PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF LANDS

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

H. CATHCART, *Deputy Minister.* E. C. MANNING, *Chief Forester.*

REPORT

OF

THE FOREST BRANCH

FOR THE

YEAR ENDED DECEMBER 31ST

1935

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VICTORIA, B.C., February 24th, 1936.

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 1935.

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 1935.

E. C. MANNING,
Chief Forester.

In Memory

of

PETER Z. CAVERHILL

Chief Forester

of

British Columbia

1920 - 1935

Whose untimely death
on December 8th, 1935,
removed from the public service
a Forester
whose ability and integrity
will long be remembered.

REPORT OF THE FOREST BRANCH.

The year 1935 opened quietly for the lumber industry on the Coast. Heavy snowfall in the woods in January and February slowed up log production, and with a dull market during the first three months exports were considerably below the corresponding period for 1934. Trade with Japan showed a very encouraging opposite trend, but this unfortunately was entirely eliminated by an increase in tariff in July. In spite of this and some interference from longshoremen's strikes, shipments overseas continued to show a steady improvement until by the end of the year the total was only 5 million feet behind that of 1934.

During midsummer, due to strikes in the mills in Washington and Oregon, a considerable amount of business unexpectedly developed for several months south of the Line in face of the almost prohibitive duty of $4 per thousand board-feet.

Possibly the most encouraging sign was the improvement in Canadian sales, amounting to approximately a 30-per-cent. increase over the sales of the preceding year. British Columbia, the Prairies, and Eastern Canada, all showed an increased consumption, which was, however, particularly noticeable in British Columbia and the Prairie Provinces. The Interior lumber-mills participated in this improvement, but, with their former American market practically closed to them until January 1st, 1936, and not having access to any extent to the overseas markets, their condition was still far from satisfactory.

While at the end of the year a stiffening of lumber prices occurred, the average for the year was slightly lower than that of 1934. Various factors influence price-levels, but those over which the industry itself has some control should be given very careful consideration.

The shingle industry passed through both dark and bright spots. Prior to June, when the NRA was declared unconstitutional, our cut was restricted, since approximately 70 per cent. of our production in normal times is marketed in the United States. After this, with no quota application and with a strike of considerable duration among the shingle-workers of Oregon and Washington, there followed a period of activity. Since the strike has been settled south of the Line, business has been about normal, with some improvement of price over that of a year ago.

The pulp and paper mills started the year 1935 anticipating an increase in price of news-print. This was not realized and the end of the year showed little price change, although a small increase is again expected for the new year. Newsprint production was about the same, but less pulp was marketed because the new Japanese surtax in July eliminated importations of this product.

The reaction to the curtailed purchases of ties and poles in recent years is now becoming evident. Although the price for hewn ties remained the same, there was an increase in production in 1935 of 50 per cent. over that of 1934. Similarly, pole and piling shipments increased 90 per cent. A slight stiffening in the price of poles is evident, and, although a betterment of the market is expected, increased competition, particularly from southern yellow-pine poles, is seriously restricting the sale of our product in the United States.

A new export industry has been established in British Columbia, mainly as a result of a preference granted on doors at the Empire Trade Conference held in Ottawa in 1932. From a small initial output in the latter part of 1933, shipments to the United Kingdom increased to 400,000 doors in 1934 and 1,100,000 in 1935.

The year's total production of all products was 2,649 million board-feet, an increase of 20 per cent. over that of 1934 and 65 per cent. over the recent low year of 1932. The value of production likewise increased from $35,000,000 in 1932 to nearly $57,000,000 in 1935. There is probably no better evidence of improving economic conditions in the Province.

Prospects for 1936 are encouraging. Supported by the general improvement in economic conditions throughout the world, a further increase in our water-borne lumber shipments should take place, particularly with the restoration on January 1st, 1936, of our trade with Japan. The new reciprocal trade treaty with the United States gives us a partial re-entry into our former American market. Although there is a quota limitation on hemlock and Douglas fir shipped to that country, there is no such restriction on spruce. This should help our Interior sawmills and, if a reduction in freight rates similar to that granted by the American railroads could be secured, lumber shipments from the Interior of the Province to the Prairies and Eastern Canada should show a definite improvement. Our own Canadian market probably holds the most promise of all for 1936.

The forest industries have over the years been outstanding in their value of production, employment of labour, and revenue to the Government. It is therefore only a matter of ordinary common sense that thought be given to the source of the raw material and care be taken to keep our forest areas under crop, particularly the more accessible and productive.

ORGANIZATION AND PERSONNEL.

Distribution of Force, 1935.

Forest District.	Permanent.										Temporary.				Total.
	Chief Forester, Asst. 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, Lookoutmen, and Dispatchers.	Launch Crews and Repairmen.	Cruisers, Compassmen, and Packers.	
Vancouver	----	2	1	20	2	1	3	15	1	19	19	31	8	----	122
Prince Rupert	----	2	----	1	----	----	1	7	----	6	8	7	3	----	35
Fort George	----	2	----	----	----	----	----	7	----	4	7	10	----	----	30
Kamloops	----	2	----	----	2	----	1	13	1	7	16	23	----	----	65
Nelson	----	2	1	----	----	----	3	10	1	7	20	20	----	----	64
Victoria	5	----	----	----	9	2	----	1	6	26	----	----	----	36	85
Totals	5	10	2	21	13	3	8	53	9	69	70	91	11	36	401

PROVINCIAL FORESTS.

No new Forests were established during the year. There are now fourteen Provincial Forests on the Coast and twenty-four in the Interior of the Province, covering 6,100 square miles and 17,550 square miles respectively. The standing timber aggregates 40,000 million board-feet in the Coast Forests and 20,500 million board-feet in the Interior Forests.

The establishment of these Provincial Forests is a step towards regulation of timber production and the adoption of a Province-wide policy of sustained yield as soon as economic conditions allow. The rate at which this purpose can be achieved is dependent chiefly upon the establishment of stable markets, upon the co-ordination of the interests of the Government, as landlord, with those of the licensees who hold rights of cutting a large proportion of the accessible mature timber, upon the success of measures adopted to provide natural reforestation of the cut-over lands, and upon protection from fire, especially in the Interior Forests.

When and where the problems involved in the attainment of these objectives can be solved, the selection of working circles and regulation of production on a sustained-yield basis will follow. In the case of those Forests which already have satisfactory markets (and in fact some of them have been heavily overcut) the next step will be to construct detailed working-plans, but as yet the technical staff required for this is not available.

The programme of survey of areas suitable for permanent forestry was continued. Two field parties were engaged in the Interior and one on the Coast.

The survey of the Kettle River Forest, commenced in 1934, was completed by one of the Interior parties and the other party made a survey of the watershed of the Upper Arrow Lake. The Coast party continued the examination of the Lower Coast, working northwards from the area covered last year. The country from Simoom Sound to Drury Inlet, including Kingcome Inlet, was surveyed. Topographic and forest maps and estimates of this year's work are in course of preparation.

Maps, estimates, and preliminary plans for management were completed for the proposed *Toba Forest*, which was surveyed last year. This is a forest area on the Mainland Coast between Powell River and Bute Inlet, including Toba Inlet and tributary watersheds. The total area, 763,900 acres, was found to include the following:—

	Acres.	Acres.
Area capable of producing Commercial Timber—		
Mature timber—		
Accessible	50,100	
Inaccessible	27,200	
		77,300
Immature timber—		
1– 20 years old	10,300	
21– 40 years old	21,600	
41– 60 years old	700	
61– 80 years old	400	
81–100 years old	700	
		33,700
Logged or burned, not reforested	9,400	
Reforested with non-commercial cover	9,800	
		19,200
Total sites of productive quality		130,200
Area incapable of producing Commercial Timber—		
Barren, alpine, or scrub-covered		626,300
Swamp and meadow		2,400
Water		5,000
Total non-productive sites		633,700

The timber was estimated as follows (over 11 inches D.B.H.) :—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western red cedar	465,700	207,200	672,900
Douglas fir	424,600	179,800	604,400
Western hemlock	428,500	107,700	536,200
Silver fir	250,500	44,900	295,400
Sitka spruce	31,500	5,700	37,200
Yellow cypress	30,900	1,100	32,000
White pine	21,400	300	21,700
Totals	1,653,100	546,700	2,199,800

All the alienated timber and 1,072,000 M.B.M. of the Crown timber is considered to be accessible for logging under present conditions. During the last ten years an average volume of 30,500 M.B.M. has been logged annually. The accessible areas could support a sustained yield of 25,000 M.B.M. annually, but, assuming that market and logging conditions in future will allow operations in the areas now considered inaccessible and that satisfactory reforestation can be obtained, an annual cut of 34,000 M.B.M. could be taken from the Forest indefinitely without depletion.

It is interesting to note that only 29 acres of mature timber and 165 acres of young growth were destroyed by fire during the last ten years. During the same period 6,142 acres of logging-slash were burned, of which 4,825 acres were intentionally burned to remove hazards. It would appear that the fire risk is negligible, given reasonable control of slash-burning.

Of the 33,700 acres of immature timber, 24,500 acres (73 per cent.) are natural reforestation, much of it thirty years old or more, following fires in green timber; 9,200 acres (27 per cent.) of the young growth followed logging. There are 19,200 acres which have failed to restock, 12,100 of them after logging. It should not be assumed, however, that natural reforestation after logging in this Forest is less successful than usual on the Coast, because several large areas of very recent logging are included in the above figures. It is estimated that logged areas in this Forest have a 70-per-cent. chance of being reforested satisfactorily by natural means after the present type of logging. This percentage could probably be improved

at small cost by slight adjustment of logging-plans to provide for leaving groups or ridges of seed-trees in the larger operations.

The area has practically no agricultural value. The Toba River Valley has a narrow belt along the river of poor soil, chiefly sand, which will grow good timber but is unsuitable for cultivation. The rest of the valley is swamp. The river overflows its banks once or twice a year, carrying away the organic constituents of the surface soil and depositing a fresh layer of sand over the low-lying land. A few attempts to settle the best sites have been made in the past by people engaged in logging or fishing, but farming is impossible. The only access to the outer world is by small boat down the river, and even a rowboat can only cross the sand-bars at the river-mouth at high tide. It is recommended that the whole Toba Valley be reserved for its best use, timber production.

Forest maps and estimates were completed for the proposed *Nimpkish Forest*, in the northern part of Vancouver Island, which was examined last year by two forest engineers who were taken in by aeroplane to the back areas of this tract. Good topographic maps were available as the result of a previous photo-topographically controlled aerial survey. The total area, 887,000 acres, was found to include the following:—

	Acres.	Acres.
Area capable of producing Commercial Timber—		
Mature timber—		
Accessible	224,600	
Inaccessible	109,900	
		334,500
Immature timber—		
1– 20 years old	5,900	
21– 40 years old	5,400	
41– 60 years old	2,900	
61– 80 years old	10,100	
81–100 years old	9,600	
		33,900
Logged or burned, not reforested	15,400	
Reforested with non-commercial cover	15,100	
		30,500
Total sites of productive quality		398,900
Area incapable of producing Commercial Timber—		
Barren, alpine, or scrub-covered		454,300
Swamp		5,900
Water		27,900
Total non-productive sites		488,100

The merchantable timber, above 11 inches D.B.H., was estimated as follows:—

Species.	Crown.	Alienated.	Total.
	M.B.M.	M.B.M.	M.B.M.
Western hemlock	1,747,300	2,247,000	3,994,300
Western red cedar	679,900	1,445,000	2,124,900
Douglas fir	388,600	1,711,900	2,100,500
Silver fir	1,005,700	1,011,400	2,017,100
Yellow cypress	244,600	285,300	529,900
Sitka spruce	17,200	64,300	81,500
White pine	12,100	31,200	43,300
Totals	4,095,400	6,796,100	10,891,500

The Nimpkish Valley itself has produced some of the finest old-growth fir in the Province and high-grade fir logs will be taken out for many years more. The rest of the Forest (the Bonanza, Adams, and Tsitika drainages) produces a hemlock - silver fir - cedar type which

will be a valuable source of pulp-wood as well as lumber. The average annual cut from the Forest during the last ten years has been 54,500 M.B.M. The areas accessible under present conditions could produce a sustained annual yield of 81,000 M.B.M. When the whole Forest becomes accessible, and provided all logged areas are reforested, the annual cut could be increased to 109,000 M.B.M. without depletion.

During the last ten years there have been eight fires in this Forest, six of them caused by logging operations and the other two by campers. These fires burned almost entirely in logging-slash. The old burns, prior to logging, occurred along travelled routes. Settlement in this region is, and probably will be, confined to persons engaged in logging and the manufacture of forest products, so that the human factor can be controlled without great difficulty. For the rest the evidence indicates that the fire risk in this Forest is small, due to favourable climatic conditions.

FOREST RESOURCES INVENTORY.

The preliminary compilation of estimates of the forest resources of the Province, which was begun about eight years ago, was completed last year with the publication of figures for the Fort George District. A complete and detailed report is in preparation. A few important changes have been made in the maps and figures since they were published seriatim by districts, but obviously it is impossible to present an absolutely up-to-date inventory of natural resources of the magnitude of the British Columbia forests. Revision of the Inventory by Districts is being undertaken with a reduced staff.

During this year revision of the maps and estimates of the Prince Rupert District was commenced. When completed, it is intended to revise those of the Vancouver District, including Vancouver Island, which was first estimated in 1928. Corrections for logging, fire, and reproduction subsequent to the first inventory will then have been made for the whole Coast, where most of the forest industry is concentrated. Later the statistics and maps of the Interior districts will be revised in a similar manner.

This Forest Inventory has already proved extremely valuable in many ways. It has indicated general and local effects of logging, fires, reforestation, and other factors, a knowledge of which is an essential foundation for intelligent forest policy. The Inventory has provided useful, and in most cases the only, field maps showing forest conditions available for Rangers and other forest officers. They will continue to be so used until replaced by the more complete and detailed maps prepared after Provincial Forest surveys. The latter have now covered approximately 18,000,000 acres, about 10 per cent. of the organized area of the Province.

The following is a summary of timber and classification of land for the whole of the Province. More detailed figures will appear in a separate publication shortly.

Merchantable Timber of British Columbia.

(In millions of feet board measure.)

Species.	Total.			Accessible.		
	Coast.	Interior.	Total.	Coast.	Interior.	Total.
Western hemlock	47,827	10,822	58,649	23,956	2,349	26,305
Douglas fir	40,800	12,163	52,963	21,025	7,218	28,243
Western red cedar	42,049	8,516	50,565	21,492	4,119	25,611
Spruce	9,654	40,624	50,278	5,557	11,341	16,898
Silver fir	18,178	14,045	32,223	8,927	2,083	11,010
Lodgepole pine	138	9,962	10,100	38	2,419	2,457
Cypress	3,099	.....	3,099	1,405	.....	1,405
Larch	.....	2,122	2,122	.....	1,864	1,864
White pine	712	901	1,613	334	580	914
Ponderosa pine	.....	1,383	1,383	.....	1,212	1,212
Totals	162,457	100,538	262,995	82,734	33,185	115,919

Forest Classification of British Columbia.

(Acres.)

	Coast.	Interior.	Total.
Sites of Productive Quality.			
Merchantable timber	7,993,000	15,053,000	23,046,000
Immature timber—			
Over 25 feet high, fully stocked	308,000	18,790,000	19,098,000
Over 25 feet high, sparse	91,000	3,891,000	3,982,000
Under 25 feet high, fully stocked	481,000	5,347,000	5,828,000
Under 25 feet high, sparse	376,000	2,569,000	2,945,000
Total immature timber	1,256,000	30,597,000	31,853,000
Not reforested—			
Logged	248,000	354,000	602,000
Logged and burned	246,000	250,000	496,000
Burned	318,000	18,792,000	19,110,000
Total not reforested	812,000	19,396,000	20,208,000
Total sites of productive quality	10,061,000	65,046,000	75,107,000
Sites of Non-productive Quality.			
Barren	18,214,000	50,590,000	68,804,000
Scrub growth	11,256,000	67,950,000	79,206,000
Swamp and water	1,137,000	5,300,000	6,437,000
Total sites of non-productive quality	30,607,000	123,840,000	154,447,000
Agricultural Sites.			
Cultivated	429,000	712,000	1,141,000
Open grass	91,000	3,617,000	3,708,000
Total agricultural sites	520,000	4,329,000	4,849,000
Total area of British Columbia	41,188,000	193,215,000	234,403,000

Areas examined for Miscellaneous Purposes of the "Land Act," 1935.

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.
Vancouver	7	1,725	1	40	8	350	30	2,589	18	1,311
Prince Rupert	---	-------	---	-------	7	1,059	11	1,542	18	2,824
Fort George	---	-------	3	840	23	3,341	13	1,665	11	2,750
Kamloops	2	205	61	26,288	41	5,406	39	4,229	43	6,213
Nelson	---	-------	---	-------	2	334	35	5,133	2	80
Totals	9	1,930	65	27,168	81	10,490	128	15,158	92	13,178

Classification of Areas examined in 1935.

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.
Vancouver	6,015	902	5,113	70	820
Prince Rupert	5,425	1,317	4,108	320	3,023
Fort George	8,596	3,146	5,450	-----	-------
Kamloops	42,341	2,729	39,612	150	900
Nelson	5,547	1,295	4,252	-----	-------
Totals	67,924	9,389	58,535	540	4,743

FOREST RESEARCH.

The limitation of funds restricted forest-research activities for the year 1935 to the maintenance of studies and projects already in hand, supplemented by a considerable amount of improvement-work on the three established experiment stations carried out by the Young Men's Forest Training Plan crews and reported elsewhere herein.

Studies in growth and yield were continued in the re-examination of twenty permanent sample plots and establishment of seventeen additional permanent plots in South Coast types. Revising the table published in the report of last year, the establishment of these plots now stands as below:—

South Coast types—	Minimum. required.	Now established.
Alder	10	6
Douglas fir and hemlock	100	71
Mid-Coast—		
Sitka spruce	50	1
Southern Interior—		
Lodgepole pine	15	.6
Yellow pine	25	7
Fir-larch	25	4
Central Interior—		
Engelmann spruce	40	27
Lodgepole pine	15	10
Totals	280	132

Regeneration on logged and burned areas in the spruce-balsam forests of the Central Interior presents a major problem in forest-management. The number of seedlings establishing themselves on denuded lands is usually insufficient to restock the areas, and the inferior balsam appears to be supplanting the valuable spruce, reversing the proportions of about 80 per cent. spruce in the present mature stands to 80 per cent. balsam. Studies in natural regeneration, largely concerned with seed-bed conditions, have failed to indicate any solution which could be considered practical under present-day methods of logging. On the other hand, evidence is now appearing to indicate that over a long term of years the proportion of species in the present residual stand may so change as to finally approximate that now found in the mature forests. It is proposed to continue these studies in 1936.

Thirty additional permanent plots established in connection with various studies were re-examined.

In the fall of 1933 it was decided to raise the production of the nursery at the Green Timbers Forestry Station to 500,000 trees per year. As it takes about three years to produce planting stock, nursery and planting programmes must be planned at least that far in advance. The first stock, about 400,000 trees, under this programme will be ready for planting in the spring of 1936. As a part of the same programme about 35,000 acres of logged and vacant Crown land, carefully selected possible planting-sites, were examined. Of this area, some 15,000 acres in three different localities at Campbell River, Read Bay, and Grassy Creek were chosen as suitable for experimental planting on this scale. The first planting on this plan, about 350 acres, will be undertaken in 1936.

Planting in 1935 was confined to some 20 acres at the Green Timbers Station. Planting to date is reported below:—

Location.	Previously reported.		1935.		Total to Date.	
	Acres.	Trees.	Acres.	Trees.	Acres.	Trees.
Green Timbers	259	285,450	20	22,900	279	308,350
West Thurlow Island	545	234,500	....	.....	545	234,500
Campbell River Forest	166	191,050	....	.....	166	191,050
Miscellaneous	36	22,850	....	.....	36	22,850
Totals	1,006	733,850	20	22,900	1,026	756,750

The Young Men's Forestry Training Plan crew at Green Timbers completed an extensive programme of improvement which will greatly facilitate the work there. Of special value a well was dug which promises to supply ample water for nursery purposes. A distribution system for this water is proposed for completion in 1936. Other work completed at Green Timbers, Cowichan Lake, and Aleza Lake Experiment Stations included fire-breaks, improvement and extension of road and trail systems, maintenance and construction of buildings and telephone-lines, installation of a water system at Cowichan Lake, and defining boundaries.

On November 26th and 27th a Conference was held at Ottawa under the auspices of the National Research Council, at which all parties interested in Forest Research in Canada were represented. More than 100 delegates attended. The British Columbia Forest Service was represented by the late Chief Forester, Mr. Caverhill.

The object of this Conference was to define, if possible, the outstanding problems in forestry in Canada and to find ways and means to correlate the work of the various Research organizations. To quote the Chairman of the Conference* in his opening address:—

" We will endeavour to find out what kinds of research each forest agency here represented is equipped to carry out; what they are actually doing; what means of co-operation exist; and we will seek to determine how all available resources can best be given that general direction which is required to avoid duplication and wasted effort and to ensure that no vital element in the problem is overlooked."

The Conference proposed, as a first step to these ends, a standing advisory committee. The personnel recommended was representative of the National Research Council, three Dominion and nine Provincial Government organizations, four universities, four forestry societies, and the forest and wood-using industries. This committee is now in the process of formation.

This Conference is reported here at some length as we believe it should prove of importance in the development of forestry in Canada and in this Province. The field for forest research is so great and the research resources so limited that the closest co-operation of all research agencies is most desirable.

During the year the Research Division has supplied the forest schools of the Universities of British Columbia and Toronto with data from our records for lecture and laboratory use and has provided specimens and information for a number of other organizations. Lecturers in forest surveys, advanced mensuration, and scaling have been loaned to the University of British Columbia. We have likewise received many courtesies and assistance from other forest organizations. Amongst these we are especially indebted to the Dominion Forest Products Laboratory, the Vancouver office of the Dominion Forest Service, the U.S. Forest Service, and the Los Angeles County Forest Department.

LUMBER TRADE EXTENSION.

" When there is no vision the people perish " is a spiritual quotation which must have guided the policies of those in recent years who realized that steps had to be taken to rehabilitate the lumber trade, were it to survive the depression and the virtual loss of the American market in 1932. The history of our trade-extension efforts has been described in the preceding Annual Reports, and 1935 showed a continuation of these efforts, especially in the United Kingdom and South Africa.

The results in lumber shipments overseas in 1935 speak for themselves. The total for the year was only 5 million under the record-breaking figure of 1934, despite the loss of the Japanese business in July which had already reached a total of 42 million feet. But for this new tariff barrier another record of water-borne shipments would have been created.

Shipments to the United Kingdom during the year equalled the record of 456 million feet established the previous year, notwithstanding decreased timber importations, keen competition, and price-cutting on Russian timber in this market. The drop during the first quarter was overcome by the increase in volume towards the latter part of the year. The stability of this market should create confidence among the lumber exporters of British Columbia and lead to its further development, as we are yet only securing about 10 per cent. of the business.

* Major-General A. G. L. McNaughton, President, National Research Council, Ottawa.

The efforts of the lumber-trade delegation which went to South Africa in the latter part of 1934 are now being supplemented by a Lumber Commissioner, Mr. William Johnston, appointed in the summer of 1935 by the British Columbia Lumber and Shingle Manufacturers, Limited. The late Chief Forester, Mr. P. Z. Caverhill, also did some more effective work while attending the British Empire Forestry Conference held there in September of 1935. The results of the foregoing are now becoming evident and a definite increase in trade with South Africa should follow, particularly if the present handicap of a slow freight service can be removed.

Several other promising fields for increased lumber-sales in 1936 are becoming evident, and it is difficult to conceive of any line of trade activity more likely to yield returns for the expenditures involved. The close co-operation existing between the Provincial Government and the British Columbia Lumber and Shingle Manufacturers, Limited, in carrying forward this work is adding materially to its progress. No unprejudiced person can seriously doubt its effectiveness, especially where assisted by trade preferences. In 1929, before any such work was undertaken, British Columbia's share of the total water-borne export of lumber from the Pacific North-west to other than Canadian and American ports was 20 per cent.; in 1935 it was 58 per cent. of the total.

The resignation in June of the Lumber Trade Commissioner at London, Mr. Loren L. Brown, was much regretted by every one. His assistant, Mr. R. D. Roe, was appointed to the vacancy created and is carrying on effectively the work so ably handled for several years by Mr. Brown.

One phase of this promotion-work should receive special attention in the future. We must in the future increase our efforts to familiarize importing countries with the excellent qualities of our cedar and hemlock, particularly the latter species. The amount of hemlock lumber we ship is so much out of proportion to the ratio between it and Douglas fir in our timber stands that, if we continue as at present, we shall be in the same position as the manufacturer who is selling only one grade of his product. It means waste and decreased sales for both the manufacturer and the lumberman.

WATER-BORNE LUMBER TRADE (IN F.B.M.).

Destination.	1929.	1930.	1931.	1932.	1933.	1934.	1935.
Australia	41,493,476	33,076,587	50,803,023	125,551,388	123,732,822	128,141,120	129,492,501
New Zealand	8,559,208	6,416,105	2,578,740	979.148	1,300,332	2,957,036	3,792,767
South America	2,449,494	1,774,697	1,354,028	140,945	3,641,569	1,619,672	4,017,393
China	43,323,398	55,224,104	53,854,005	53,341,172	130,596,268	108,127,921	91,232,225
Japan	192,411,505	150,869,880	138,851,607	60,031,785	60,657,328	80,278,627	43,079,906
United Kingdom and Continent	69,903,655	98,037,621	81,356,058	108,314,682	271,073,393	455,695,397	455,861,662
South Africa	15,889,002	17,685,896	13,120,035	5,664,646	18,213,254	25,275,805	28,349,718
India and Straits Settlements	243,807	241,129	369,689	544,271	916,536	430,736	3,414,720
United States and Atlantic Coast	351,526,590	259,093,570	207,586,216	79,682,896	29,528,026	28,735,159	62,013,385
Philippine and Hawaiian Isls.	.....	122,744	.....	.....	.....	.....	.....
West Indies and Cuba	14,347,317	12,781,209	7,520,512	8,239,598	11,830,457	13,466,861	7,132,686
South Sea Islands	5,508,978	3,230,759	2,527,526	2,009,102	2,476,670	4,475,125	4,555,819
Mexico and Central America	623,766	550,018	478,794	1,746,278	1,669,075	2,410,162	4,870,050
Egypt	4,744,180	.....	4,195,326	.....	.....	4,347,844	4,215,943
*Belgium	.....	.....	336,428	79,474	6,140,501	2,997,165	6,265,143
*Denmark	.....	.....	62,129	.....	.....	5,021	1,997
*France	.....	.....	241,865	148,901	10,066	48,245	425,399
*Germany	.....	.....	154,135	120,519	126,846	104,924	845,607
*Holland	.....	.....	419,373	144,018	301,818	9,136	1,870,064
*Italy	.....	.....	301,561	128,678	350,966	329,554	1,869,109
*Norway and Sweden	.....	.....	18,200	.....	.....	5,165	7,976
Spain	.....	.....	.....	15,955	.....	.....	456,753
Foreign, unclassified	50,494,046	73,195,238	.....	6,087	33,993	4,039	207,658
Totals	801,518,422	712,299,557	566,129,250	446,889,543	662,599,920	859,464,714	853,978,481

* Previously included with United Kingdom.

THE FOREST INDUSTRIES.

ESTIMATED VALUE OF PRODUCTION, INCLUDING LOADING AND FREIGHT WITHIN THE PROVINCE.

Product.	1929.	1930.	1931.	1932.	1933.	1934.	1935.
Lumber	$50,140,000	$32,773,000	$16,738,000	$13,349,000	$15,457,000	$20,377,000	$24,094,000
Pulp and paper	14,400,000	16,520,000	13,508,000	11,156,000	10,852,000	12,373,000	12,414,000
Shingles	8,300,000	4,161,000	2,721,000	2,805,000	4,500,000	4,375,000	8,750,000
Boxes	2,437,000	2,287,000	1,315,000	1,100,000	1,313,000	1,632,000	1,720,000
Doors	----------	----------	----------	----------	----------	----------	1,693,000
Piles, poles, and mine-props	5,500,000	4,726,000	2,453,000	772,000	450,000	487,000	810,000
Cordwood, fence-posts, and mine-ties	1,734,000	1,596,000	1,405,000	1,576,000	1,850,000	1,335,000	1,453,000
Ties, railway	2,116,000	1,253,000	1,044,000	502,000	250,000	485,000	764,000
Additional value contributed by the wood-using industry	2,100,000	2,387,000	1,350,000	1,014,000	1,200,000	1,320,000	1,300,000
Laths and other miscellaneous products	2,400,000	1,500,000	1,500,000	1,125,000	1,000,000	1,100,000	1,100,000
Logs exported	4,124,000	2,492,000	2,370,000	1,730,000	2,228,000	1,931,000	2,820,000
Pulp-wood exported	50,000	42,000	43,000	28,000	55,000	46,000	23,000
Totals	$93,301,000	$69,737,000	$44,447,000	$35,157,000	$39,155,000	$45,461,000	$56,941,000

PAPER (IN TONS).

Product.	1929.	1930.	1931.	1932.	1933.	1934.	1935.
Newsprint	201,009	224,928	217,562	205,050	237,107	267,406	262,123
Other papers	19,492	20,446	17,709	24,051	23,492	26,777	33,287

In addition to the 286,600 tons of pulp manufactured into paper in the Province, 75,200 tons were shipped out of the Province during the year.

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

Forest District.	Fir.	Cedar.	Spruce.	Hemlock.	Balsam.	Yellow Pine.	White Pine.	Lodgepole Pine.	Larch.	Cotton-wood.	Miscel-laneous.	Totals.
Vancouver	1,257,116,097	439,866,749	23,002,722	383,917,836	77,199,854	.....	15,517,614	.....	.....	2,075,412	16,000,340	2,214,696,624
Prince Rupert	1,278,982	16,362,919	62,358,125	42,658,839	10,882,900	.....	.....	19,869,915	.....	612	1,290,353	154,702,645
Totals, Coast	1,258,395,079	456,229,668	85,360,847	426,576,675	88,082,754	.....	15,517,614	19,869,915	.....	2,076,024	17,290,693	2,369,399,269
Fort George	8,257,659	802,806	23,467,064	.....	87,881	.....	.....	13,545,788	.....	2,214	3,719,776	49,883,188
Kamloops	45,793,314	9,560,447	1,245,770	49,105	11,313	26,238,042	1,391,377	187,433	1,085,731	228,920	11,906,531	97,697,983
Nelson	26,580,190	10,769,895	14,986,996	2,059,079	465,746	6,978,818	11,073,170	1,172,279	45,712,406	701,712	11,807,664	132,307,955
Totals, Interior	80,631,163	21,133,148	39,699,830	2,108,184	564,940	33,216,860	12,464,547	14,905,500	46,798,137	932,846	27,433,971	279,889,126
Grand totals, 1935	1,339,026,242	477,362,816	125,060,677	428,684,859	88,647,694	33,216,860	27,982,161	34,775,415	46,798,137	3,008,870	44,724,664	2,649,288,395
Grand totals, 1934	1,161,212,111	335,779,926	132,327,306	342,766,236	77,442,211	39,573,745	17,136,556	19,475,917	30,222,468	4,052,857	54,802,536	2,214,791,869
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

Total Amount of Timber scaled in British Columbia during Years 1934–35 (in F.B.M.)

Forest District.	1934.	1935.	Gain.
Vancouver	1,830,963,174	2,214,696,624	383,733,450
Prince Rupert	152,102,206	154,702,645	2,600,439
Totals, Coast	1,983,065,380	2,369,399,269	386,333,889
Fort George	42,132,295	49,883,188	7,750,893
Kamloops	90,162,756	97,697,983	7,535,227
Nelson	99,431,438	132,307,955	32,876,517
Totals, Interior	231,726,489	279,889,126	48,162,637
Totals for Province	2,214,791,869	2,649,288,395	434,496,526

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.		
Vancouver	634,278,528	549,324,481	97,949	115,804,413	8,960,499	805,931,616	30,350,476	43,608,059	18,883,089	7,457,514	2,214,696,624
Prince Rupert	75,526,418	148,345	5,226,207	63,102,733	1,813,725	3,000	110,284	4,180,542	4,481,395	109,996	154,702,645
Fort George	13,781,097	.....	.....	23,761,226	7,657,293	.....	334,625	1,655,134	2,693,813	.....	49,883,188
Kamloops	11,758,826	.....	.....	41,168,768	6,882,970	11,447,563	3,040,503	13,632,643	8,682,019	1,084,691	97,697,983
Nelson	14,171,950	.....	.....	25,544,404	2,758,779	60,171	75,471,455	8,480,839	5,820,357	.....	132,307,955
Totals, 1935	749,516,819	549,472,826	5,324,156	269,381,544	28,073,266	817,442,350	109,307,343	71,557,217	40,560,673	8,652,201	2,649,288,395
Totals, 1934	607,248,479	401,366,932	7,084,960	247,602,363	29,349,240	707,095,539	103,412,413	55,048,755	37,247,321	19,335,867	2,214,791,869
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	575,187,828	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

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."

Timber scaled in British Columbia in 1935. (By Months and Districts.)

Month.		Vancouver.	Prince Rupert.	Fort George.	Kamloops.	Nelson.	Total, F.B.M.	Total Lineal Feet.	Total Cords.	Total Hewn Ties.
January	F.B.M.	53,161,063	3,772,687	448,267	2,122,460	4,207,092	63,711,569			
,,	lineal ft.	114,820	54,146	18,160	232,815	107,500		527,441		
,,	cords	4,922	291	317	2,429	2,498			10,457	
,,	hewn ties		207	3,094	1,313	222				4,836
February	F.B.M.	87,158,471	230,534	676,884	1,495,142	3,376,278	92,937,309			
,,	lineal ft.	196,816	33,290	2,300	14,175	34,251		280,832		
,,	cords	3,826	157	932	2,679	2,334			9,928	
,,	hewn ties	243	1,280	32,155	15,268	1,674				50,620
March	F.B.M.	174,095,323	1,116,613	433,913	1,706,889	3,950,114	181,302,852			
,,	lineal ft.	160,406	81,568	17,048	53,605	59,916		372,543		
,,	cords	5,237	16	499	1,664	2,734			10,150	
,,	hewn ties	10,592	30,280	26,173	32,733	2,741				102,519
April	F.B.M.	214,810,252	6,746,133	752,037	5,446,298	3,615,927	231,370,647			
,,	lineal ft.	120,823	92,211		211,766	60,446		485,246		
,,	cords	4,188	23	241	2,739	1,963			9,154	
,,	hewn ties	8,913	41,868	71,529	93,449	8,644				224,403
May	F.B.M.	225,654,561	13,455,491	820,754	3,585,895	8,847,637	252,364,338			
,,	lineal ft.	261,778	75,262	48,785	29,871	82,525		498,221		
,,	cords	8,202	79	813	1,167	1,735			11,996	
,,	hewn ties	1,604	39,096	53,202	63,194	24,395				181,491
June	F.B.M.	227,344,129	16,952,931	677,886	6,766,932	7,983,946	259,725,824			
,,	lineal ft.	440,093	149,049	23,846	102,210	258,490		973,688		
,,	cords	10,430	629	270	1,553	1,851			14,733	
,,	hewn ties	3,935	2,852	64,265	39,928	23,321				134,301
July	F.B.M.	172,993,698	14,362,323	5,270,372	6,419,028	12,116,411	211,161,832			
,,	lineal ft.	183,692	146,020	61,670	124,478	227,771		743,631		
,,	cords	12,268	467	547	1,707	2,045			17,034	
,,	hewn ties	1,286	99,005	45,766	82,158	72,822				301,037
August	F.B.M.	188,834,370	20,654,616	6,060,225	7,345,441	18,637,123	241,531,775			
,,	lineal ft.	240,635	40,632	14,397	227,325	254,418		777,457		
,,	cords	9,041	242	312	1,906	2,465			13,966	
,,	hewn ties	902	93,483		61,495	40,978				196,858
September	F.B.M.	186,457,307	26,440,140	7,128,110	6,997,898	14,327,788	241,351,243			
,,	lineal ft.	395,542	7,356	58,660	310,045	106,596		878,199		
,,	cords	8,767	58	370	1,197	1,853			12,245	
,,	hewn ties	2,993	44,953	54,553	49,030	32,655				184,184
October	F.B.M.	223,362,324	17,878,496	4,461,569	7,434,128	11,590,715	264,727,232			
,,	lineal ft.	499,649	55,043	82,602	425,284	60,492		1,123,070		
,,	cords	9,224	143	351	2,417	2,125			14,260	
,,	hewn ties	870	67,694	9,370	26,956	19,644				124,534
November	F.B.M.	214,633,063	8,967,822	2,812,376	3,959,905	8,970,386	239,343,552			
,,	lineal ft.	177,198	422,413	30,927	172,025	99,909		902,472		
,,	cords	12,114	467	492	3,507	5,209			21,789	
,,	hewn ties			6,705	35,532	10,733				52,970
December	F.B.M.	172,952,319	811,499	529,369	3,256,848	5,357,097	182,907,132			
,,	lineal ft.	470,696	61,280	99,427	404,294	208,073		1,243,770		
,,	cords	6,126	434	1,078	4,519	2,474			14,631	
,,	hewn ties	722	32,562	16,362	8,570	10,248				68,464
Totals for year	F.B.M.	2,141,456,880	131,389,285	30,071,762	56,536,864	102,980,514	2,462,435,305			
,,	lineal ft.	3,262,148	1,218,320	457,822	2,307,893	1,560,387		8,806,570		
,,	cords	94,345	3,006	6,222	27,484	29,286			160,343	
,,	hewn ties	32,060	453,280	383,174	509,626	248,077				1,626,217

Total scale in F.B.M.—2,649,288,395.

Logging Inspection.

Forest District.	Operations.				No. of Inspections.
	Timber-sales.	Hand-loggers' Licences.	Leases, Licences, Crown Grants, and Pre-emptions.	Totals.	
Vancouver	401	1	629	1,031	2,776
Prince Rupert	447	58	141	646	1,999
Fort George	279	.....	200	479	1,029
Kamloops	566	.....	420	986	2,225
Nelson	381	.....	270	651	2,052
Totals, 1935	2,074	59	1,660	3,793	10,081
Totals, 1934	1,603	87	1,546	3,236	9,486
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

Trespasses.

Forest District.	No. of Cases.	Areas cut over (Acres).	Quantity cut.				No. of Resulting Seizures.	Amount.
			Feet B.M.	Lineal Feet.	Cords.	Ties.		
Vancouver	40	124	1,494,031	8,951	268	8,951	....	$2,563.96
Prince Rupert	10	52	480,961	2,894	457	1,356	....	718.33
Fort George	14	72	381,655	8,942	216	1,439	....	730.89
Kamloops	37	192	567,801	27,398	288	1,321	2	1,495.93
Nelson	20	115	119,038	2,780	54	1,011	1	568.47
Totals, 1935	121	555	3,043,486	50,965	1,283	14,078	3	$6,077.58
Totals, 1934	101	720	3,270,608	30,555	1,385	4,825	6	$5,401.05
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

Pre-emption Inspections, 1935.

Pre-emption records examined by districts are:—

Vancouver	327
Prince Rupert	192
Fort George	738
Kamloops	848
Nelson	121
Total	2,226

Areas cruised for Timber-sales.

Forest District.	Number cruised.	Acreage.	Saw-timber (M.B.M.).	Poles and Piles (Lineal Ft.).	Shingle-bolts and Cordwood (Cords).	Railway-ties (No.).	Car Stakes and Posts (No.).
Vancouver	260	41,669	176,838	477,562	31,168	5,561	.....
Prince Rupert	260	43,886	64,405	964,700	3,095	291,960	30,400
Fort George	201	36,425	40,787	220,875	9,143	366,589	.....
Kamloops	358	47,477	59,817	3,554,799	59,859	364,396	.....
Nelson	240	69,495	57,037	456,972	11,488	135,948	44,300
Totals, 1935	1,319	238,952	398,884	5,674,908	114,753	1,164,454	74,700
Totals, 1934	1,331	223,391	356,264	2,856,619	80,101	1,235,766	73,766
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	185,740

Timber-sales awarded by Districts, 1935.

Forest District.	No. of Sales.	Acreage.	Saw-timber (Ft. B.M.).	Poles and Piles (Lin. Ft.).	No. of Posts.	No. of Cords.	No. of Ties.	Estimated Revenue.
Vancouver	266	43,125	106,769,000	312,150	.....	29,599	7,358	$264,169.20
Prince Rupert	274	44,204	44,465,000	1,735,750	27,300	3,356	427,880	144,353.07
Prince George	175	28,562	14,679,000	123,635	.....	7,694	252,347	55,167.69
Kamloops	380	57,018	54,894,000	2,898,864	241,465	47,980	392,472	212,340.26
Nelson	262	59,049	40,024,000	337,978	40,060	13,337	120,525	86,396.82
Totals, 1935	1,357	231,958	260,831,000	5,408,377	308,825	101,966	1,200,582	$762,427.04
Totals, 1934	1,324	219,969	250,629,000	2,721,540	316,910	67,902	894,970	$705,038.99
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

Average Sale Price by Species.

Sawn Timber.	Figures for 1935.		Figures for 1934.		Figures for 1933.		Figures for 1932.	
	Board-feet.	Price per M.	Board-feet.	Price per M.	Board-feet.	Price per M.	Board-feet.	Price per M.
Douglas fir	92,369,000	$0.96	94,784,000	$1.26	51,374,000	$1.16	44,105,000	$1.19
Cedar	29,644,000	.93	22,136,000	.95	20,361,000	1.17	28,217,000	1.15
Spruce	37,566,000	1.20	37,293,000	1.34	20,747,000	1.15	31,151,000	1.63
Hemlock	46,318,000	.70	45,472,000	.73	22,695,000	.73	41,552,000	.76
Balsam	12,083,000	.76	13,846,000	.74	7,742,000	.73	12,498,000	.77
White pine	8,705,000	1.60	2,973,000	1.66	4,816,000	1.94	2,565,000	1.43
Western soft pine	15,166,000	1.33	26,927,000	1.29	11,450,000	1.19	9,807,000	1.25
Tamarack	2,355,000	.77	3,419,000	.76	2,127,000	.68	2,081,000	.84
Other species	16,625,000	.86	3,779,000	.80	4,384,000	.69	9,494,000	.94
Totals	260,831,000	$0.97	250,629,000	$1.11	145,696,000	$1.08	181,470,000	$1.12

Timber cut from Timber-sales during 1935.

Districts.	Feet B.M.	Lineal Feet.	Cords.	Ties.	Posts.
Vancouver	100,276,667	320,732	17,482.84	4,516	4,180
Prince Rupert	42,652,023	1,048,298	1,048.43	355,910	33,158
Prince George	12,371,638	221,514	3,500.50	221,514	13,574
Kamloops	22,583,718	1,398,607	9,092.67	182,685	52,421
Nelson	15,904,590	551,425	7,313.92	86,717	46,626
Totals, 1935	193,788,636	3,540,576	38,438.36	851,342	149,959
Totals, 1934	199,895,549	1,694,470	36,209.24	503,266	84,312
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

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.
Vancouver	150	6,795	78	8,185	31	815	10	780
Prince Rupert	43	490	5	60	12	303	2	201
Fort George	40	486	----	-------	9	175	----	-------
Kamloops	82	901	3	105	30	199	1	50
Nelson	69	1,150	7	142	14	470	3	200
Totals, 1935	384	9,822	93	8,492	96	1,962	16	1,231
Totals, 1934	349	9,152	82	7,311	129	2,999	13	1,228
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

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

Species.	Grade No. 1.	Grade No. 2.	Grade No. 3.	Ungraded.	Totals.
Fir	7,652,407	115,037,455	43,100,990	.....	165,790,852
Cedar	1,088,621	12,421,291	11,361,511	.....	24,871,423
Spruce	25,070	965,582	1,246,536	.....	2,237,188
Cottonwood	.....	605,364	1,270,157	.....	1,875,521
Hemlock	.....	.....	.....	34,473,606	34,473,606
Balsam	.....	.....	.....	2,401,975	2,401,975
Yellow pine	.....	.....	.....	1,687	1,687
White pine	.....	.....	.....	2,904,634	2,904,634
Miscellaneous	.....	.....	.....	734,880	734,880
Totals, 1935	8,766,098	129,029,692	56,979,194	40,516,782	235,291,766
Totals, 1934	10,489,155	89,831,736	43,416,151	28,998,709	172,735,751
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

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.
Vancouver—					
Poles and piling ..... lineal ft.	2,473,771	$222,639	2,340,061	.....	34,810
Cordwood ..... cords	6	24	6	.....	.....
Pulp-wood ..... cords	5,097	22,937	5,097	.....	.....
Shingle-bolts ..... cords	22	165	22	.....	.....
Car-stakes ..... cords	27	189	27	.....	.....
Prince Rupert—					
Poles and piling ..... lineal ft.	1,248,418	86,694	847,302	401,116	.....
Railway-ties ..... No.	294,799	132,003	.....	294,799	.....
Fence-posts ..... No.	44,895	4,391	.....	44,895	.....
Fort George—					
Poles and piling ..... lineal ft.	170,266	13,621	39,095	131,171	.....
Fence-posts ..... cords	82	492	.....	82	.....
Railway-ties ..... No.	235,112	108,840	.....	235,112	.....
Mine-props ..... cords	32	256	.....	32	.....
Mine-timbers ..... lineal ft.	2,950	236	.....	2,950	.....
Kamloops—					
Poles and piling ..... lineal ft.	2,028,688	203,106	1,940,736	87,952	.....
Mine-props ..... cords	112	1,232	.....	112	.....
Fence-posts ..... cords	423	3,787	.....	423	.....
Nelson—					
Poles and piling ..... lineal ft.	1,930,602	191,543	1,769,150	161,452	.....
Fence-posts ..... cords	4,271	34,168	377	3,894	.....
Mine-props ..... cords	3,924	31,392	.....	3,924	.....
Lagging ..... cords	50	400	.....	50	.....
Railway-ties ..... No.	196,274	98,134	.....	196,274	.....
Total value, 1935	.....	$1,156,249	.....	.....	.....
Total value, 1934	.....	$808,252	.....	.....	.....

TIMBER-MARKING.

Timber-marks issued for the Years 1933, 1934, and 1935.

	1933.	1934.	1935.
Old Crown grants	227	238	217
Crown grants, 1887–1906	92	74	72
Crown grants, 1906–1914	76	96	82
Section 53A, "Forest Act"	206	303	286
Stumpage reservations	55	61	82
Pre-emptions under sections 28 and 29, "Land Act"	9	9	6
Dominion lands	1	1	----
Permit berths	2	----	1
Timber berths	15	18	14
Indian reserves	5	13	16
Timber-sales	946	1,324	1,348
Hand-loggers	26	13	8
Special marks	1	----	2
Rights-of-way	1	----	----
Pulp leases	----	1	----
Pulp licences	4	3	7
Totals	1,666	2,154	2,141
Transfers and changes of marks	139	204	221

Hand-logger Licences.

Number issued	83	52	46

Draughting Office, Forest Branch.

Month.	Number of Tracings made.					Blue-prints from Reference Maps.
	Timber-sales.	Timber-marks.	Examination Sketches.	Miscellaneous.	Totals.	
January	18	57	17	14	106	2
February	20	125	22	8	175	3
March	28	93	14	25	160	14
April	14	94	34	16	158	6
May	13	89	27	20	149	4
June	21	75	26	21	143	2
July	19	72	33	21	145	2
August	16	69	25	15	125	2
September	14	65	13	19	111	4
October	13	65	19	20	117	5
November	25	52	27	25	129	13
December	18	82	26	21	147	4
Totals	219	938	283	225	1,665	61

CROWN-GRANTED TIMBER LANDS.

Year.	Area of Private Timber Lands (Acres).	Average Value per Acre.
1919	883,491	9.48
1920	867,921	11.62
1921	845,111	10.33
1922	887,980	11.99
1923	883,344	11.62
1924	654,668	15.22
1925	654,016	40.61
1926	688,372	39.77
1927	690,438	39.01
1928	671,131	38.62
1929	644,011	38.41
1930	629,156	44.74
1931	602,086	43.77
1934	557,481	37.25
1935	535,918	37.13

The extent and value of timber land in the various assessment districts are shown by the following table:—

Assessment District.	Acreage, 1935.	Increase or Decrease in Acreage over 1934.	Average Value per Acre.	Change in Value per Acre since 1934.
Alberni	76,305	— 339	62.11	— 1.48
Comox	101,393	— 4,326	41.66	— 0.90
Cowichan	61,595	— 4,173	64.92	— 1.33
Fort Steele	33,621	— 755	9.50	+ 0.09
Galiano Island	328	*	15.00	+ 0.01
Golden	14,783	—12,407	9.19	+ 1.28
Kettle River	9,239	*	5.84	*
Nanaimo	75,194	— 602	49.53	— 0.42
Nelson	4,179	— 2,092	6.13	— 1.92
Prince George	12,351	+ 185	18.85	— 0.95
Prince Rupert	22,921	+ 3,190	18.52	+ 0.59
Revelstoke	37,345	*	14.03	*
Slocan	58,944	*	7.31	— 1.03
Vancouver	1,410	— 82	91.87	—10.87
Victoria	26,310	— 163	36.06	— 0.46
Totals	535,918	—21,564	37.13	— 0.12

* No change.

FOREST FINANCE.

The table below shows an increase in forest revenues of $375,000 over those of 1934; a very satisfactory figure considering the nature of the increase. The largest single factor contributing to the increase in revenues for 1934 over 1933 was the reinstatement of many licences in the former year, prior to the expiry of the moratorium. The increase in 1935 was, however, due to the royalty and stumpage on the increased production, which was 20 per cent. greater in volume than that of the previous year.

FOREST REVENUE.

	12 Months to Dec. 31, 1935.	12 Months to Dec. 31, 1934.	12 Months to Dec. 31, 1933.	12 Months to Dec. 31, 1932.	12 Months to Dec. 31, 1931.	12 Months to Dec. 31, 1930.
Timber-licence rentals	$496,386.11	$548,816.73	$331,948.95	$478,458.93	$721,931.98	$854,560.87
Timber-licence transfer fees	1,540.00	1,645.00	480.00	930.00	1,330.00	2,180.00
Timber-licence penalty fees	19,858.46	69,302.21	16,004.43	11,687.62	20,632.72	27,861.53
Hand-loggers' licence fees	1,075.00	1,300.00	1,975.00	2,000.00	950.00	1,575.00
Timber-lease rentals	68,132.18	63,212.79	57,859.54	70,025.38	78,202.93	72,117.52
Timber-lease penalty fees	1,071.58	1,565.97	1,265.18	848.88	944.24	607.44
Timber-sale rentals	17,684.57	21,281.83	14,061.93	12,009.29	11,675.17	35,035.94
Timber-sale stumpage	319,424.91	289,709.62	244,225.17	279,034.76	454,391.36	518,309.48
Timber-sale cruising	6,846.88	5,706.12	3,650.69	3,359.20	5,722.83	7,565.12
Timber-sale advertising	935.60	771.30	561.25	569.30	771.55	1,256.69
Timber royalty and tax	1,581,225.07	1,155,862.37	963,511.71	1,046,070.65	1,218,363.02	1,456,330.42
Scaling fees (not Scaling Fund)	312.76	334.71	225.73	374.42	911.07	1,204.07
Scaling expenses (not Scaling Fund)	128.89	116.05	28.80	20.30	24.94	150.01
Trespass penalties	7,478.91	5,924.39	3,399.67	2,535.16	3,686.89	5,825.68
Scalers' examination fees	250.00	25.00	20.00	40.00	175.00	105.00
Exchange	123.01	123.80	350.47	305.02	171.23	591.70
Seizure expenses	237.74	260.50	1,299.13	1,057.39	1,367.72	1,406.64
General miscellaneous	3,830.19	2,745.57	3,051.42	4,265.74	4,495.07	4,137.56
Timber-berth rentals and bonus	25,688.94	31,631.46	30,281.53	33,601.49	33,295.42	----
Interest on timber-berth rentals and bonus	316.50	1,065.42	576.41	597.54	688.97	----
Transfer fees on timber berths	55.48	199.40	28.37	270.00	63.84	----
Royalty interest	150.16	45.06	49.90	489.34	1,136.04	----
	$2,552,752.94	$2,201,645.30	$1,674,855.28	$1,948,550.41	$2,560,931.99	$2,990,820.67
Grazing fees and interest	14,522.41	11,411.56	11,759.13	13,409.37	15,411.46	12,251.88
Taxation, Crown-grant timber lands	333,128.08	308,283.15	320,150.96	368,699.00	397,523.73	422,274.04
Total revenue from forest sources	$2,900,403.43	$2,521,340.01	$2,006,765.37	$2,330,658.78	$2,973,867.18	$3,425,346.59

REVENUE FROM LOGGING OPERATIONS, 1935.

(Amounts charged.)

Forest District.	Royalty and Tax.	Penalty.	Seizure Expenses.	Govt. Scale.		Scaling Fund.		Stumpage.	Total.
				Scaling Expenses.	Scaling Fees.	Scaling Expenses.	Scaling Fees.		
Vancouver	$1,303,866.37	$2,847.44	$95.50	$33.83	$213.50	$20,983.01	$116,539.41	$126,184.57	$1,570,763.63
Prince Rupert	119,454.03	693.19	11.80	3.43	12.37	331.45	7,885.80	84,189.10	212,581.17
Fort George	37,933.86	412.03	36.79	----	1.00	----	----	31,453.63	69,837.31
Kamloops	62,720.23	1,404.91	24.35	----	----	----	----	62,227.02	126,376.51
Nelson	81,347.42	582.93	45.50	21.50	5.00	----	----	33,305.26	115,307.61
Totals	$1,605,321.91	$5,940.50	$213.94	$58.76	$231.87	$21,314.46	$124,425.21	$337,359.58	$2,094,866.23
Totals, 1934	$1,237,968.70	$7,382.38	$251.70	$106.36	$183.89	$17,436.57	$99,563.66	$324,116.42	$1,687,009.68
Totals, 1933	$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

FOREST EXPENDITURE, FISCAL YEAR 1934–35.

Forest District.	Salaries.	Temporary Assistance.	Expenses.	Total.
Vancouver	$46,568.82	.....	$23,391.52	$69,960.34
Prince Rupert	17,983.40	.....	13,982.86	31,966.26
Fort George	14,514.02	.....	5,089.17	19,603.19
Kamloops	31,481.96	.....	12,050.81	43,532.77
Nelson	26,906.59	.....	12,075.42	38,982.01
Victoria	65,749.93	.....	8,467.75	74,217.68
Totals	$203,204.72	.....	$75,057.53	$278,262.25

Lumber-trade extension	53,130.00
Canadian Forestry Association	3,000.00
Reconnaissance, etc.	5,406.19
Grazing range improvements	3,324.17
Grand total	$343,122.61

SCALING FUND.

Balance, April 1st, 1934 (deficit)	$33,379.77
Expenditure, fiscal year 1934–35	101,008.69
	$134,388.46
Charges, fiscal year 1934–35	117,295.79
Balance, March 31st, 1935 (deficit)	$17,092.67
Balance, April 1st, 1935 (deficit)	$17,092.67
Expenditure, 9 months, April–December, 1935	91,393.99
	$108,486.66
Charges, 9 months, April–December, 1935	125,462.24
Balance, December 31st, 1935, being excess of charges over expenditure	$16,975.58

FOREST RESERVE ACCOUNT.

Balance brought forward, April 1st, 1934	$43,954.02
Amount received from Treasury, April 1st, 1934 (under subsection (2), section 30A)	.....
Moneys received under subsection (4), section 30A	.....
	$43,954.02
Expenditure, fiscal year 1934–35	35,029.74
Balance (credit), March 31st, 1935	$8,924.28
Amount received from Treasury, April 1st, 1935 (under subsection (2), section 30A)	43,927.21
Moneys received under subsection (4), section 30A	.....
	$52,851.49
Expenditure, 9 months to December 31st, 1935	33,423.04
Balance (credit), December 31st, 1935	$19,428.45

FOREST PROTECTION FUND.

The following statement shows the standing of the Forest Protection Fund as at December 31st, 1935:—

Balance (deficit), April 1st, 1934		$336,996.19
Expenditure	$353,623.95	
Less refunds	9,645.34	
		343,978.61
		$680,974.80
Collections	$108,236.71	
Government contribution	300,000.00	
		408,236.71
Balance (deficit), March 31st, 1935		$272,738.09
Balance (deficit), April 1st, 1935		$272,738.09
Expenditure, 9 months, April–December, 1935	$202,853.61	
Less refunded	3,699.88	
		199,153.73
		$471,891.82
Collections, 9 months, April–December, 1935	$76,851.12	
Special levy	54.45	
	$76,905.57	
Government contribution	225,000.00	
		301,905.57
Balance (deficit), December 31st, 1935		$169,986.25

ESTIMATED AND KNOWN COSTS OF FOREST PROTECTION TO OTHER AGENCIES, 1935.

Forest District.	Expenditures for				
	Tools and Equipment.	Improvements.	Patrol.	Fire-fighting.	Total.
Vancouver	$28,321.00	$2,436.00	$70,924.00	$46,998.00	$148,679.00
Prince Rupert	812.00	85.00	853.00	605.00	2,335.00
Fort George	.....	.....	.....	150.00	150.00
Kamloops	1,850.00	.....	640.00	382.00	2,872.00
Nelson	4,577.00	12.00	625.00	774.00	5,988.00
Totals	$35,560.00	$2,533.00	$73,042.00	$48,909.00	$160,044.00

EXPENDITURE FOR TWELVE MONTHS ENDED MARCH 31ST, 1935.

Forest District.	Patrols and Fire Prevention.	Tools and Equipment.	Fires.	Improvements.	Total.
Vancouver	$61,780.18	$6,201.21	$8,932.35	$1,298.62	$78,212.36
Prince Rupert	17,170.73	1,021.85	676.18	133.60	19,002.36
Prince George	17,491.52	854.56	298.10	510.80	19,154.98
Kamloops	41,356.90	2,415.69	20,315.13	1,224.05	65,311.77
Nelson	46,471.69	4,707.31	102,892.30	680.66	154,751.96
Victoria	16,790.62	399.90	----------	----------	17,190.52
Gross expenditure, F.P.F.	$201,061.64	$15,600.52	$133,114.06	$3,847.73	$353,623.95
Less refunds	3,911.67	----------	5,733.67	----------	9,645.34
Net expenditure, F.P.F.	$197,149.97	$15,600.52	$127,380.39	$3,847.73	$343,978.61
" B.C. Loan Act, 1932 "	10,383.08	----------	----------	----------	10,383.08
Total net expenditure	$207,533.05	$15,600.52	$127,380.39	$3,847.73	$354,361.69

Patrols and fire prevention	$207,533.05
Tools and equipment	15,600.52
Fires	127,380.39
Improvements	3,847.73
Total	$354,361.69

PUBLICITY.

The forests have always been such an integral part of our lives in British Columbia that many fail to perceive their range of influence, extending all the way from the recreational to the industrial. Subconsciously Mr. Man-on-the-street may take for granted certain facts and figures concerning the importance of the forest industries in the economic life of the Province. He may even have some notion that their beneficial influences reach into every home, but any concern over their perpetuation is left for others. The tourist enthusiast unconsciously pays a glowing tribute to the forest when he invites others to come to the " Evergreen " playground, but the information that our forests supply raw materials for the manufacture of products worth many times our tourist trade will generally surprise him.

Though the care of our forests is placed in the hands of the Forest Branch by the people of British Columbia, the nature of the task and the limitation of funds at its disposal is such that real progress is not possible without the active co-operation of the people and their informed sympathetic interest.

Realizing the foregoing, the Forestry Committee of the Legislature at its last session recommended the Forest Branch carry on more publicity work. Certain officers of the Branch, mostly in their own time, prepared and gave addresses before service clubs and school-children, and showed pictures before audiences in various parts of the Province. By these means the value of our forests and the need of increased care with fire was impressed upon some 9,600 persons. The reception met with everywhere was very encouraging and it is felt that this programme should be greatly extended.

THE YOUNG MEN'S FORESTRY TRAINING PLAN.

The Young Men's Forestry Training Plan was an experiment inaugurated in 1935 to assist unemployed young men by putting them at useful forestry-work, which would give a return to the Province in keeping with the expenditure of public money involved. The project was financed and the men selected by the Department of Labour, and then turned over to the Forest Branch for administration.

The men were paid a reasonable subsistence and given practical training and personal instruction. Where possible, lectures were incorporated in the scheme.

Approximately 500 men were enrolled. They were employed as assistants to Forest Rangers, on forest development and trail projects, and as improvement crews at each of the three Forest Experiment Stations.

The ranger assistants gained experience and gave effective service on all classes of ranger-work. They acted as dispatchers, clerks, compass-men; repaired and maintained telephone-lines, trails, lookouts; assisted in fire-suppression and maintenance of tools and equipment.

Fifteen trail crews were organized, each under a competent foreman. These crews cleared, or built new, 382 miles of pack-horse trail, 10 miles of standard telephone-line, many miles of emergency telephone-line, several cabins, and a number of bridges.

The crews at the Experiment Stations cleared land, fire-breaks, boundaries, trails, and roads; renewed bridges, repaired existing buildings, and constructed additional new ones; developed water-supply systems; maintained and installed telephone-lines; and assisted generally in routine work.

The Forest Branch is particularly well qualified to participate in a scheme of this description with the Department of Labour. Seven thousand six hundred miles of existing forest trails and 1,000 miles of forest telephone-lines require extensive maintenance and repair due to the limited funds available for this work during the past few years. These improvements constitute only a portion of the development-work essential to adequate forest-protection in the Province. Detailed plans are available for many projects requiring immediate attention. It is all outdoor work, well calculated to improve young men mentally and physically and to develop initiative and self-reliance.

The experiment was a complete success in every respect and proved to be a valuable work programme, as well as a relief measure. The reaction of the men themselves was most gratifying and forty-six of them, through the co-operation of the industry, were assisted in securing jobs in the logging camps and sawmills. The excellent co-operation received from the officials of the Labour Department and the unselfish personal interest taken in the young men by the Forest Officers throughout the Service did much to promote the success of the plan.

FOREST PROTECTION.

The fire season 1932 proved to be the most favourable experienced in the Province in a long period of years. It appears now that that year ushered in a cycle of favourable weather which has continued unbroken to the present time. The season 1935, in point of number of fires, distribution, cost, and damage done, proves to be the fourth in succession of "most favourable" years in our forest-protection history.

The season opened with the promise of a severe early hazard. Temperatures were rather high and humidity fairly low. Early vegetation was slow in appearing and dead grass and debris of the previous year dried out quickly. There was very little rain during the spring and early summer and the stage was set for a general outbreak of disastrous fires, which, however, failed to develop. General rains in early June completely relieved the situation. No further risk developed until September, when we were once more relieved by general rains before conditions became really critical. The September rains marked the end of the fire season.

Province-wide precipitation for the year was below the long-time average, and for the summer months hardly average. The highly favourable effect from a fire-protection standpoint must be ascribed to fortuitous occurrence and distribution. In spite of some failure in rainfall over the whole season, July and August were comparatively wet months. The following table of a few items of statistics for various periods illustrates the favourable conditions which have been encountered:—

	Annual Average since 1912.	Average, Past Ten Years.	Average, 1932–35.
Number of fires	1,500	1,700	1,300
Number of cost fires	650	800	450
Number of no-cost fires	850	870	800
Total acres burned	426,000	479,000	353,000
Acres per fire burned	280	280	280
Total cost of forest-protection	$470,000	$520,000	$173,000
Cost of fire-fighting	$192,000	$277,000	$54,000
Cost per fire	$130	$160	$40

NOTE.—Figures rounded to facilitate comparison.

The effect of favourable weather conditions is reflected in these figures, but is clouded materially by the effect of the withdrawal of the Forest Protection Fund during the years 1932 and 1933. During these two years the seasonal Forest Protection staff was reduced in 1932 by about 320 men to 40, and in 1933 by about 237 men to 123. Fire-fighting was restricted to the protection of life and property. For these two years the number of fires and general hazard was closely comparable with the year 1935. The effect of withdrawal of protection (or the measure of the value of the renewed protection) is illustrated in the following table:—

	Annual Average, 1932–33 (Minimum Protection).	Season 1935 (Protection renewed).
Total cost of protection	$45,000	$250,000
Number of fires	1,170	1,110
Total acres burned	360,000	48,000
Acres burned per fire	300	40
Acres merchantable timber killed	38,000	1,800
Stumpage loss	$179,000	$9,000
Acres reproduction killed	63,000	11,000

NOTE.—Figures rounded to facilitate comparison.

The Forest Protection Fund, once more available, will make itself felt in protection afforded to valuable forest-growth, to life, and to property within the limits of the funds provided.

The history of the Forest Protection Fund was briefly outlined in last year's report. Average annual income for ten years ended 1931 was $735,000. Average annual expenditure for the same period was $742,164. Income in 1934 was $408,000, and estimated for 1935, $400,000.

Three major lines of activity must be provided for from these sums—prevention, organization, and suppression. The term " prevention " as used here covers such items as tools and equipment, trails, lookouts, communication system, and public education. It may be said to include all preparation other than organization. " Organization " covers the salaries and expenses of the permanent and temporary protection staff. " Suppression " covers actual fire-fighting expenditures.

Expenditures for 1934 and 1935 have been kept within our reduced income, but in order to do so the total sum available had to be allocated in the first instance to organization and fire-fighting. The strictest economy must be practised in anticipation of expensive outbreaks which may develop, and prevention, logically the first consideration, suffers accordingly, with the added probability of increased fire-fighting cost and loss.

The forests of the Province have been valued at $265,500,000. A Protection Fund of $400,000 represents about one-sixth of 1 per cent. of the value of forest property protected. This is about one-half to one-quarter the sum considered necessary on a similar basis for fire-protection elsewhere. The opinion expressed in last year's Annual Report regarding expenditures from the Forest Protection Fund for the protection of private property is repeated. Some compensation should be made to this fund for such expenditures.

From savings in hand at the end of the past two seasons tools and equipment have been purchased, so that we approach 1936 with fairly adequate stocks. It has not been possible to maintain improvements, which are deteriorating badly.

Some relief in the maintenance of improvements was secured in 1935 through the activities of the Young Men's Forestry Training Plan, and any continuance of this plan will very materially assist in this very necessary work. During 1935 fifteen trail crews opened up a large mileage of protection trails and did other work which could not have been otherwise undertaken. A complete outline of this work is given elsewhere in this report.

Detailed statistics of the fire season are given in the tables on the following pages.

Fire Occurrences, 1935.

Forest District.	April.	May.	June.	July.	August.	Sept.	Oct.	Total.
Vancouver	21	83	78	95	94	74	1	446
Prince Rupert	7	27	5	8	14	8	.....	69
Fort George	.....	19	10	21	6	20	1	77
Kamloops	5	35	47	44	32	36	3	202
Nelson	9	39	19	104	84	50	12	317
Totals	42	203	159	272	230	188	17	1,111
Per cent.	3.78	18.27	14.31	24.49	20.70	16.92	1.53	100.00

Number and Causes of Fires in Province, 1935.

Forest District.	Lightning.	Campers.	Railways Operating.	Railways under Construction.	Smokers.	Brush-burning (not Railway-clearing).	Road and Power- and Telephone-line Construction.	Industrial Operations.	Incendiarism.	Miscellaneous (Known Causes).	Unknown Causes.	Total.	Per Cent. of Total Fires in Province.
Vancouver	26	78	16	....	141	47	4	41	44	41	8	446	40.14
Prince Rupert	.....	21	2	....	16	21	1	2	1	5	....	69	6.21
Fort George	14	19	1	....	12	19	2	....	3	2	5	77	6.93
Kamloops	29	40	21	....	54	16	3	....	3	34	2	202	18.18
Nelson	104	59	25	....	66	24	1	2	21	15	....	317	28.53
Totals	173	217	65	....	289	127	11	45	72	97	15	1,111	100.00
Per cent.	15.57	19.54	5.85	....	26.01	11.43	0.99	4.05	6.48	8.73	1.35	100.00	.....

Damage to Property other than Forests, 1935.

Forest District.	Forest Products in Process of Manufacture.	Buildings.	Railway and Logging Equipment.	Miscellaneous.	Total.	Per Cent. of Total.
Vancouver	$69,939.00	$14,260.00	$129,138.00	$4,223.00	$217,560.00	98.40
Prince Rupert	2,091.00	.....	.....	.....	2,091.00	0.94
Fort George	.....	.....	.....	100.00	100.00	0.04
Kamloops	4.00	810.00	.....	.....	814.00	0.36
Nelson	2.00	75.00	.....	502.00	579.00	0.26
Totals	$72,036.00	$15,145.00	$129,138.00	$4,825.00	$221,144.00	100.00

Number and Causes of Forest Fires for the Last Ten Years.

Causes.	1935.	1934.	1933.	1932.	1931.	1930.	1929.	1928.	1927.	1926.	Total.
Lightning	173	320	285	336	475	892	638	322	512	557	4,510
Campers	217	312	234	230	470	344	358	274	182	351	2,972
Railways operating	65	103	77	156	295	149	267	282	185	376	1,955
Railways under construction	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	9
Smokers	289	415	197	197	435	294	387	294	163	238	2,909
Brush-burning (not railway-clearing)	127	117	77	108	243	171	167	149	78	157	1,394
Road and power- and telephone-line construction	11	10	7	18	44	29	22	13	7	14	175
Industrial operations	45	41	32	17	57	39	65	80	50	104	530
Incendiarism	72	65	65	127	355	262	139	103	36	68	1,292
Miscellaneous (known causes)	97	188	90	64	96	68	100	84	52	126	965
Unknown causes	15	19	18	13	48	23	36	41	19	156	388
Totals	1,111	1,590	1,082	1,266	2,518	2,271	2,188	1,642	1,284	2,147	17,099

Fires classified by Place of Origin and Cost of Fire-fighting, 1935.

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.
				Number.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in Province.	Number.	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.
Vancouver	446	126	320	169	37.89	15.22	277	62.11	24.93	207	56	11	2	1	18,911.51	76.04	42.40
Prince Rupert	69	20	49	51	73.91	4.59	18	26.09	1.62	14	4	.....	.....	.....	375.08	1.52	5.43
Fort George	77	43	34	50	64.93	4.50	27	35.07	2.43	26	1	.....	.....	.....	516.23	2.08	6.70
Kamloops	202	109	93	122	60.40	10.98	80	39.60	7.20	78	2	.....	.....	.....	1,353.93	5.45	6.70
Nelson	317	171	146	186	58.67	16.74	131	41.33	11.79	124	7	.....	.....	.....	3,706.21	14.91	11.69
Totals	1,111	469	642	578	.....	52.03	533	.....	47.97	449	70	11	2	1	24,862.96*	100.00	22.37
Per cent.	100.00	42.22	57.78	52.03	.....	.....	47.97	.....	.....	40.42	6.30	0.98	0.18	0.09	.....	.....	.....
Totals, 1934	1,590	945	645	841	.....	52.89	749	.....	47.11	580	139	22	6	2	133,114.06†	100.00	83.71
Per cent.	100.00	59.43	40.57	52.89	.....	.....	47.11	.....	.....	36.48	8.75	1.38	0.37	0.13	.....	.....	.....
Totals, 1933	1,082	633	449	752	.....	69.50	330	.....	30.50	263	55	12	.....	.....	39,252.41	100.00	36.27
Per cent.	100.00	58.50	41.50	69.50	.....	.....	30.50	.....	.....	24.31	5.08	1.11	.....	.....	.....	.....	.....

Cost to other parties (234 cost fires), $48,909; cost to Forest Branch (533 cost fires), $24,862.96.

* Cost correct to date. Subject to later revision.

† Corrected final total cost. These totals for previous years do not necessarily agree with total fire-fighting costs published in reports for the years involved as under * above. Detailed final costs are published one year in arrears in the table of "Expenditure by Districts" in each annual report.

Fires classified by Size and Damage, 1935.

Forest District.	Total Fires.		Under ¼ Acre.			¼ to 10 Acres.			Over 10 Acres in Extent.			Damage.		
	Number.	Per Cent. of Total Fires in Province.	Number.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	Number.	Per Cent. of Total Fires in District.	Per Cent. of Total Fires in this Class.	Number.	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.
Vancouver	446	40.14	180	40.36	33.15	167	37.45	42.93	99	22.19	55.31	406	21	9
Prince Rupert	69	6.21	30	43.48	5.52	20	28.98	5.14	19	27.54	10.61	67	1	1
Fort George	77	6.93	33	42.86	6.07	30	38.96	7.71	14	18.18	7.82	76	1	.....
Kamloops	202	18.18	74	36.64	13.63	96	47.52	24.68	32	15.84	17.88	197	5	.....
Nelson	317	28.53	226	71.29	41.63	76	23.98	19.54	15	4.73	8.38	310	7	.....
Totals	1,111	100.00	543	.....	100.00	389	.....	100.00	179	.....	100.00	1,056	35	20
Per cent.	100.00	.....	48.87	.....	.....	35.02	.....	.....	16.11	.....	.....	95.05	3.15	1.80
Totals, 1934	1,590	100.00	665	.....	100.00	565	.....	100.00	360	.....	100.00	1,442	88	60
Per cent.	100.00	.....	41.82	.....	.....	35.54	.....	.....	22.64	.....	.....	90.70	5.53	3.77
Totals, 1933	1,082	100.00	410	.....	100.00	414	.....	100.00	258	.....	100.00	957	77	48
Per cent.	100.00	.....	37.89	.....	.....	38.26	.....	.....	23.85	.....	.....	88.46	7.11	4.43

Causes, Cost, and Damage, 1935.

Causes.	No.	Per Cent.	Cost.	Per Cent.	Damage.	Per Cent.
Lightning	173	15.57	$2,413.75	9.71	$4,059.10	1.40
Campers	217	19.55	3,054.00	12.28	5,357.30	1.86
Railways operating	65	5.84	7.89	0.04	160.49	0.05
Smokers	289	26.03	10,132.99	40.76	88,454.17	30.55
Brush-burning (not railway-clearing)	127	11.44	2,390.15	9.61	2,314.00	0.79
Road, power, telephone, and telegraph	11	0.98	123.22	0.49	108.75	0.04
Industrial operations	45	4.04	3,555.15	14.30	182,159.50	62.92
Incendiarism	72	6.47	2,666.12	10.72	5,340.28	1.84
Miscellaneous (known causes)	97	8.74	419.97	1.69	1,495.74	0.52
Unknown causes	15	1.34	99.72	0.40	94.77	0.03
Totals	1,111	100.00	$24,862.96	100.00	$289,544.10	100.00

Prosecutions for Fire Trespass, 1935.

Forest District.	Information laid.	Contravention of Section 95 of "Forest Act."	Contravention of Section 96 of "Forest Act."	Contravention of Section 114 of "Forest Act."	Contravention of Section 100 of "Forest Act."	Burning without Permit.	Incendiary.	Fines.		Served sentence in Gaol.	Suspended Sentence.	Cases dismissed.	Cases pending.	Cases withdrawn.
								No.	Amount.					
Vancouver	10	2	1	1	3	3	....	8	$275.00	....	1	1	....	....
Prince Rupert	....	....	....	....	....	....	....	....	.....	....	....	....	....	....
Fort George	5	....	....	....	....	5	....	....	.....	....	5	....	....	....
Kamloops	1	....	1	....	....	....	....	....	.....	....	1	....	....	....
Nelson	2	....	....	....	....	1	1	1	25.00	....	1	....	....	....
Totals	18	2	2	1	3	9	1	9	$300.00	....	8	1	....	....
Totals, 1934	21	10	2	3	....	5	1	8	$305.00	3	4	6	....	....

Damage caused by Forest Fires, 1935.

Forest District.	Merchantable Timber destroyed or damaged.				Valuable Reproduction.		Cut-over Land, Unmerchantable Timber, Old Burn, not restocking.		Grazing Range.		Area 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. Ft. B.M.	Per Cent.	$	Per Cent.
Vancouver	916	19,976	13,775	4,452	10,161	53,884	14,735	2,639	264	13	11,783	37,859	79.08	19,976	76.49	60,988	89.17
Prince Rupert	71	1,034	550	1,166	20	25	932	235	95	2	62	1,180	2.47	1,034	3.96	1,428	2.08
Fort George	3	5,000	.....	8	59	151	930	72	17	.....	56	1,065	2.23	5,000	19.15	231	0.34
Kamloops	102	25	.....	53	531	1,138	2,893	135	442	15	248	4,216	8.81	25	0.10	1,341	1.96
Nelson	686	78	34	2,956	338	466	2,058	972	385	17	84	3,551	7.41	78	0.30	4,411	6.45
Totals	1,778	26,113	14,359	8,635	11,109	55,664	21,548	4,053	1,203	47	12,233	47,871	100.00	26,113	100.00	68,399	100.00
Per cent.	3.72	100.00	54.98	12.62	23.20	81.38	45.02	5.93	2.51	0.07	25.55	100.00	.....	100.00	.....	100.00	.....
Totals, 1934	124,314	817,125	179,358	458,501	137,926	390,037	349,792	39,612	10,824	457	15,834	638,690	100.00	817,125	100.00	888,607	100.00
Per cent.	19.47	100.00	21.95	51.60	21.59	43.89	54.77	4.46	1.69	0.05	2.48	100.00	.....	100.00	.....	100.00	.....
Totals, 1933	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	100.00	17.71	40.55	18.54	43.73	63.91	15.67	1.46	0.05	4.40	100.00	.....	100.00	.....	100.00	.....

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

	1935.	1934.	1933.	1932.	1931.	1930.	1929.	1928.	1927.	1926.	Total.
Total number of fires	1,111	1,590	1,082	1,266	2,518	2,271	2,188	1,642	1,284	2,147	17,099
Area burned (acres)	47,871	638,690	301,486	421,297	994,979	602,675	909,620	106,977	101,944	659,871	4,785,410
Standing timber destroyed or damaged (M. ft. B.M.)	26,113	817,125	123,815	269,317	210,173	390,978	272,024	24,069	86,176	388,834	2,608,624
Amount salvable (M. ft. B.M.)	14,359	179,358	21,926	15,057	41,808	25,216	107,049	9,060	44,834	109,385	568,052
Damage to forests	$68,399	$888,607	$308,964	$514,664	$1,477,181	$1,408,183	$941,738	$103,001	$141,102	$930,373	$6,782,212
Damage to other forms of property	$221,144	$104,877	$146,758	$57,030	$326,305	$337,909	$226,919	$95,534	$74,606	$749,891	$2,340,973
Total damage	$289,543	$993,484	$455,722	$571,694	$1,803,486	$1,746,092	$1,168,657	$198,535	$215,708	$1,680,264	$9,123,185

Burning Permits, 1935.

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.
Vancouver	3,845	5,763	9	5	33	3,441	.....	.....	16	5,648	.....	.....	74	863	1	.....	3,968	15,715	10	5
Prince Rupert	1,159	2,542	5	.....	20	55	.....	.....	18	180	1	.....	24	44	1	.....	1,221	2,821	7	.....
Fort George	1,877	5,085	9	9	56	102	.....	.....	31	1	1	.....	27	62	1	.....	1,991	5,250	11	9
Kamloops	1,604	4,221	5	1	32	799	.....	.....	15	.....	1	.....	24	1,715	.....	.....	1,675	6,735	6	1
Nelson	1,965	2,669	23	8	.....	120	1	1	23	42	3	.....	6	35	1	.....	1,994	2,866	28	9
Total	10,450	20,280	51	23	141	4,517	1	1	103	5,871	6	.....	155	2,719	4	.....	10,849	33,387	62	24
Per cent.	96.32	60.74	82.26	95.83	1.30	13.53	1.61	4.17	0.95	17.59	9.68	.....	1.43	8.14	6.45	.....	100.00	100.00	100.00	100.00
Total, 1934	8,820	15,505	28	43	78	2,702	5	2	89	5,972	6	3	176	2,056	5	3	9,163	26,235	44	51
Per cent.	96.26	59.26	63.64	84.32	0.85	10.40	11.36	3.92	0.97	22.61	13.64	5.88	1.92	7.73	11.36	5.88	100.00	100.00	100.00	100.00

GRAZING.

Conditions on most ranges during the past year have been somewhat unsatisfactory. The spring was late and cold, which delayed grazing on the ranges three to five weeks. The summer was unusually wet, frosts came early in the fall, and the condition of the stock was rather below average. Conditions better than the foregoing, however, prevailed in the Southern Interior.

The Dominion Range Experiment Station at Manyberries, Alberta, are continuing their comprehensive study of range and cattle conditions at the Tranquille Sanatorium. Mr. T. P. MacKenzie, former Grazing Commissioner for the Province, is in charge, and the progress of these studies will be followed with much interest by the cattle industry.

Grazing reconnaissance covered a total of 80,000 acres. The work done in previous years has proved very helpful in making our yearly grazing plans.

Foot-rot in bands of sheep using the high mountains, particularly between the Okanagan Valley and Shuswap Lake and west to Kamloops, is getting out of control. Unless effective measures are immediately taken, the entire range-sheep business in that part of the Province will be seriously threatened.

The co-operation of the stockmen in range-management continues to be enlisted through meetings with the various groups of range-users and through the construction of range improvements financed by the fund established for that purpose under the "Grazing Act." Many more trails and drift-fences would promote increased and better use of the Crown ranges and those entitled to the benefits of the Range Improvement Fund should apply to the Department for consideration under it.

During 1935 the greatest hay-producing area of Crown land in the Province, that in the vicinity of Creston, was much reduced in size through the success of the local reclamation scheme. Though the loss of hay-cutting rights must be felt by some of the stock-owners, the more intensive use of the land is to be commended.

Market Conditions.

Beef prices were better in 1935 than in 1934, fall beef bringing an average of probably a little over 4 cents per pound for tops. A further improvement is expected in 1936, partly as the result of the new tariff arrangements with the United States, which dropped from 3 cents to 2 cents per pound the duty on animals weighing over 700 lb.

While there was some variation in prices for lambs compared with 1934, the average for 1935 was probably a shade higher, with a tendency to firm at the end of the year. Wool prices were better by from 1 to 3 cents per pound.

Live Stock on Crown Ranges.

The number of live stock grazing under permit on Crown ranges during the past three years was as follows:—

	Cattle and Horses.	Sheep.
1933	58,770	34,329
1934	69,960	36,569
1935	60,864	36,902

Collection of grazing fees during the calendar year 1935 amounted to $14,527.01.

Range Improvements.

Increased settlement and fencing of alienated lands in late years, together with overgrazing in some areas, has tended to reduce the available area of Crown range, while large areas of timbered range are being damaged by the falling of insect-killed trees. The profitable use of the remaining range will depend on proper range-management, which calls for considerable improvement of range conditions. During 1935 the sum of $1,491.33 was expended from the Range Improvement Fund, providing for the following improvements: Fencing two mud-holes; building 43 miles of stock-trails, 7 miles of drift-fence, three water-developments, three holding-grounds, one bridge; and establishhing two experimental seeding-plots.

The work of clearing the ranges of wild horses was continued with results beneficial to the forage. Shooting has been resorted to in some places and in others the horses all rounded up and sold for fox and dog food. Very few large bands of wild horses now remain and the small bunches are being eliminated. This work will need to be continued, as wild bands soon build up again from the nuclei of strayed mares and wild stallions.

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