			
	Sawmills.		Shingle-mills.		Sawmills.		Shingle-mills.	
	No.	Estimated Daily Capacity, M.B.M.	No.	Estimated Daily Capacity, Shingles, M.	No.	Estimated Daily Capacity, M.B.M.	No.	Estimated Daily Capacity, Shingles, M.
Fort George	23	368	..	....	17	303	..	....
Kamloops	83	1,155	3	100	35	189	1	10
Nelson	49	1,000	5	150	12	529	3	200
Prince Rupert	20	407	2	9	27	687	2	12
Vancouver	120	5,785	68	7,066	43	1,924	16	1,430
Totals, 1933	295	8,715	78	7,325	134	3,632	22	1,652
Totals, 1932	293	7,641	45	6,813	139	4,621	13	1,470
Totals, 1931	334	10,167	46	7,470	158	4,109	19	1,871
Totals, 1930	301	11,020	43	7,164	141	3,204	17	1,695
Totals, 1929	354	11,896	53	7,881	95	2,200	15	1,726
Totals, 1928	314	11,919	56	8,280	120	2,459	15	2,710
Totals, 1927	375	12,176	65	12,042	110	2,549	22	2,740

Export of Logs. (In F.B.M.)

Species.	Grade No. 1.	Grade No. 2.	Grade No. 3.	Ungraded.	Totals.
Fir	5,021,922	95,607,045	35,467,603	.....	136,096,570
Cedar	11,903,167	22,396,432	20,646,837	.....	54,946,436
Spruce	16,118	320,573	294,730	.....	631,421
Hemlock	.....	.....	.....	8,555,732	8,555,732
Balsam	.....	.....	.....	1,286,898	1,286,898
Yellow pine	.....	.....	.....	35,451	35,451
White pine	.....	.....	.....	3,631,364	3,631,364
Cottonwood	.....	765,523	2,805,924	.....	3,571,447
Miscellaneous	.....	.....	.....	185,515	185,515
Totals, 1933	16,941,207	119,089,573	59,215,094	13,694,960	208,940,834
Totals, 1932	18,572,020	87,223,114	44,380,166	15,589,383	165,764,683
Totals, 1931	12,886,187	106,331,594	51,909,961	49,048,420	220,176,162
Totals, 1930	11,571,481	86,502,990	40,147,841	34,696,715	172,919,027
Totals, 1929	13,015,146	133,997,595	60,002,711	29,978,125	236,993,577
Totals, 1928	20,563,249	106,084,161	47,994,423	37,305,398	211,947,231
Totals, 1927	36,545,972	144,942,558	51,584,928	48,510,833	281,584,291

Shipments of Poles, Piling, Mine-props, Fence-posts, Railway-ties, etc.

Forest District.	Quantity exported.	Approximate Value, F.O.B.	Where marketed.		
			United States.	Canada.	Orient.
Fort George—					
Poles and piling.....lineal ft.	148,575	$11,886	70,270	78,305	.....
Mine-props.....cords	112	896	.....	112	.....
Fence-posts.....cords	67	402	.....	67	.....
Railway-ties.....No.	36,895	15,817	.....	36,895	.....
Kamloops—					
Poles and piling.....lineal ft.	370,930	44,511	333,515	37,415	.....
Mine-props.....cords	64	880	.....	64	.....
Fence-posts.....cords	489	4,156	.....	489	.....
Nelson—					
Poles and piling.....lineal ft.	1,464,169	145,676	1,210,370	253,799	.....
Mine-props.....cords	3,310	26,480	.....	3,310	.....
Fence-posts.....cords	3,979	31,832	639	3,340	.....
Railway-ties.....No.	165,213	82,606	4,828	160,385	.....
Prince Rupert—					
Poles and piling.....lineal ft.	1,193,225	95,458	1,064,375	128,850	.....
Fence-posts.....No.	4,950	495	.....	4,950	.....
Railway-ties.....No.	93,184	41,068	.....	93,184	.....
Vancouver—					
Poles and piling.....lineal ft.	1,676,239	134,100	1,252,001	.....	424,238
Cordwood.....cords	1,027	4,625	1,009	.....	18
Pulp-wood.....cords	12,335	55,505	12,335	.....	.....
Total value, 1933.....	.....	$696,393	.....	.....	.....
Total value, 1932.....	.....	$816,315	.....	.....	.....

TIMBER-MARKING.

Timber-marks issued for the Years 1931, 1932, and 1933.

	1931.	1932.	1933.
Old Grown grants	94	303	227
Crown grants, 1887–1906	40	66	92
Crown grants, 1906–1914	86	62	76
Section 53A, "Forest Act"	188	163	206
Stumpage reservations	72	40	55
Pre-emptions under sections 28 and 29, "Land Act"	10	18	9
Dominion lands	.....	1	1
Permit berths	38	7	2
Timber berths	21	26	15
Indian reserves	7	11	5
Timber-sales	842	836	946
Hand-loggers	6	14	26
Special marks	.....	.....	1
Rights-of-way	.....	.....	1
Pulp licences	4	2	4
Totals	1,408	1,549	1,666
Transfers and changes of marks	220	183	139

Hand-logger Licences.

Number issued	38	81	83

Draughting Office, Forest Branch.

Month.	Number of Tracings made.							Blue-prints from Reference Maps.
	Timber-sales.	Timber-marks.	Examination Sketches.	Hand-logger Licences.	Timber-berths.	Miscellaneous.	Totals.	
January	14	38	22	....	1	39	114	13
February	19	81	20	....	..	6	126	7
March	13	98	31	....	2	10	154	3
April	7	52	18	....	16	7	100	2
May	19	54	43	....	35	6	157	8
June	18	73	44	....	18	7	160	1
July	18	47	44	....	4	4	115	5
August	10	72	46	....	9	7	144	9
September	14	36	25	....	..	18	93	9
October	21	54	31	....	2	9	117	3
November	21	55	51	....	2	16	145	3
December	21	88	25	1	2	2	139	2
Totals	193	748	400	1	91	131	1,564	65

FOREST FINANCE.

Forest revenue showed a further decline during the year, but it must be remembered that about nine months of the year was that period at the very bottom of the depression, the lag between billing and collection of revenues being from sixty to ninety days, postponing the immediate effect on revenue. Moreover, the 25-per-cent. reduction in ground-rentals and the 15-per-cent. reduction in royalties, which were effective for the last nine months of the year, to a large extent counteracted improvement in conditions. A better comparison of present conditions is had by comparing revenues for the last quarter, which showed, in spite of the above-mentioned discounts: 1932, $429,653.02; and 1933, $433,404.18.

The greatest loss in revenue was in licence fees, which declined by $146,510, due to many licensees taking advantage of the moratorium. About 2,500 licences are now in arrears for one to three years. Royalties, except for the 15-per-cent. reduction, would have exceeded 1932.

Moneys appropriated for the administration of the Forest Branch were reduced from $506,349 to $383,689, representing 22.7 per cent. of revenue only, and from these funds it is necessary to pay for the cost of land examination, cruising, supervision of logging operations, lumber-trade extension, issuing of fire permits and supervision of fire-control, administration of grazing, and other activities.

The trust funds of the Branch show general improvement during the year.

The Scaling Fund deficit was reduced	$9,013.81
The Forest Protection Fund deficit was reduced	4,759.98
The Forest Reserve Account showed a credit balance at December 31st, 1933, of	49,905.32
Range Improvement Fund	9,450.75

The details of these finances are shown in the tables appended hereto.

FOREST REVENUE.

	12 Months to Dec. 31st, 1933.	12 Months to Dec. 31st, 1932.	12 Months to Dec. 31st, 1931.	12 Months to Dec. 31st, 1930.	12 Months to Dec. 31st, 1929.	12 Months to Dec. 31st, 1928.
Timber-licence rentals	$331,948 95	$478,458 93	$721,931 98	$854,560 87	$931,545 72	$1,015,705 19
Timber-licence transfer fees	480 00	930 00	1,330 00	2,180 00	1,775 00	4,285 00
Timber-licence penalty fees	16,004 43	11,687 62	20,632 72	27,861 53	23,245 73	33,035 56
Hand-loggers' licence fees	1,975 00	2,000 00	950 00	1,575 00	1,300 00	1,400 00
Timber-lease rentals	57,859 54	70,025 38	78,202 93	72,117 52	79,873 89	79,396 72
Timber-lease penalty fees	1,265 18	848 88	944 24	607 44	901 43	520 70
Timber-sale rentals	14,061 93	12,009 29	11,675 17	35,035 94	30,162 64	40,649 01
Timber-sale stumpage	244,225 17	279,034 76	454,391 36	518,309 48	634,048 95	551,102 88
Timber-sale cruising	3,650 69	3,359 20	5,722 83	7,565 12	12,844 92	10,943 97
Timber-sale advertising	561 25	569 30	771 55	1,256 69	1,951 28	1,646 65
Timber royalty and tax	963,511 71	1,046,070 65	1,218,363 02	1,456,330 42	1,688,803 67	1,774,417 41
Scaling fees (not Scaling Fund)	225 73	374 42	911 07	1,204 07	1,407 92	1,147 84
Scaling expenses (not Scaling Fund)	28 80	20 30	24 94	150 01	191 74	103 74
Trespass penalties	3,399 67	2,535 16	3,686 89	5,825 68	9,161 16	12,058 89
Scalers' examination fees	20 00	40 00	175 00	105 00	320 00	275 00
Exchange	350 47	305 02	171 23	591 70	1,711 29	271 09
Seizure expenses	1,299 13	1,057 39	1,367 72	1,406 64	3,152 88	589 71
General miscellaneous	3,051 42	4,265 74	4,495 07	4,137 56	2,754 36	4,444 25
Timber-berth rentals and bonus	30,281 53	33,601 49	33,295 42	.....	.....	.....
Interest on timber-berth rentals and bonus	576 41	597 54	688 97	.....	.....	.....
Transfer fees on rentals and bonus	28 37	270 00	63 84	.....	.....	.....
Royalty interest	49 90	489 34	1,136 04	.....	.....	.....
	$1,674,855 28	$1,948,550 41	$2,560,931 99	$2,990,820 67	$3,425,152 58	$3,531,993 61
Grazing fees and interest	11,759 13	13,409 37	15,411 46	12,251 88	10,918 49	12,541 98
Taxation, Crown-grant timber lands	320,150 96	368,699 00	397,523 73	422,274 04	375,923 32	388,860 46
Total revenue from forest sources	$2,006,765 37	$2,330,658 78	$2,973,867 18	$3,425,346 59	$3,811,994 39	$3,933,396 05

Revenue from Logging Operations, 1933.

(Amounts charged.)

Forest District.	Royalty and Tax.	Penalty.	Seizure Expenses.	Government Scale.		Scaling Fund.		Stumpage.	Total.
				Scaling Expenses.	Scaling Fees.	Scaling Expenses.	Scaling Fees.		
Vancouver	$766,738 83	$752 32	$52 87	$53 29	$168 27	$13,463 54	$79,011 28	$103,353 97	$963,594 37
Prince Rupert.	42,976 55	237 31	21 91	5 65	14 39	106 80	3,201 64	46,129 77	92,694 02
Nelson	60,302 16	870 88	36 45	48 00	5 00	.....	.....	17,762 40	79,024 89
Fort George ...	17,351 52	545 67	2 00	1 00	5 00	.....	.....	33,511 92	51,417 11
Kamloops	31,293 97	460 58	84 70	5 00	8 00	.....	.....	18,739 32	50,591 57
Totals.....	$918,663 03	$2,866 76	$197 93	$112 94	$200 66	$13,570 34	$82,212 92	$219,497 38	$1,237,321 96
Totals, 1932	$1,046,588 92	$3,983 03	$368 73	$56 66	$225 73	$13,368 44	$71,596 21	$307,371 82	$1,443,559 54
Totals, 1931	$1,140,282 78	$4,950 55	$994 87	$42 20	$1,092 07	$16,444 18	$82,078 03	$425,978 06	$1,672,862 74
Totals, 1930	$1,460,367 16	$6,799 66	$1,601 76	$140 57	$1,265 33	$21,644 46	$106,553 34	$638,023 79	$2,236,396 07
Totals, 1929	$1,851,535 62	$4,191 84	$1,555 56	$175 83	$1,215 22	$22,127 43	$118,481 18	$711,213 82	$2,710,496 50
Totals, 1928	$1,794,819 93	$20,867 17	$2,103 57	$156 58	$1,194 89	$20,277 64	$123,169 81	$635,292 44	$2,597,882 03
Totals, 1927	$1,767,710 60	$7,343 44	$789 47	$163 57	$2,032 43	$17,169 14	$114,979 79	$631,948 72	$2,542,137 16

FOREST EXPENDITURES, FISCAL YEAR 1932–33.

Forest District.	Salaries.	Temporary Assistance.	Expenses.	Total.
Headquarters	$81,151 32	$244 00	$10,299 79	$91,695 11
Kamloops	50,213 38	.....	18,274 56	68,487 94
Prince George	22,388 38	.....	6,198 36	28,586 74
Prince Rupert	25,332 25	.....	11,538 74	36,870 99
Nelson	43,322 84	.....	17,608 75	60,931 59
Vancouver	66,581 79	.....	38,409 19	104,990 98
Totals.	$288,989 96	$244 00	$102,329 39	$391,563 35
Lumber-trade extension				31,943 79
Grant to Canadian Forestry Association				3,000 00
Reconnaissance, etc				13,426 02
Grazing range improvements				5,211 64
Grand total				$445,144 80

SCALING FUND.

Balance, April 1st, 1932 (deficit)	$46,033.54
Expenditure, fiscal year 1932–33	78,691.02
	$124,724.56
Charges, fiscal year 1932–33	78,090.33
Balance, March 31st, 1933 (deficit)	$46,634.23
Balance, April 1st, 1933 (deficit)	$46,634.23
Expenditure, 9 months, April–December, 1933	70,332.65
	$116,966.88
Charges, 9 months, April–December, 1933	85,790.75
Balance, December 31st, 1933 (deficit)	$31,176.13

FOREST RESERVE ACCOUNT.

Balance brought forward, April 1st, 1932	$22,299.51
Amount received from Treasury, April 1st, 1932 (under subsection (2), section 30A)	46,895.20
Moneys received under subsection (4), section 30A	.....
	$69,194.71
Expenditure, fiscal year 1932–33	37,746.05
Balance (credit), March 31st, 1933	$31,448.66
Balance brought forward, April 1st, 1933	$31,448.66
Amount received from Treasury, April 1st, 1933 (under subsection (2), section 30A)	38,142.50
Moneys received under subsection (4), section 30A	.....
	$69,591.16
Expenditure, 9 months to December 31st, 1933	19,685.84
Balance (credit), December 31st, 1933	$49,905.32

FOREST PROTECTION FUND.

The following statement shows the standing of the Forest Protection Fund as at December 31st, 1933:—

Balance (deficit), March 31st, 1932		$371,072.83
Expenditure		31.51
		$371,104.34
Collections, fiscal year 1932–33	$16,129.20	
Less refunded	2,449.61	
	$13,679.59	
Special levy	282.76	
Refunds of expenditure	11,328.17	
		25,290.52
Balance (deficit), March 31st, 1933		$345,813.82
Balance (deficit), April 1st, 1933		$345,813.82
Collections, April–December, 1933	$2,933.86	
Less refunded	75.48	
	$2,858.38	
Special levy	520.98	
Refunds of expenditure	2,497.78	
		5,877.14
Balance (deficit), December 31st, 1933		$339,936.68

"BRITISH COLUMBIA LOAN ACT, 1932."

(Section 6A—Unemployment Relief.)

EXPENDITURES FOR FIRE-FIGHTING, 1932–33.

Forest District.	Patrols and Fire Prevention.	Tools and Equipment.	Fires.	Improvements.	Miscellaneous.	Total.
Fort George	$1,248.04	$232.37	$2,825.45	$13.73	$10.99	$4,330.58
Kamloops	792.10	161.26	1,371.69	.....	.....	2,325.05
Nelson	2,023.35	170.54	4,005.81	.....	.....	6,199.70
Prince Rupert	1,139.31	44.70	899.27	1.14	.....	2,084.42
Vancouver	1,088.39	331.29	432.09	53.65	.....	1,905.52
Victoria	183.56	.....	.....	.....	.....	183.56
Totals	$6,474.75	$940.16	$9,534.31	$68.52	$10.99	$17,028.73

Patrols and fire prevention	$6,485.74
Tools and equipment	940.16
Fires	9,534.31
Improvements	68.52
Total	$17,028.73

"BRITISH COLUMBIA LOAN ACT, 1932."

(Section 6A—Unemployment Relief.)

EXPENDITURES FOR FIRE-FIGHTING, NINE MONTHS, APRIL 1ST TO DECEMBER 31ST, 1933.

Forest District.	Patrols and Fire Prevention.	Tools and Equipment.	Fires.	Improvements.	Total.
Fort George	$3,635.85	$137.90	$3,648.09	$130.41	$7,552.25
Kamloops	8,254.83	76.85	5,310.01	96.89	13,738.58
Nelson	9,225.85	242.15	21,914.52	.....	31,382.52
Prince Rupert	3,159.28	10.82	94.63	13.48	3,278.21
Vancouver	6,990.46	1,293.30	8,288.39	432.27	17,004.42
Victoria	122.84	.....	.....	.....	122.84
Totals	$31,389.11	$1,761.02	$39,255.64	$673.05	$73,078.82

Patrols and fire prevention	$31,389.11
Tools and equipment	1,761.02
Fires	39,255.64
Improvements	673.05
Total	$73,078.82

FOREST PROTECTION.

In last year's report I traced within the compass of a page the history of forest protection in British Columbia down to 1932. This history falls naturally into three periods—from the first rudimentary legislation of 1874 to the organization of the Forest Branch in 1912; from 1912 to 1931, during which period definite progress was made and protection efforts were fairly adequately financed by the Forest Protection Fund; and the two years from 1932, when the Forest Protection Fund was suspended, to the present.

The Forest Protection Fund was made up of a tax on privately held timber lands and a contribution from the Government. This Fund paid for fire-fighting, organization, equipment, improvements, etc. In the spring of 1932 the Fund was suspended without making other provision for protection, and, while limited sums were later made available for emergency use, protection has practically drifted for two years on the impetus imparted up to 1931.

The temporary protection staff was cut in 1932 to about 40 men, and in 1933 to 123, from a previous average of about 360. Each man of the total field staff was responsible for an average of more than 1,000,000 acres. If one imagines one patrolman carrying the responsibility for protection of a block of about 1,600 timber licences, the situation may be a little clearer. In 1933 the average was about 600,000 acres, equivalent to about 1,000 licences. Mechanical equipment has worn out, stocks of tools are depleted, and improvements such as trails, telephone-lines, and lookouts could not be maintained. The cost of putting these properties back into effective condition will be considerable.

The elimination of the Forest Protection Fund was dictated by economic conditions rather than a chosen act, the result of world-wide conditions over which this Province had little or no control; but we cannot escape the fact that without funds the protection machinery must speedily come to a halt and the forest resources of the Province be considerably reduced.

The forest-protection organization has to give protection to many forms of property other than timber—the isolated settler, highway bridges, power and telephone lines, mining buildings, etc.—and consideration should be given to spreading a part of the load of finance to these properties, which have for the past two decades received protection without cost.

Fortunately, the season of 1933 was unusually favourable. Fire-occurrence was the lowest recorded in twelve years. An acute hazard developed late in August and continued for three or four days, but copious and sustained rains in September closed the season a full month earlier than normal. We escaped entirely the serious early spring hazards which normally develop in the Southern and Northern Interior, and the fire season was really confined to the few days of extreme fire weather on the Lower Coast, a part of the Southern Interior, and in the Northern Interior. It may be of interest to note here that it was during these few days that the great fire in Tillamook County, Oregon, occurred, burning over 300,000 acres and destroying ten billion feet of Douglas fir. A similar outbreak could have occurred in British Columbia, and, had it done so, we would have been wholly unprepared to cope with it.

One interesting development has been the first recorded fires started by gas-engine exhaust in the bush. This has been a serious source of fires elsewhere for some time past, and with the increased use of tractors will call for careful observation and perhaps preventive measures in this Province. Reports have also been received of carbon expelled by the exhaust of passenger and other cars on highways quite sufficiently hot and substantial to start fire. This may account for many roadside fires previously ascribed to smokers.

Our forest losses in 1933 were fortunately not great, but at the same time, in considering the relative hazard of the year and the number of fires occurring with previously favourable years such as 1927 and 1928, the losses show a startling increase and demonstrate that the funds spent on protection are money well spent.

Considering the very large area covered by each patrolman, the percentage of fires controlled under 10 acres was most satisfactory, and yet comparing these figures with those for 1927 and 1928, the nearest comparable years, again shows the effect of reducing the staff. The figures are:—

FIRES EXTENDING OVER 10 ACRES.

Year.	No.	Per Cent.
1927	160	12.46
1928	270	16.45
1932	324	25.59
1933	258	23.85

The tables given herewith will illustrate the main features of forest protection during the year.

Fire Occurrences by Months, 1933.

Forest District.	March.	April.	May.	June.	July.	August.	September.	October.	Total.
Fort George	....	..	3	3	8	73	2	....	89
Kamloops	....	11	16	47	136	157	6	....	373
Nelson	....	14	15	38	117	165	4	....	353
Prince Rupert	....	2	4	2	7	20	8	....	43
Vancouver	....	11	6	14	56	130	7	....	224
Totals	....	38	44	104	324	545	27	....	1,082
Per cent	....	3.52	4.07	9.61	29.94	50.37	2.49	....	100.00

Number and Causes of Fires in Province, 1933.

Forest District.	Lightning.	Campers.	Railways Operating.	Railways under Construction.	Smokers.	Brush-burning not Railway-clearing.	Road, Power and Telephone-line Construction.	Industrial Operations.	Incendiarism.	Miscellaneous (Known Causes).	Unknown Causes.	Total.	Per Cent. of Total Fires in Province.
Fort George	15	30	1	....	13	16	....	....	8	1	5	89	8.22
Kamloops	111	57	27	....	68	24	4	2	23	51	6	373	34.47
Nelson	159	56	40	....	47	15	1	....	11	24	....	353	32.62
Prince Rupert	....	26	....	....	7	8	....	....	1	1	....	43	3.97
Vancouver	....	65	9	....	62	14	2	30	22	13	7	224	20.72
Totals	285	234	77	....	197	77	7	32	65	90	18	1,082	....
Per cent	26.34	21.63	7.12	....	18.21	7.12	0.65	2.95	6.00	8.32	1.66	...	100.00

Fires, classified by Place of Origin and Cost of Fire-fighting, 1933.

Forest District.	Total Fires.	Originated on Vacant Crown Land and Lands paying F.P. Tax.	Originated on Lands not paying F.P. Tax.	Extinguished without Cost.			Cost Money to extinguish.								Total Forest Service Costs in fighting Fire.		Average Cost per Fire.
				No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in Province.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in Province.	Cost less than $100.	Cost $100 to $1,000.	Cost $1,000 to $5,000.	Cost $5,000 to $10,000.	Cost over $10,000.	Dollars.	Per Cent. of Total spent in fighting Fires in Province.	Dollars.
Fort George	89	57	32	56	62.92	5.17	33	37.08	3.06	25	7	1	....	....	3,648.09	9.40	40.99
Kamloops	373	210	163	281	75.33	25.97	92	24.67	8.50	76	16	....	....	....	4,885.11	12.59	13.09
Nelson	353	309	44	232	65.72	21.44	121	34.28	11.18	95	17	9	....	....	21,914.52	56.46	62.08
Prince Rupert	43	16	27	32	74.42	2.96	11	25.58	1.02	11	....	....	....	....	94.63	.25	2.20
Vancouver	224	41	183	151	67.41	13.96	73	32.59	6.74	56	15	2	....	....	8,268.39	21.30	36.91
Totals	1,082	633	449	752	....	69.50	330	....	30.50	263	55	12	....	....	38,810.74	100.00	35.86
Per cent	100.00	58.5	41.5	69.5	....	....	30.5	....	....	24.31	5.08	1.11	....	....	.....	....	.....
Totals, 1932	1,266	668	598	1,077	....	85.07	189	....	14.93	167	21	1	....	....	10,007.19	100.00	7.88
Per cent	100.00	52.77	47.23	85.07	....	....	14.93	....	....	13.19	1.66	0.08	....	....	.....	....	.....
Totals, 1931	2,518	1,440	1,078	1,016	....	40.35	1,502	....	59.65	1,105	324	58	6	9	366,981.66	100.00	145.74
Per cent	100.00	57.19	42.81	40.35	....	...	59.65	....	....	43.88	12.87	2.31	0.24	0.35	.....	...	.....

Cost to other parties (208 cost fires), $43,573; cost to Forest Branch (330 cost fires), $38,810.74.

Fires, 1933, classified by Size and Damage.

Forest District.	Total Fires.		Under ¼ Acre.			¼ Acre to 10 Acres.			Over 10 Acres in Extent.			Damage.		
	No.	Per Cent. of Total Fires in Province.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	No.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	Under $100.	Between $100 and $1,000.	Over $1,000.
Fort George	89	8.22	32	35.95	7.81	30	33.71	7.25	27	30.34	10.47	78	9	2
Kamloops	373	34.47	91	24.40	22.20	157	42.09	37.92	125	33.51	48.45	328	34	11
Nelson	353	32.62	172	48.73	41.95	131	37.11	31.65	50	14.16	19.38	320	16	17
Prince Rupert	43	3.97	22	51.16	5.36	17	39.54	4.10	4	9.30	1.55	42	1	....
Vancouver	224	20.72	93	41.52	22.68	79	35.27	19.08	52	23.21	20.15	189	17	18
Totals	1,082	100.00	410	....	100.00	414	....	100.00	258	....	100.00	957	77	48
Per cent.	100.0	....	37.89	....	...	38.26	....	....	23.85	....	....	88.46	7.11	4.43
Totals, 1932	1,266	100.00	506	....	100.00	436	....	100.00	324	....	100.00	1,123	91	52
Per cent.	100.0	....	39.97	....	...	34.44	....	....	25.59	....	....	88.70	7.19	4.11
Totals, 1931	2,518	100.00	903	....	100.00	929	....	100.00	686	....	100.00	2,203	221	94
Per cent.	100.0	....	35.86	....	...	36.90	....	....	27.24	....	....	87.50	8.77	3.73

Damage to Property other than Forests, 1933.

Forest District.	Forest Products in Process of Manufacture.	Buildings.	Railway and Logging Equipment.	Miscellaneous.	Total.	Per Cent. of Total.
Fort George	$401	$50	.....	$10	$461	0.31
Kamloops	.....	1,700	$50	1,504	3,254	2.22
Nelson	873	7,155	1,000	3,032	12,060	8.21
Prince Rupert	.....	.....	.....	.....	.....	.....
Vancouver	78,379	1,370	50,774	460	130,983	89.26
Totals	$79,653	$10,275	$51,824	$5,006	$146,758	100.00

Damage caused by Forest Fires, 1933.

Forest District.	Merchantable Timber destroyed or damaged.				Valuable Reproduction.		Cut-over Land, Unmerchantable Timber, Old Burn, not restocking.		Grazing Range.		Area of Slash burned.	Grand Totals.					
	Area.	Quantity killed.	Quantity salvable.	Net Stumpage Loss.	Area.	Estimated Present Damage.	Area.	Estimated Damage.	Area.	Damage.	Area burned.	Area.		Quantity.		Damage.	
	Acres.	M. Ft. B.M.	M. Ft. B.M.	$	Acres.	$	Acres.	$	Acres.	$	Acres.	Acres.	Per Cent.	M. Feet B.M.	Per Cent.	$	Per Cent.
Fort George	112	2,206	5	2,266	5,422	12,321	11,742	978	551	...	2,362	21,189	7.03	2,206	1.78	15,565	5.04
Kamloops	10,780	12,164	3,963	11,304	10,088	22,243	45,850	7,968	3,782	152	1,204	71,704	23.79	12,164	9.82	41,667	13.49
Nelson	19,298	56,526	3,414	66,746	29,451	48,597	115,544	14,317	63	25	3,451	167,807	55.66	56,526	45.66	129,685	41.97
Prince Rupert	1	13	.....	13	3	5	2,081	385	1	...	9	2,095	.69	13	.01	403	.13
Vancouver	4,062	52,906	14,544	44,947	10,912	51,933	17,460	24,764	29	...	6,228	38,691	12.83	52,906	42.73	121,644	39.37
Totals	35,253	123,815	21,926	125,276	55,876	135,099	192,677	48,412	4,426	177	13,254	301,486	100.00	123,815	100.00	308,964	100.00
Per cent	11.69	100.0	17.71	40.55	18.54	43.73	63.91	15.67	1.46	0.05	4.40	100.00	.....	100.00	.....	100.00	.....
Totals, 1932	41,388	269,317	15,057	233,314	80,729	225,049	253,258	55,172	19,597	1,129	26,325	421,297	100.00	269,317	100.00	514,664	100.00
Per cent	9.82	100.00	5.59	45.34	19.16	43.72	60.12	10.73	4.65	0.21	6.25	100.00	.....	100.00	.....	100.00	.....
Totals, 1931	178,395	210,173	41,808	624,020	238,652	730,207	431,693	117,103	89,243	5,851	56,996	994,979	100.00	210,173	100.00	1,477,181	100.00
Per cent	17.93	100.00	19.89	42.25	23.98	49.44	43.39	7.92	8.97	0.39	5.73	100.00	.....	100.00	.....	100.00	.....

Causes, Cost, and Damage, 1933.

Causes.	Number.	Per Cent.	Cost.	Per Cent.	Damage.	Per Cent.
Lightning	285	26.34	$15,715	40.31	$125,718	25.69
Campers	234	21.63	7,777	19.95	85,933	24.44
Railways operating	77	7.12	2,914	7.47	13,050	2.67
Smokers	197	18.21	5,542	14.22	10,315	2.10
Brush-burning (not railway-clearing)	77	7.12	849	2.17	3,431	0.70
Road, power, and telephone line construction	7	0.65	.....	.....	.....	.....
Industrial operations	32	2.95	908	2.32	165,877	33.89
Incendiarism	65	6.00	4,645	11.92	23,663	4.84
Miscellaneous (known causes)	90	8.32	323	0.82	7,516	1.53
Unknown causes	18	1.66	321	0.82	20,219	4.14
Totals	1,082	100.00	$38,994	100.00	$455,722	100.00

Number and Causes of Forest Fires for Last Ten Years.

Causes.	1933.	1932.	1931.	1930.	1929.	1928.	1927.	1926.	1925.	1924.
Lightning	285	336	475	892	638	322	512	557	632	307
Campers	234	230	470	344	358	274	182	351	426	382
Railways operating	77	156	295	149	267	282	185	376	337	328
Railways under construction	....	....	....	....	9	....	....	....	....	....
Smokers	197	197	435	294	387	294	163	238	286	302
Brush-burning (not railway-clearing)	77	108	243	171	167	149	78	157	202	243
Road, power, telephone and telegraph	7	18	44	29	22	13	7	14	14	19
Industrial operations	32	17	57	39	65	80	50	104	137	134
Incendiarism	65	127	355	262	139	103	36	68	103	115
Miscellaneous (known causes)	90	64	96	68	100	84	52	126	150	107
Unknown causes	18	13	48	23	36	41	19	156	234	237
Totals	1,082	1,266	2,518	2,271	2,188	1,642	1,284	2,147	2,521	2,174

Comparison of Damage caused by Forest Fires in the Last Ten Years.

	1933.	1932.	1931.	1930.	1929.	1928.	1927.	1926.	1925.	1924.
Total number of fires	1,082	1,266	2,518	2,271	2,188	1,642	1,284	2,147	2,521	2,174
Area burned (acres)	301,486	421,297	994,979	602,675	909,620	106,977	101,944	659,871	1,023,789	402,214
Standing timber destroyed or damaged (M. ft. B.M.)	123,815	269,317	210,173	390,978	272,024	24,069	86,176	398,694	1,024,508	207,651
Amount salvable (M. ft. B.M.)	21,926	15,057	41,808	25,216	107,049	9,060	44,834	109,385	350,770	102,832
Damage to forests	$308,964	$514,664	$1,477,181	$1,408,183	$941,738	$103,001	$141,102	$930,373	$2,121,672	$665,078
Damage to other forms of property	$146,758	$57,030	$326,305	$337,909	$226,919	$95,534	$74,606	$749,891	$625,518	$540,291
Total damage	$455,722	$571,694	$1,803,486	$1,746,092	$1,168,657	$198,535	$215,708	$1,680,264	$2,747,190	$1,205,369

Prosecutions for Fire Trespass, 1933.

Forest District.	Information laid.	Contravention of Section 96 of "Forest Act."	Contravention of Section 112 of "Forest Act."	Contravention of Section 114 of "Forest Act."	Burning without a Permit.	Contravention of Section 95 of "Forest Act."	Failure to report Fire.	Contravention of Section 117 of "Forest Act."	Refusing to fight Fire.	Contravention of Section 98 of "Forest Act."	Fines. No.	Fines. Amount.	Served Sentence in Gaol.	Suspended Sentence.	Cases dismissed.	Cases pending.	Cases withdrawn.
Fort George	1	..	..	..	..	..	..	..	1	..	..	.....	1	..	..	..	..
Kamloops	1	..	..	..	..	1	..	..	..	..	1	$25 00	..	..	..	..	..
Nelson	..	..	..	..	..	..	..	..	..	..	..	.....	..	..	..	..	..
Prince Rupert	..	..	..	..	..	..	..	..	..	..	..	.....	..	..	..	..	..
Vancouver	1	..	..	..	..	1	..	..	..	..	..	.....	..	..	1	..	..
Totals	3	..	..	..	..	2	..	..	1	..	1	$25 00	1	..	1	..	..
Totals, 1932	16	3	1	1	7	..	2	..	2	..	12	$300 00	..	..	4	..	..

Burning Permits, 1933.

Forest District.	Clearing Agricultural Land.				Clearing Logging-slash.				Clearing Railway Right-of-way.				Clearing Public Roads.				Grand Totals.			
	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.	Permits issued.	Area burned over.	Fires escaped Control.	Fires set without Permit.
	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.	No.	Acres.	No.	No.
Fort George	3,155	4,856	8	....	44	134	....	....	20	100	....	....	77	129	....	....	3,296	5,219	8	....
Kamloops	1,376	4,339	24	1	6	335	2	....	15	45	6	....	33	350	4	....	1,430	5,069	36	1
Nelson	1,736	3,454	2	1	....	.....	....	....	28	46	1	....	11	67	1	....	1,775	3,567	4	1
Prince Rupert	1,348	3,956	4	....	26	41	....	....	11	30	....	....	18	139	....	....	1,403	4,166	4	....
Vancouver	3,892	6,800	7	7	33	708	....	....	19	746	..	....	73	258	....	....	4,017	8,512	7	7
Totals	11,507	23,405	45	9	109	1,218	2	....	93	967	7	....	212	943	5	....	11,921	26,533	59	9
Per cent	96.51	88.21	76.27	100.0	0.92	4.59	3.39	....	0.79	3.64	11.86	....	1.78	3.56	8.48	....	100.00	100.00	100.0	100.0
Totals, 1932	11,247	22,874	53	20	83	13,974	2	....	90	149	....	....	223	2,033	13	1	11,643	39,030	68	21
Per cent	96.59	58.61	77.93	95.24	0.72	35.80	2.95	....	0.77	0.38	....	....	1.92	5.21	19.12	4.76	100.00	100.00	100.0	100.0

EQUIPMENT, IMPROVEMENTS, AND MAINTENANCE.

KAMLOOPS.

Equipment—	
One Ford car	$991.00
Maintenance of improvements—	
Miscellaneous	93.00

FORT GEORGE.

Equipment—	
Fire-fighting hose, etc.	$455.00
Fire-fighting tools, etc.	709.00
	$1,164.00
Improvements—	
Tsinkut Mountain Lookout Telephone-line	$206.00
Longworth Mountain Lookout Telephone-line	165.00
	$371.00
Maintenance—	
Miscellaneous	$248.00

NELSON.

Equipment—	
One Chevrolet car	$879.00
One Ford car	796.00
One outboard motor	185.00
Fire-fighting hose, etc.	1,114.00
Fire-fighting tools, etc.	74.00
	$3,048.00
Maintenance of improvements—	
Miscellaneous	$567.00

PRINCE RUPERT.

Equipment—	
Fire-fighting hose, etc.	$126.00
Improvements—	
Miscellaneous	13.00
Maintenance—	
Miscellaneous	138.00

VANCOUVER.

Equipment—	
One Dodge car	$1,201.00
Fire-fighting hose, etc.	1,593.00
New engine and equipment for scaling launch	2,008.00
	$4,802.00
Maintenance of improvements—	
Miscellaneous	$459.00

GRAZING.

The year 1933 was perhaps the most difficult yet experienced by the stockmen of the Province, due to the exceptionally low price received for beef, which was for the year only about one-third of that prevailing in 1929 and nearly $1 per hundredweight less than in 1932. The difficulties of the stockmen under such conditions are increased by shortage of winter feed and overgrazing on the lower and open ranges. It would appear that it may be some time before

beef prices return to 1929 levels, and the importance of cutting losses by better range-management, increasing the calf-crop, and marketing younger beef is thereby emphasized.

The Department has continued its efforts to promote a better use of the ranges. In co-operation with representatives of the Dominion Range Experiment Station at Manyberries, Alberta, the Provincial Department of Agriculture, the University and the Sanatorium authorities, a study was undertaken during the summer of the ranges of the Tranquille Sanatorium, particular attention being paid to the questions of range-use, seasonal plant-development, analysis of the food values of different plants, and poisonous-plant concentrations. It is felt that the stock and varied types of ranges of the institution may offer unusual opportunities for experimental studies dealing with every phase of range-management and live-stock raising.

The work of examining and reporting on the extent and condition of Crown ranges in the various parts of the Interior was carried forward, the largest areas involved being the Chezacut unit of the Alexis Creek Range and the Nicola Stock Range. The impoverishment of the open, more accessible ranges through lack of attention to the distribution of cattle, and the neglect to use and realize the value of forage on other areas, are very evident in places. It is hoped that a knowledge of these conditions will gradually lead to an increased interest by the stockmen in improved range control and management.

Meetings were again held by departmental officials with the stockmen throughout the Province to discuss various range problems with them and to promote co-operation with the Department.

Range and Market Conditions.

Heavy snow in the winter of 1932–33, followed by well-scattered rains all summer, resulted in much better forage conditions on the ranges in general. The growth of grass was luxuriant and lasted well on into the summer. Water conditions for the stock were also greatly improved.

It is to be regretted that a similar improvement in markets cannot be reported. Whereas in 1932 early sales for top steers were on a basis of about 4 cents per pound, sliding to 3 cents and lower by the end of the season, the starting price in 1933 was around 3 cents, while the price which prevailed for most of the summer probably averaged about 2½ cents per pound or a little less. Fortunately, the prices increased to 3¼ and 3½ cents in November and December. The low prices for lambs continued.

While the year's record for the stock industry has therefore been most unsatisfactory, the slight improvement in the market, combined with the better outlook in general business conditions, justifies some feeling of optimism for 1934.

Live Stock on Crown Ranges.

The number of live stock grazing under permit on Crown ranges in 1933, as compared with 1932, was as follows:—

	Cattle and Horses.	Sheep.
1932	56,674	41,150
1933	58,770	34,329

Range Improvement and Wild Horses.

Expenditures from the Range Improvement Fund during the present fiscal year to the end of December, 1933, amounted to approximately $2,000. Of this sum, $920 was spent on the disposal of wild horses and about $900 on new improvements, which included work on one stock-trail, four water-developments, two drift-fences, four mud-holes, and two bridges. This Range Improvement Fund is provided by Statute for the improvement of Crown ranges, and applications from stock associations for expenditures on the Crown ranges used by them receive careful consideration by the Department.

During the year 1933, 672 horses were destroyed or sold. This clearing of the ranges of useless horses is resulting in great benefit to the ranges affected.

VICTORIA, B.C.:
Printed by Charles F. Banfield, Printer to the King's Most Excellent Majesty.
1934.

1,500-134-5837