CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

FORESTRY BRANCH

SUMMARY

of

FOREST PRODUCTION,

OPERATIONS IN THE WOODS

in

CANADA

1932

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DOMINION BUREAU OF STATISTICS - CANADA
FORESTRY BRANCH

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SUMMARY OF FOREST PRODUCTION, 1932.

Ottawa, April 1934.- An estimate of the total forest production of Canada for 1932 has just been completed by the Forestry Branch of the Dominion Bureau of Statistics. The estimate includes all the products of operations in the woods, the unmanufactured materials cut in Canadian forests during the year.

An estimate has also been made of the extent to which our forests are being depleted annually in the process of exploiting these materials. For this purpose converting factors based on actual measurements have been used. Each of these factors represents, in cubic feet, the quantity of standing timber that must be cut in the forest in order to produce one unit of the material in question, based on the total cubic content of the tree. By the use of these factors it has been estimated that our total forest production in 1932 involved the cutting of 1,882,228,308 cubic feet of standing timber. This constitutes only the annual depletion for use and to it must be added the volume of material annually destroyed by fire, which exceeds 230,000,000 cubic feet of merchantable timber and the young growth on 550,000 acres. Insects, fungi and windfall destroy annually at least 700,000,000 cubic feet so that the annual drain on our forest resources in 1932 was considerably more than 2,812,000,000 cubic feet.

The latest available estimate places Canada's forest resources at 267,733 million cubic feet of standing timber which is capable of yielding 448,255 million feet board measure of sawn lumber and 1,528,767 thousand cords of pulpwood, ties, poles and other smaller materials.

An average annual depletion of three billion cubic feet per annum would not necessarily imply that our total resources of 267,733,000,000 cubic feet were reduced by that amount every year and that the supply would therefore be exhausted in about ninety years. Estimating the probable duration of our supply of forest products is not a matter of simple arithmetic. The rate of utilization is far from constant. It tends to increase with the discovery of new uses for wood, the increase in our population and the increase in the demand for forest products from other countries whose supplies have been reduced to a greater extent than our own. The rate of destruction from fires and other agencies is also very uncertain. The fire hazard tends to increase with the increase of population and the extension of settlement unless measures are taken to prevent this tendency. During the last few years, forest fire damage in Canada has been materially reduced owing to favourable weather conditions and improved methods of detecting and fighting forest fires. Credit is also due to the general public for a greater measure of cooperation in the prevention of fires and to the various organizations which have carried on educational campaigns for forest conservation.

With about 600,000 square miles of accessible timber in a growing condition, an average annual increment of 10 to 11 cubic feet per acre would be quite possible under forest management and would cover the present annual average depletion. In view of the destruction of young growth which occurs and the deterioration of the forests and the soil caused by repeated fires and by insect and fungus damage, there is little evidence that this increment is being produced at the present time throughout Canada, although particular areas are producing in excess of this quantity. Extensive reproduction and rate of growth studies, being conducted by the Dominion and Provincial Forest Services indicate that the increment is greater than previously estimated.

The use of substitutes for wood may tend to reduce consumption but this is usually exaggerated as a factor in forest conservation. The increasing scarcity of wood will result in increasing prices which will tend to limit consumption. It is now a profitable investment to plant trees in Canada under certain conditions and the planting and management of forest lands will become increasingly profitable as supplies decrease and prices advance, but before this planting and management can possibly result in forest crops sufficient for our needs we will pass through a period of lean years whose duration and intensity will depend entirely on how soon and how effectively we apply scientific management to our remaining forests.

SUMMARY OF FOREST PRODUCTION, 1932.

As far as value is concerned pulpwood is the most important forest product in Canada with a total of over thirty-six million dollars. It heads the lists of products in this respect in the provinces of Quebec and Nova Scotia. Firewood comes second on the value list with more than thirty million dollars. It is the most valuable forest product in Ontario, New Brunswick, Alberta, Saskatchewan and Prince Edward Island. Logs and bolts, with a total value exceeding eighteen million dollars come third on the list for the Dominion as a whole and first in British Columbia. Poles, hewn railway ties and posts with about a million dollars each come next in order of importance for value. The total value of all these forest products in 1932 was $92,106,252 a decrease of 34.7 percent over the estimated value of $141,123,930 for 1931.

Comparing forest products on the basis of equivalent volume of standing timber we find that firewood heads the list for the Dominion as a whole and comes first in every province but British Columbia. It is the third most important item in the latter province. Pulpwood is the next most important item in the Dominion according to volume coming second in the provinces of Quebec, Ontario, British Columbia and Nova Scotia and third in New Brunswick. Logs and bolts are next on the list for Canada and come first in British Columbia, second in New Brunswick, Alberta, Manitoba and Prince Edward Island and third in Quebec, Ontario, Nova Scotia and Saskatchewan. Hewn ties are next on the list being fairly important in all provinces. Fence posts come second on the list in Saskatchewan and third in Alberta and Manitoba. The other important forest products from a volume standpoint are fence rails, round mining timber, wood for distillation, poles and square timber.

The province of Quebec heads the list for both value and volume of forest production and leads in quantity production of firewood, pulpwood, and fence rails. It comes second on the list of provinces for quantity production of logs and bolts, posts and wood for distillation, and third for hewn ties and poles. Ontario is the second most important province for volume production coming first in wood for distillation and second for firewood, pulpwood, hewn ties, poles and square timber and third for logs, bolts and miscellaneous products. British Columbia heads the lists for logs and bolts, hewn ties, poles and miscellaneous products, comes second for round mining timber and third for pulpwood. New Brunswick heads the list for square timber and Nova Scotia comes third for fence rails, round mining timber and square timber. Alberta is the most important producer of posts and round mining timber in Canada and comes second with regard to fence rails. Saskatchewan comes third on the lists for firewood and posts. In Manitoba, firewood, logs and bolts and posts are the most important items and in Prince Edward Island, firewood, logs and bolts and fence rails.

Under the item "Miscellaneous Products," are included shingle bolts, piling, boom timber, shim blocks, box wood, lath bolts, cribbing, veneer bolts, bark for tanning, kneew and futtocks, stave bolts, hop and hoop poles, masts and spars, Christmas trees and all other unspecified, unmanufactured, forest products.

An attempt is being made to estimate the importance of the employment provided annually by logging operations in Canada.

Reports received annually from the more important logging concerns, producing ower a third of Canada's unmanufactured forest products, have been analysed. Experience figures collected by foresters and officials of the larger lumber and pulp and paper concerns have also beem taken into consideration. It is evident from this information that, at a conservative estimate, it requires at least one man-day of labor in logging operations to produce, on an average, half a thousand feet, board measure, of logs, or a cord of pulpwood. Other forest products are produced at approximately the same rate.

Applying these figures to the total production for 1932 in Canada shows that this industry provided the equivalent of a full year's work (300 working days) for at least 60,000 men.

This estimate is based on a full year's work of 300 days. While logging is carried on more or less uniformly throughout the year in British Columbia it is almost entirely seasonal elsewhere in Canada. The average operation in British Columbia may exceed 250 days but in Eastern Canada seldom averages more than 100 days in duration. Operations in British Columbia could be carried on by 8,000 individuals working 250 days in the year but it would require 146,000 men working only a third of the year to get out the material produced from the forests of the East. With no allowance for turnover, which is proportionately high in this industry, employment is provided during the normal logging season for at least 154,000 individuals.

If we make a moderate allowance for the turn-over of labor in the longer, more important operations and take into consideration the enormous number of smaller operators and farmers working in the woods for a comparatively short period we would be quite safe in assuming that logging operations in Canada provide work for a part of the year to at least 200,000 individuals.

The average man-day of logging labor costs about $2.40 which would indicate the equivalent of an annual wage distribution of $43,200,000. While this is a very important consideration from the standpoint of employment a still more important feature is the season during which this payroll is distributed. In British Columbia operations are fairly uniform throughout the year with the maximum in May with 12 percent of the total annual employment. Employment is slightly above the average from February to June but it never falls below five percent in any one month. In Eastern Canada, however, the employment in logging operations comes at a time of the year when employment in other industries is at its lowest ebb. It is above the monthly average from November to March with the maximum of 15 percent in January and the minimum of 4 percent in July and August. The steadying effect of this industry on the employment situation and the fact that it provides a source of income to farmers during the winter season is not always fully appreciated.

It has been estimated from the information at hand that about $95,000,000 was invested in the logging industry in 1932 in the form of logging equipment and improvements to transportation facilities.

Table 1 shows forest production in 1932 giving first under "Total production" the quantities of forest products in the units of measurement commonly used in the industry and in the adjacent column these same quantities converted into their equivalent volume in standing timber. The third column in each case gives the estimated values of these products.

The next three columns under "Home consumption" include similar details for material which was used in Canada in the form in which it was taken from the woods or imported, together with material subjected to some further manufacturing process in Canada before being sold or exported. The third section of the table under "Exportation" shows the details in connection with the exports from Canada of raw or unmanufactured forest products for use or further manufacture in other countries. The final portion of the table gives the details of our imports of raw forest products which are used in Canada in the form in which they are imported or are further manufactured in some Canadian industry.

Out of a total of over 1,882 million cubic feet of standing timber cut in Canada in 1932 about 92.9 per cent was retained in the country for immediate use or as raw material for further manufacture in some Canadian industry, and 7.1 per cent was exported in a more or less unmanufactured form.

Manufactures of commodities whose chief component material is wood or paper depend on the products of the forest as their principal raw material. This group of wood and paper using industries in Canada ranks first among similar groups of industries in capital investment, number of employees, wages and salaries paid and net value of products. In gross value of production they are exceeded only by the manufacturers of vegetable products.

In 1932 the total value of capital invested in the wood and paper group of industries was $954,639,232. The employees numbered 107,834 and were paid$112,372,202 in wages and salaries. The net value of production or value added by manufacture was $227,251,810 and the gross value $369,601,600.

There are a number of other industries in which wood and paper are important raw materials although they are not the principal component materials used and still others in which wood and paper are used indirectly in connection with the manufacture of articles which do not obtain wood or paper as a component part. Practically no form of industrial activity is entirely independent of the use of forest products, directly or indirectly.

The logs and bolts were converted into 1,809,884 M. ft. b.m. of sawn lumber and into other sawmill products with a total value added by manufacture of over fifteen million dollars. Less than ten per cent of the saw logs cut in Canada in 1932 were exported unmanufactured.

Of the sawn lumber manufactured about 37 per cent was exported but a large part of this was planed or matched after leaving the sawmill and considerable value added to it in this way before being exported. The remainder of the lumber sawn was used, in the rough, for structural work in Canada or went into Canadian wood-using industries as the raw material in the manufacture of sash, doors and planing mill products, furniture, vehicles, boxes, etc.

About fifteen per cent of the pulpwood cut was exported before being manufactured into pulp and eighty-five per cent of this exported material was rossed or barked pulpwood whose value was considerably increased by this preparation before exportation. Eighty-six per cent of our total cut of pulpwood was used as the principal raw material in the pulp and paper industry, the most important of all the manufacturing industries in Canada. In pulp-making, the first stage in this industry, the value added to the raw pulpwood by manufacture amounted to over twenty-six million dollars in 1932. Seventeen per cent of this pulp was exported and the remainder was made into paper in Canada with a value added in this stage of the process of over sixty million dollars. The value added by manufacture in the pulp and paper industry as a whole was over eighty-six million dollars. The square timber made in Canada is practically all exported and the wood used for distillation is all consumed in Canada.

The firewood, hewn ties, poles, round mining timber, posts and rails are largely used locally and when exported they are used in the form in which they leave the woods and would not receive any further manufacturing if they were retained in Canada.

The economic loss to Canada involved in the exportation of unmanufactured or incompletely manufactured forest products for further manufacture in other countries is a serious matter but the loss was relatively small in comparison with our total forest production in 1932. The loss was most serious in connection with the exportation of the approximate equivalent of 10,944,000 cubic feet of rough pulpwood, 44,658,000 cubic feet of saw-logs and 348,000 cubic feet of square timber, making a total of 65,950,000 cubic feet of standing timber or less than four per cent of the cut in 1932. The loss involved in this connection is partly offset by the importation into Canada of similar unmanufactured products for use as raw materials in Canadian mills.

A total of 1,757,084,598 cubic feet of home grown and imported forest products valued at $84,460,126 were consumed in Canada in 1932 including wood consumed in the form in which it was taken from the woods and wood used as raw material in Canadian industry. This material forms over ninety-three per cent of our total cut and is tending to increase while the proportion of material exported in the raw or incompletely manufactured state is tending to decrease. Of the total quantity used in Canada less than one per cent is imported.

ANNUAL SUMMARY OF FOREST PRODUCTION
OPERATIONS IN THE WOODS

Table 1. - Forest Production, Home Consumption, Exports and Imports, 1932.

Products	Unit of Measure Used	Converting Factor	TOTAL PRODUCTION			HOME CONSUMPTION		
			Quantity reported or estimated	Equivalent volume in standing timber	Total Value	Quantity reported or estimated	Equivalent volume in standing timber	Total Value
				Cu.ft.	$		Cu. ft.	$
TOTAL	-	-	-	1,882,228,308	92,106,252	-	1,757,084,598	84,460,126
Logs and bolts	M ft.b.m.	219	2,165,781	474,306,039	18,029,759	1,966,187	430,594,953	16,213,731
Pulpwood	Cords	117	4,222,224	494,000,208	36,750,910	3,647,754	426,787,218	32,192,066
Firewood	Cords	95	8,459,322	803,635,590	30,627,632	8,430,132	800,862,540	30,497,687
Hewn ties	Number	12	2,522,647	30,271,764	1,353,664	2,593,692	31,124,304	1,446,149
Square timber	M ft.b.m.	219	1,592	348,648	99,403	282	61,758	15,163
Poles	Number	13	309,619	4,025,047	1,411,209	139,975	1,819,675	812,307
Round mining timber	Cubic feet	1.3	4,471,764	5,813,293	809,700	4,471,764	5,813,293	809,700
Posts	Number	2	14,049,713	28,099,426	990,568	13,645,283	27,290,566	961,318
Wood for distillation	Cords	123	38,189	4,697,247	251,281	38,189	4,697,247	251,281
Fence Rails	Number	3	4,688,606	14,065,818	253,077	4,688,606	14,065,818	253,077
Miscellaneous products	Cords	117	196,284	22,965,228	1,529,049	119,378	13,967,226	1,007,647

ANNUAL SUMMARY OF FOREST PRODUCTION
OPERATIONS IN THE WOODS

Table 1. - Forest Production, Home Consumption, Exports and Imports, 1932. - Con.

Products	Unit of Measure used	Converting Factor	EXPORTATION			IMPORTATION		
			Quantity reported or estimated	Equivalent volume in standing timber	Total Value	Quantity reported or estimated	Equivalent volume in standing timber	Total Value
				Cu. ft.	$		Cu. ft.	$
TOTAL	-	-	-	133,896,924	8,292,139	-	8,753,214	646,013
Logs and bolts	M ft.b.m.	219	203,920	44,658,480	1,896,657	4,326	947,394	80,629
Pulpwood	Cords	117	620,124	72,554,508	4,830,506	45,654	5,341,518	271,662
Firewood	Cords	95	32,645	3,101,275	144,164	3,455	328,225	14,219
Hewn ties	Number	12	-	-	-	71,045	852,540	92,485
Square timber	M ft.b.m.	219	1,592	348,648	99,403	282	61,758	15,163
Poles	Number	13	173,262	2,252,406	614,511	3,618	47,034	15,609
Round mining timber	Cubic Feet	1.3	-	-	-	-	-	-
Posts	Number	2	408,265	816,530	30,093	3,835	7,670	843
Wood for distillation	Cords	123	-	-	-	-	-	-
Fence rails	Number	3	-	-	-	-	-	-
Miscellaneous products	Cords	117	86,881	10,165,077	676,805	9,975	1,167,075	155,403

ANNUAL SUMMARY OF FOREST PRODUCTION
OPERATIONS IN THE WOODS

Table 2. - Forest Production, by Provinces, 1932.

Provinces	Equivalent volume in standing timber		Total Value	
	1931	1932	1931	1932
	Cubic feet	Cubic feet	$	$
CANADA	2,306,143,706	1,882,228,308	141,123,930	92,106,252
Prince Edward Island	10,650,577	12,036,582	507,593	504,017
Nova Scotia	121,560,040	101,098,687	7,414,836	5,800,093
New Brunswick	154,368,599	99,805,603	9,982,658	6,065,709
Quebec	646,317,624	706,101,550	45,344,956	34,250,349
Ontario	604,631,925	401,862,673	39,675,042	22,969,973
Manitoba	84,935,609	52,261,887	4,170,223	1,637,442
Saskatchewan	101,603,910	71,917,795	4,598,193	1,813,742
Alberta	102,251,513	90,221,411	4,916,683	2,604,952
British Columbia	479,823,909	346,922,120	24,513,746	16,459,975

Table 3. - Value of Forest Production, by Kinds, 1928 to 1932.

Products	1928	1929	1930	1931	1932
	$	$	$	$	$
TOTAL	212,950,799	219,570,129	206,853,494	141,123,930	92,106,252
Logs and bolts	76,431,481	79,278,543	75,563,041	32,889,204	18,029,759
Firewood	41,164,270	41,764,507	43,786,064	44,237,948	36,750,910
Pulpwood	74,848,077	76,120,063	67,529,612	51,973,243	30,627,632
Hewn railway ties ...	5,871,724	5,730,423	5,038,899	4,144,169	1,353,664
Square timber	3,772,137	4,179,077	2,945,748	151,114	99,403
Poles	4,934,371	6,677,559	6,733,259	3,057,546	1,411,209
Round mining timber .	998,146	1,028,126	885,343	958,681	809,700
Fence posts	1,506,050	1,674,489	1,585,985	1,388,074	990,568
Wood for distillation	476,726	455,957	335,330	266,080	251,281
Fence rails	463,469	477,569	624,968	454,205	253,077
Miscellaneous products	2,484,348	2,183,816	1,825,245	1,603,666	1,529,049

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DOMINION BUREAU OF STATISTICS

NEWS LETTER

NO. 32 FOR RELEASE JULY 13, 1929.

THE LUMBER INDUSTRY IN CANADA

The latest available estimate places Canada's forest resources at 224,304 million cubic feet of standing timber which is capable of yielding 424,637 million feet board measure of sawn lumber and 1,121,993 thousand cords of pulpwood, ties, poles and other smaller materials. With the population of the Dominion estimated at 9,519,000 in 1927 this represents a per capita supply of 23,564 cubic feet of standing timber to provide an annual per capita consumption for use alone of over 269 cubic feet.

A total depletion of 4,400,000,000 cubic feet per annum does not necessarily imply that our total resources of 224,304,000,000 cubic feet are reduced by that amount every year and that the supply will therefore be exhausted in fifty years. Estimating the probable duration of our supply of forest products is not a matter of simple arithmetic. The rate of utilization is far from constant. It tends to increase with the discovery of new uses for wood, the increase in our population and the increase in the demand for forest products from other countries whose supplies have been reduced to a greater extent than our own. The rate of destruction from fires and other agencies is also very uncertain but tends to increase with the increase of population and the extension of settlement unless measures are taken to prevent this tendency.

On the other hand there is a steady increase in volume taking place in all healthy stands of timber due to annual growth. By the application of scientific forest management this annual growth can be stimulated and could be made to take place over our entire area of potential forest land. If all the land in Canada which is better suited for the growing of timber than for any other purpose were under intensive forest management on a sustained yield basis it would furnish enough timber and forest products annually in perpetuity to supply the needs of a much larger population than we have at present with a sufficient surplus for profitable exportation.

There is reason to believe that in time the loss due to forest fires will be practically eliminated once the general public can be made to realize the necessity of precaution, as ninety per cent of forest fires are due to human carelessness. Scientific methods of controlling insect and fungus damage are being rapidly developed and in time the depletion will consist almost entirely of material cut for use.

The use of substitutes for wood may tend to reduce consumption but this is usually exaggerated as a factor in forest conservation. The increasing scarcity of wood will result in increasing prices which will tend to limit consumption. It is now a profitable investment to plant trees in Canada under certain conditions and the planting and management of forest lands will become increasingly profitable as supplies decrease and prices advance, but before this planting and management can possibly result in forest crops sufficient for our needs we will pass through a period of lean years whose duration and intensity will depend entirely on how soon and how efficiently we apply scientific management to our existing forests.

The final printed report on the lumber industry in Canada for the calendar year 1927 has just been issued by the Forest Products Branch of the Dominion Bureau of Statistics and may be secured on application to Ottawa. The report is not only of interest to the trade but will be found of value to forestry students and those interested in forest conservation. While general statistics concerning the industry have already been issued in a preliminary report the details are made available for the first time.

The report shows a decrease of about two percent in the total cut of sawn lumber in Canada from 1926 to 1927 with decreases in Ontario, Quebec and New Brunswick and increases in British Columbia and all the other provinces. The exportation of lumber decreased and the importation increased during the same period.