CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

FORESTRY BRANCH

SUMMARY

OF

FOREST PRODUCTION

OPERATIONS IN THE WOODS

IN

CANADA

1933

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SUMMARY OF FOREST PRODUCTION, 1933.

Ottawa, March, 1935.- An estimate of the total forest production of Canada for 1933 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 1933 involved the cutting of 2,027,713,767 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 1933 was considerably more than 2,900,000,000 cubic feet.

The latest available estimate places Canada's forest resources at 266,844 million cubic feet of standing timber which is capable of yielding 448,355 million feet board measure of sawn lumber and 1,521,938 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 266,844,000,000 cubic feet were reduced by that amount every year and that the supply would therefore be exhausted in about 89 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.

As far as value is concerned pulpwood is the most important forest product in Canada with a total of over thirty-three million dollars. It heads the lists of products in this respect in the province of Quebec. Firewood comes second on the value list with more than thirty-one million dollars. It is the most valuable forest product in Ontario, New Brunswick, Manitoba, Alberta, Saskatchewan, Nova Scotia and Prince Edward Island. Logs and bolts, with a total value exceeding twenty-three million dollars come third on the list for the Dominion as a whole and first in British Columbia. Hewn railway ties, posts and round mining timber come next in order of importance for value. The total value of all these forest products in 1933 was $93,773,142, an increase of 1.8 per cent over the estimated value of $92,106,252 for 1932.

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 Quebec and British Columbia. It is the second most important item in Quebec and third in British Columbia. Pulpwood is the next most important item in the Dominion according to volume coming first in the province of Quebec and second in Ontario, British Columbia and New Brunswick and third in Nova Scotia. Logs and bolts are next on the list for Canada and come first in British Columbia, second in Nova Scotia, Alberta, Manitoba and Prince Edward Island and third in Quebec, Ontario, New Brunswick 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 and poles.

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 hewn ties and wood for distillation, second for firewood, pulpwood, and poles and third for logs, bolts, round mining timber and miscellaneous products. British Columbia heads the lists for logs and bolts, poles and miscellaneous products, comes second for hewn ties and third for pulpwood. In New Brunswick firewood, pulpwood, and logs are the most important items. Nova Scotia comes second for round mining timber and miscellaneous products and third for rails. 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 bolts for the manufacture of shingles, lath, veneer, boxes, handles, staves, heading, hoops and hubs; blocks for the manufacture of lasts and ten pins; boom timber, piling, cribbing, masts, spars, knees and futtocks, hop and hoop poles, Christmas trees and tan bark.

Reports received annually from the more important logging concerns, producing over a third of Canada's unmanufactured forest products show 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 1933 in Canada shows that this industry provided the equivalent of a full year's work (300 working days) for at least 65,000 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 9,800 individuals working 250 days in the year but it would require 152,500 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 throughout Canada for at least 166,000 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 215,000 individuals.

The average man-day of logging labor costs about $2.40 which would indicate the equivalent of an annual wage distribution of $46,800,000. 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 April and May. Employment is slightly above the average from March to June but it never falls much below the average 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 in January and the minimum in 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 $112,000,000 was invested in the logging industry in 1933 in the form of logging equipment and improvements, to transportation facilities.

Table 1 shows forest production in 1933 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 2,027 million cubic feet of standing timber cut in Canada in 1933 about 91.9 per cent was retained in the country for immediate use or as raw material for further manufacture in some Canadian industry, and 8.1 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 number of establishments, capital investment, 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 1933 the total value of capital invested in the wood and paper group of industries was $393,309,680. The employees numbered 105,471 and were paid $102,500,377 in wages and salaries. The net value of production or value added by manufacture was $207,175,377 and the gross value $342,155,077.

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 contain 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 cut in 1933 were converted into 1,957,989 M. ft. b.m. of sawn lumber and into other sawmill products with a total value added by manufacture of over sixteen million dollars. Less than twelve per cent of the saw logs cut in Canada in 1933 were exported unmanufactured.

Of the sawn lumber manufactured about 52 per cent was exported but a large part of this was planed or matched after being sawn 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-three per cent of this exported material was rossed or barked pulpwood whose value was considerably increased by this preparation before exportation. Eighty-five 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-eight million dollars in 1933. Twenty 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 forty-seven million dollars. The value added by manufacture in the pulp and paper industry as a whole was over seventy-five million dollars.

The wood cut for distillation and charcoal burning 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 1933. The loss was most serious in connection with the exportation of the approximate equivalent of 13,944,000 cubic feet of rough pulpwood, 62,026,000 cubic feet of saw-logs and 300,000 cubic feet of square timber, making a total of 76,270,000 cubic feet of standing timber or less than four per cent of the cut in 1933. 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 1,863,093,957 cubic feet of home grown and imported forest products valued at $85,051,302 was consumed in Canada in 1933 including wood used in the form in which it was taken from the woods and wood used as raw material in Canadian industry. This material forms about ninety-two per cent of our total cut. Of the total quantity used in Canada less than one per cent is imported.

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Table 1.- Forest Production, Home Consumption, Exports and Imports, 1934.

Products	Unit of measurement 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	-	-	-	2,027,713,767	93,773,142	-	1,870,128,670	85,592,095
Logs and bolts	M ft.b.m.	219	2,450,798	536,724,762	23,158,381	2,180,784	477,591,696	20,689,890
Pulpwood	cords	117	4,746,382	555,326,694	33,213,973	4,044,376	473,250,492	28,609,247
Firewood	cords	95	8,606,649	817,631,655	31,141,104	8,572,543	814,391,585	30,995,691
Hewn ties	number	12	2,708,413	32,500,956	1,370,750	2,757,305	33,087,660	1,446,928
Poles	number	13	264,743	3,441,659	963,951	102,033	1,326,429	485,839
Round mining timber	Cubic feet	1.3	4,638,061	6,029,479	841,982	4,638,061	6,029,479	841,982
Posts	number	2	14,037,948	28,075,896	969,291	13,532,501	27,065,002	935,761
Wood for distillation	cords	123	48,821	6,004,983	342,107	48,821	6,004,983	342,107
Fence rails	number	3	4,698,978	14,096,934	215,521	4,698,978	14,096,934	215,521
Miscellaneous products	cords	117	238,297	27,880,749	1,556,082	147,730	17,284,410	1,029,129

ANNUAL SUMMARY OF FOREST PRODUCTION

OPERATIONS IN THE WOODS

Table 1.- Forest Production, Home Consumption, Exports and Imports, 1934.[3] - Concl'd.

Products	Unit of measurement 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	-	-	-	164,619,810	8,721,840	-	7,034,713	540,793
Logs and bolts	M ft.b.m.	219	283,225	62,026,275	2,691,140	13,211	2,893,209	222,649
Pulpwood	cords	117	718,555	84,070,935	4,696,459	17,049	1,994,733	91,733
Firewood	cords	95	37,735	3,584,825	156,087	3,629	344,755	10,674
Hewn ties	number	12	-	-	-	48,892	586,704	76,178
Poles	number	13	166,203	2,160,639	487,733	3,493	45,409	9,621
Round mining timber .	cubic feet	1.3	-	-	-	-	-	-
Posts	number	2	513,062	1,026,124	34,576	7,615	15,230	1,046
Wood for distillation	cords	123	-	-	-	-	-	-
Fence rails	number	3	-	-	-	-	-	-
Miscellaneous products	cords	117	100,436	11,751,012	655,845	9,869	1,154,673	128,892

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Table 2.- Forest Production by Provinces, 1932 and 1933.

Provinces	Equivalent volume in standing timber		Total value	
	1932	1933	1932	1933
	cu.ft.	cu.ft.	$	$
CANADA	1,882,228,308	2,027,713,767	92,106,252	93,773,142
Prince Edward Island	12,036,582	12,078,329	504,017	501,178
Nova Scotia	101,098,687	101,733,997	5,800,093	4,970,096
New Brunswick	99,805,603	115,054,855	6,065,709	6,197,630
Quebec	706,101,550	717,358,482	34,250,349	34,813,053
Ontario	401,862,673	440,117,857	22,969,973	23,298,854
Manitoba	52,261,887	53,115,686	1,637,442	1,695,545
Saskatchewan	71,917,795	73,043,333	1,813,742	1,818,869
Alberta	90,221,411	91,550,496	2,604,952	2,483,713
British Columbia	346,922,120	423,660,732	16,459,975	17,994,204

Table 3.- Value of Forest Products, by Kinds, 1929 to 1933.

Products	1929	1930	1931	1932	1933
	$	$	$	$	$
TOTAL	219,570,129	206,853,494	141,123,930	92,106,252	93,773,142
Logs and bolts	79,278,543	75,563,041	32,889,204	18,029,759	23,158,381
Firewood	41,764,507	43,786,064	44,237,948	36,750,910	33,213,953
Pulpwood	76,120,063	67,529,612	51,973,243	30,627,632	31,141,104
Hewn railway ties	5,730,423	5,038,899	4,144,169	1,353,664	1,370,750
Square timber	4,179,077	2,945,748	151,114	99,403	1/
Poles	6,677,559	6,733,259	3,057,546	1,411,209	963,951
Round mining timber	1,028,126	885,343	958,681	809,700	841,982
Fence posts	1,674,489	1,585,985	1,388,074	990,568	969,291
Wood for distillation ..	455,957	335,330	266,080	251,281	342,107
Fence rails	477,569	624,968	454,205	253,077	215,521
Miscellaneous products .	2,183,816	1,825,245	1,603,666	1,529,049	1,556,082

1/ Included with "miscellaneous products" in 1933.