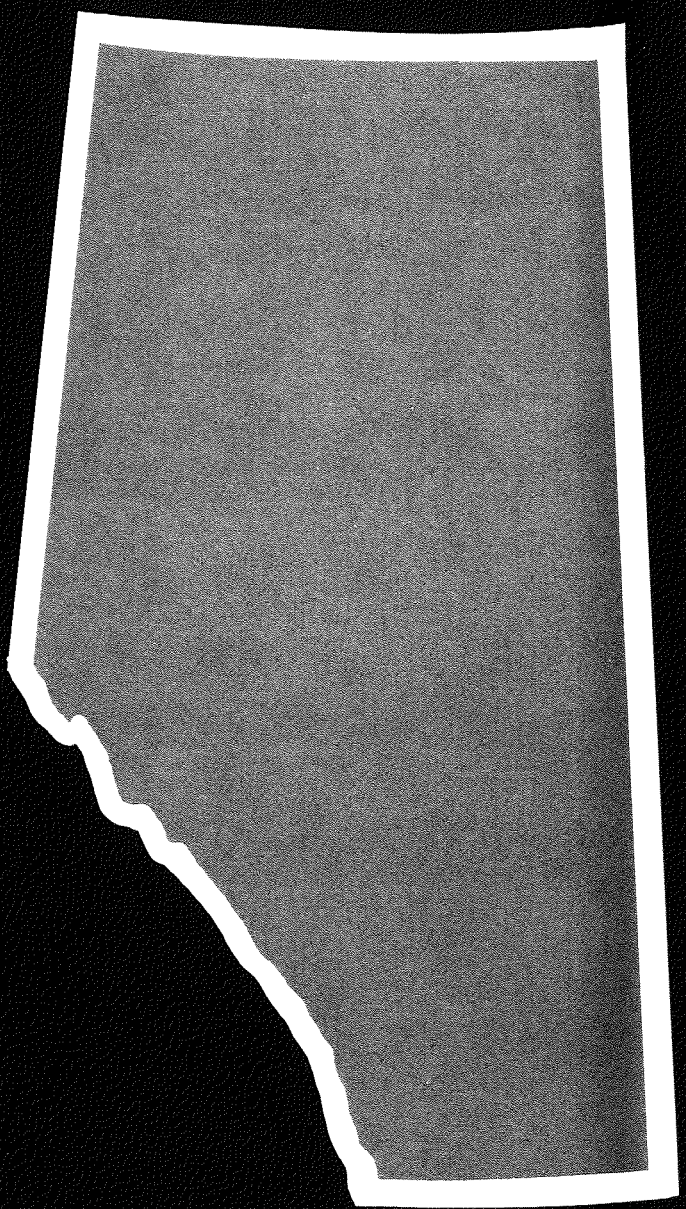
The Economic Importance of Sawmilling and Other Primary Wood-Using Industries in Alberta, 1972



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CHAPTER I

PURPOSE AND APPROACH

This study was requested by the Regional Program Advisory Committee of the Northern Forest Research Centre and the Alberta Department of Lands and Forests. Its purpose was to better understand the size of Alberta's forest industry and its economic impact on the provincial economy. Indicators used to assess this impact included employment, salaries and wages, sales, products, and value added.

THE PROBLEM

Most of Alberta's forest resources are controlled by the provincial government. Their responsibility includes management of the timber, forest land, wildlife, and water resources over most of the province. It also includes promoting the development of new forest industry and managing the forest resources to yield increased net benefits to the provincial economy. Because of its expanding role in the economic life of the province, the government needs new information on the economic impacts of forest industry and resource development to make decisions on optimum resource allocation, use, and management. Forest resources are limited. Should they be developed? If they are, who should receive the benefits? At what rate should the forest industry expand? Answers to these and other questions depend largely on the importance of the forest industry to the welfare of Alberta residents. At present reliable information on the economic impacts of the forest industry on Alberta's economy is not available. Data on the number of sawmills, total roundwood harvested,

and size of labor force are hardly sufficient for an in-depth assessment of forest-based industry. Thus the problematic situation centers on a scarcity of relevant quantitative information on the forest industry's economic impact.

The problem, as defined by the study's Ad Hoc Steering Committee, was:

> To provide a comprehensive statistical description of some major economic impacts of forestry and forest-based industry to the prairie and local economies for the purpose of more effective utilization and management of forest resources.[1]

OBJECTIVES OF THE STUDY

For Alberta, the objectives of the study were to:

1. describe the land and forest resources of the province
2. identify and describe some of the major product flows from the forest to the consumer including the raw wood requirements of selected product groups
3. identify and estimate the major economic benefits and impacts of the forest resource and its utilization to the province
4. indicate briefly some of the alternative (competitive and complementary) uses of the forest in addition to the production of wood fiber.

The report deals with the first three objectives. As such it provides a quantitative perspective of the contribution of sawmills and planing mills, pulp and paper mills, and wood preserving plants to Alberta's economy. Measuring this contribution requires the selection of specific items or statistics as economic parameters.

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[1] Minutes of the first inter-government Ad Hoc Steering Committee meeting held on July 26, 1972.

SELECTED ECONOMIC IMPACT VARIABLES

Economic impact parameters or variables must be quantifiable and should reflect the more important economic goals of the province. Although such goals are not well defined we have assumed them to include a high and sustained level of full-time employment, increased personal incomes, reasonable price stability, and significant export earnings. Variables that measure these effects can also be examined for their direct and indirect components. For example, when salaries and wages earned by sawmill employees are spent, they create additional jobs and income for people working in other sectors of the economy. Demand for foodstuffs, clothing, entertainment, medical care, and transportation, to name a few, depends in large part on the level of basic employment and earnings in the economy. This indirect or multiplier effect may include other secondary processing establishments such as furniture factories.

The selection of economic variables traditionally includes salaries and wages, value added, and number of employees. Because no single item clearly measures all the economic and social impacts policy-makers are concerned with, each study must identify those factors which best meet its objectives. In this report emphasis was placed on describing the array of inputs used in the primary wood-using industries. Within this natural transformation process, special emphasis was placed on labor inputs, wood inputs, and types and quantities of products produced.

Seasonality of labor, number of salaried and hourly workers, and native participation in the industry were of particular concern.

Similarly, documenting the quantities of board, dimension stock, and timbers produced, as well as their markets and mode of transportation, was necessary to indicate the importance of Alberta lumber production to Alberta consumers.

CLASSIFICATION OF PRIMARY WOOD-USING INDUSTRIES

This report uses specific meanings for the terms "forest products industries" and "forest industry" or "primary wood-using industry". Forest products industry includes all industries classified under Major Groups 8 and 10, Division 5 (Manufacturing Industries) of the Standard Industrial Classification Manual (Statistics Canada, 1970). A list of these industries is given in Appendix G. Note that Logging [Major Group 1, Division 2 (Forestry)] is not included.

The term forest industry (primary wood-using industry) has a more restricted definition in the context of the Northern Forest Research Centre (N.F.R.C.) Wood Industry Survey, 1972. It includes only those firms using roundwood or wood chips in their manufacturing processes. Data for the logging industry [Major Group 1, Division 2 (Forestry)] were included where available and applicable. Primary wood-using industries included in the N.F.R.C. Wood Industry Survey are listed in Table 1. So that there would be confidentiality of data for individual firms, asphalt roofing manufacturers and fiberboard plants were combined with the pulp mills for purposes of analysis. Only those asphalt roofing manufacturers utilizing roundwood or wood chips were included.

Table 1. ALBERTA N.F.R.C. WOOD INDUSTRY SURVEY, 1972

Industry	S.I.C. Code
FORESTRY	
Logging	031
WOOD INDUSTRIES	
Sawmills and Planing Mills (except Shingle Mills)	2513
Wood Preservation Industry	2591
Veneer and Plywood Mills	252
PAPER AND ALLIED INDUSTRIES	
Pulp and Paper Mills	271
Asphalt Roofing Manufacturers	272

SOURCE: Appendix G

SAMPLING PROCEDURES AND SURVEY TECHNIQUES

A lack of existing detailed data on the economic variables being considered necessitated a survey of Alberta's primary wood-using industry.[2] One of the early recommendations of the Ad Hoc Steering Committee was that this study should go beyond the information provided by the Forestry Statistics Section of the Manufacturing and Primary Industries Division of Statistics Canada. This desire for a detailed analysis of the forest industry required a complex questionnaire which in turn required enumeration by personal interview.

[2] Design of questionnaires and data requirements were discussed and cleared through Mr. N. Hartgerink of the Forestry Statistics Section of the Manufacturing and Primary Industries Division of Statistics Canada.

The sampling frame (universe of primary wood-using firms) was constructed from the *Directory of Primary Wood-Using Industries in Alberta, Saskatchewan and Manitoba, 1972* (Teskey and Smyth, 1973). Intensity of sampling and success rates in surveying are indicated in Table 2. All large sawmills, pulp and paper mills (including asphalt roofing manufacturers), independent planing mills, veneer and plywood mills, and wood preservation plants were surveyed. Throughout this report large sawmills are classified as those operations whose production in 1972 was equal to or in excess of 11 799 m^3 (5000 Mfbm). Sawmills whose production in 1972 was less than 11 799 m^3 (5000 Mfbm) comprise the small sawmill category referred to in this report. This group of 185 mills required random sampling, which was done with replacement using random number tables. Repeat draws of a sample firm were ignored, thus providing a sample equivalent to one drawn without replacement. Lists of 65 mills (50% of the Class 1 mills) and 30 mills (55% of the Class 2 mills) were constructed, and of these 63 and 30 mills respectively were surveyed. These surveys were used to estimate totals for all parameters under consideration.

As indicated in Table 2 coverage was 100% for the wood preserving, pulp and paper, veneer and plywood, planing and large sawmill operations. The completion rates for the small sawmill classes were 97% and 100% respectively for the Class 1 and Class 2 mills. Sample size was determined by budget constraints and precision of data required. Location of firms surveyed is illustrated in Map 1.

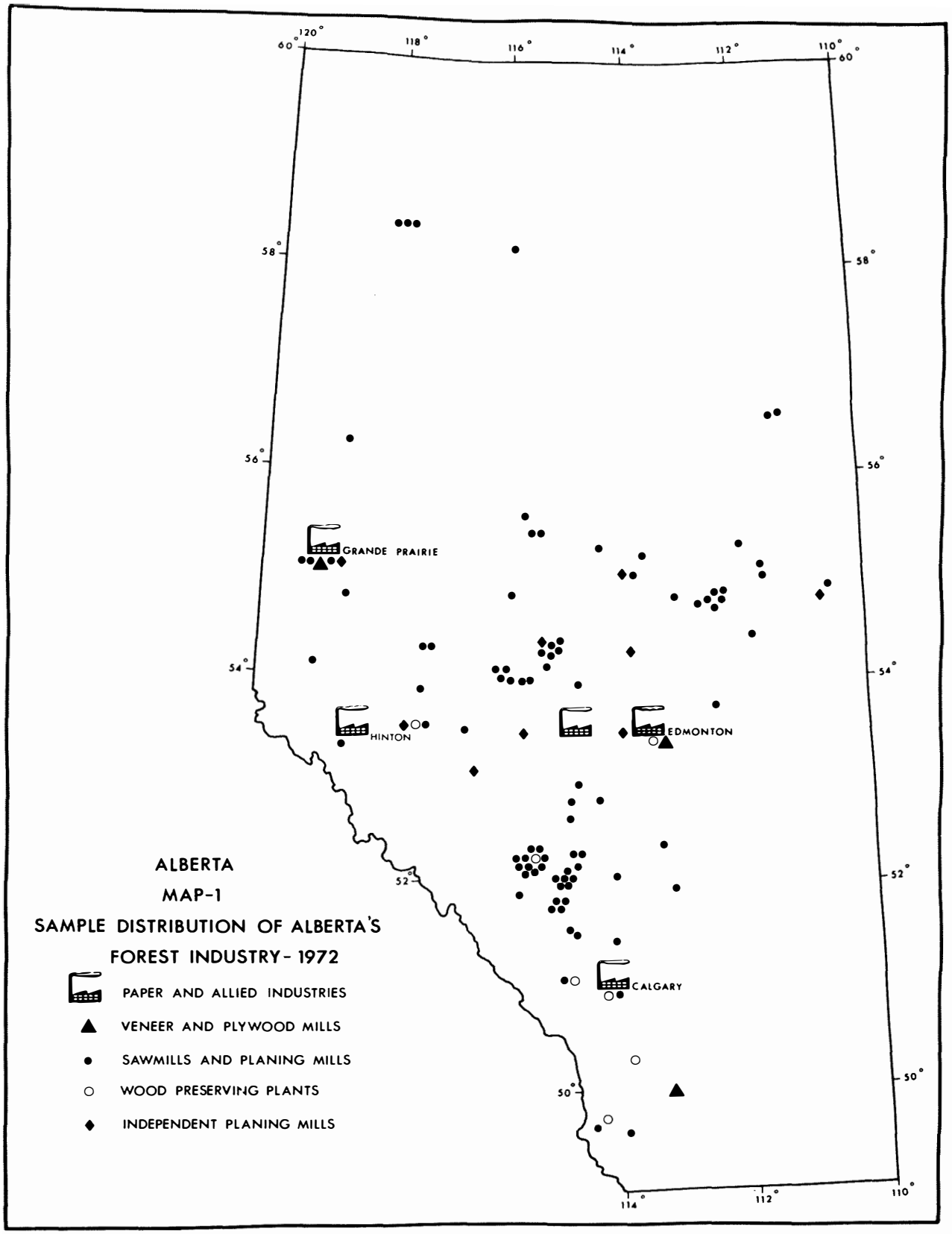
Table 2. SAMPLE SURVEY OF FOREST INDUSTRIES IN ALBERTA, 1972

Industry Group and Strata	Sampling Frame No.	Sample Size No.	Surveys Conducted No.	Completion Rate %
Paper and Allied Industries	4	4	4	100
Veneer and Plywood Mills	3	3	3	100
Wood Preservation Industry	7	7	7	100
Sawmills and Planing Mills by Strata				
Class 1 < 2 360 m^3 (<1 000 Mfbm)	130	65	63[1]	97
Class 2 2 360-11 796 m^3 (1 000-4 999 Mfbm)	55	30	30	100
Class 3 11 799-23 595 m^3 (5 000-9 999 Mfbm)	9	9	9	100
Class 4 23 597-35 394 m^3 (10 000-14 999 Mfbm)	5	5	5	100
Class 5 35 396-47 195 m^3 (15 000-20 000 Mfbm)	6	6	6	100
Class 6 ≥ 47 195 m^3 (≥ 20 000 Mfbm)	8	8	8	100
Independent Planing Mills[2]	9	9	9	100
TOTAL	236	146	144	

[1] Two respondents were not surveyed. These respondents either refused to cooperate for various reasons or could not be located.

[2] These mills purchased rough sawn lumber on the open market and from sawmills under contract. In addition to planing rough lumber some mills resawed larger material into smaller products before planing.

SOURCE: N.F.R.C. Wood Industry Survey, 1972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HINTON
EDMONTON
CALGARY
ALBERTA
MAP-1
SAMPLE DISTRIBUTION OF ALBERTA'S
FOREST INDUSTRY - 1972
PAPER AND ALLIED INDUSTRIES
VENEER AND PLYWOOD MILLS
SAWMILLS AND PLANING MILLS
WOOD PRESERVING PLANTS
INDEPENDENT PLANING MILLS

Interviewing commenced in May 1973 after questionnaires had been developed, field tested, and modified.[3] Early returns were monitored to determine if any problems existed with the questionnaires, but none were found. All questionnaires were given a preliminary audit for internal consistency and accuracy. Initial interviewing was completed by March 1974, with late returns and resolution of data inconsistencies completed by February 1975.

Interviewers consisted of contractors to and personnel from the Northern Forest Research Centre. All were given instruction on interpretation of the questionnaire, methods of conducting a proper interview, and the reasons for obtaining data as specified in the forms. This was followed by field training sessions to assure uniformity in interviewing method among enumerators. In general enumerators were well received by industry personnel. Alberta Forest Service personnel were helpful in locating the more remote establishments to be interviewed.

ANALYTICAL PROCEDURES

Analysis of questionnaires consisted of two phases after the preliminary audit following the interview. First each questionnaire was subjected to a detailed and comprehensive audit for internal consistency. Where inconsistencies were revealed, call-backs (either in person or by telephone) were made in an effort to resolve them. In some instances important additional information was collected. Secondly,

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[3] Copies of the questionnaires are available upon request.

after individual questionnaires were audited group totals[4] and summaries of data for all industry groups were compiled. Many of the tables appearing in the appendixes were constructed from these summaries.

Data were collected in Canadian units, requiring conversion to metric units before publication in keeping with Canadian Forestry Service policy.[5] Metric conversion was carried out on data in the appendixes at the most disaggregated level. Totals and subtotals were summed after conversion and not converted directly into metric equivalents.

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[4] Except where samples were 100% of the universe, estimates of population parameters were made by expanding the sample statistics in the same proportion as thesample size was of the universe.

[5] See Appendix A for the conversion factors employed throughout this report.

CHAPTER II

THE RELATIVE IMPORTANCE OF PRIMARY WOOD-USING INDUSTRIES IN ALBERTA'S ECONOMY

FOREST INDUSTRY DEVELOPMENT IN ALBERTA

Historically, the area that is now Alberta was controlled by the Hudson's Bay Company from 1670 to 1869, when it was purchased by the Dominion of Canada (Putnam, 1960). In 1905 (Hanson, 1974) the Province of Alberta was formed, but it did not assume control of natural resources until 1930. The Dominion Forest Service managed the forests until that time, and many of its personnel transferred to the provincial government when control of the forest was shifted to the province.

Until the Canadian Pacific Railway came to Alberta in 1885 the fur trade was the basis of economic activity, and had been for 200 years. Railroad construction and settlement of the prairies created a demand for railway ties, timbers, and lumber. Sawmilling grew rapidly from 1900 until the 1930's. Because of major markets in Calgary and Edmonton sawmilling was concentrated near these centers. Logs cut in the Bow and Kananaskis river valleys were floated down river to sawmills in Calgary, while logging operations in the Edson area supplied Edmonton. During the 30's and 40's considerable logging was also done in the Peace River and Athabasca River districts (Putnam, 1960).

In 1954 the first large kraft pulp mill was opened at Hinton (North Western Pulp and Power Company). Since then a few large sawmills have been built which cater primarily to the export market in the United States. During the same period plywood manufacturing, fiberboard, and

pressure-treating industries also developed. In 1973 a second large kraft pulp mill (Procter and Gamble Cellulose Ltd.) started production at Grande Prairie.

These new developments increased demand for roundwood (Table 29, Chapter 3), particularly sawtimber. From 1960-61 to 1971-72 total roundwood production from provincial crown lands almost doubled. During this period sawtimber production accounted for most of the increase, and there was a slight increase in pulpwood production.

ALBERTA'S FOREST PRODUCTS INDUSTRIES, A PERSPECTIVE

The steady growth of Alberta's forest products industries during the 1960's has increased job opportunities and income in the province. It has also raised new conflicts in integrated resource management and more intensive forest management. But where do the forest products industries fit in the Alberta economy? How important are they in the Canadian context? These and related questions confront policy-makers and the answers help determine and explain the priority which forestry programs receive.

In 1971 Canada's forest products industries employed 258 840 people, paid $2.1 billion in salaries and wages, and produced almost $8.0 billion in sales (Environment Canada, 1974). With a value added of $3.5 billion, or 44% of sales, this output generated nearly $3.1 billion in foreign exchange. These exports of wood, wood products, and paper represented 18% of all Canadian exports. Since Canada imports very little of these products, the forestry sector, more than most people realize, is very important as a net earner of foreign exchange.

In spite of its absolute national importance, forest products industries' real domestic product has grown at a relatively slow rate since 1961, particularly logging and the paper and allied industry (Table 3). For example, with the exception of agriculture and fishing and trapping, the logging industry (forestry) had the smallest increase in real domestic product. Pulp and paper grew slightly faster but was still in the bottom half of the commodity group. On the other hand, the wood industries performed much better, increasing output by 71 points from 1961-1971 and an additional 18 points in both 1972 and 1973. This performance placed this group above the national average which had an index of 175, 185, and 197 in 1971, 1972, and 1973, respectively. During the 60's the sawmill and planing mill industry recorded the highest real growth rates of any major primary wood-using industry. It even outperformed service-producing industry groups.

In Alberta logging and the forest products industries combined accounted for an insignificant portion of the province's Gross Domestic Product (G.D.P.). In 1972 one estimate of Alberta's GDP placed it at $8546 million based on value added, with a split of about 46% to goods-producing industries and 54% to service industries (Figure 1). The combined value added of logging, wood industries, and paper and allied industries at $118 million was only 1.4% of the province's GDP in 1972. It was 2.7% of the value added by the goods-producing sector or 12.5% of the manufacturing industry group.

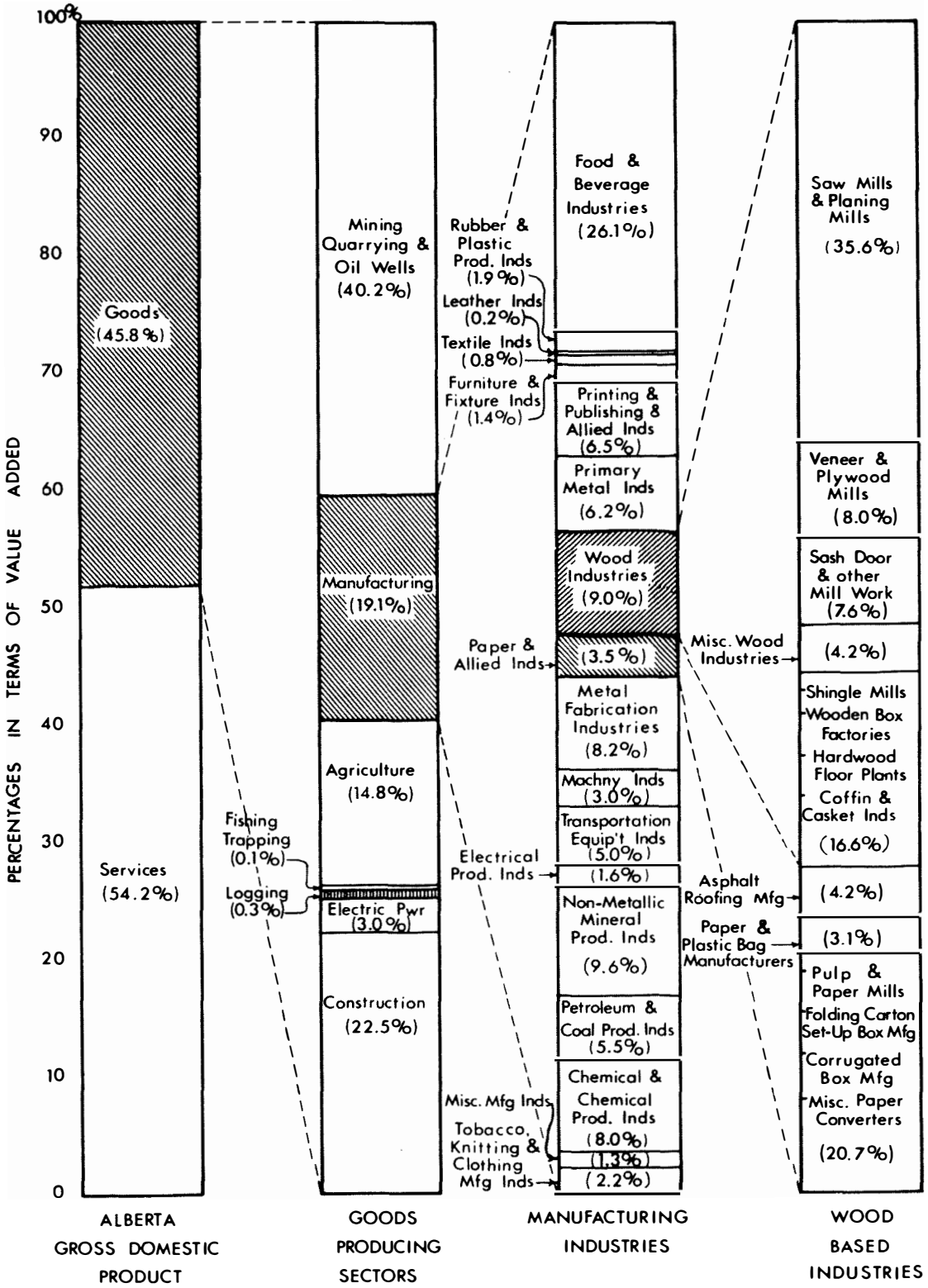
Table 3. INDEXES OF REAL DOMESTIC PRODUCT BY INDUSTRY FOR CANADA, 1971, 1972, AND 1973

SIC		1971	1972	1973
1-11	Real domestic product[1]	175.4	184.5	197.2
1-6, 7:04	Goods-producing industries	177.5	185.8	200.4
1	Agriculture	152.7	140.8	142.3
2	Forestry	129.7	129.0	158.0
3	Fishing and trapping	110.0	102.4	102.7
4	Mines (includes milling), quarries and oil wells	183.1	192.2	210.5
5	Manufacturing	183.3	195.8	211.9
5:10	Paper and Allied Industries	140.5	152.7	160.1
5:271	Pulp and Paper Mills	134.3	146.4	153.9
5:08	Wood Industries	170.7	188.9	207.0
5:251	Sawmills and planing mills	183.2	202.4	223.5
5:252	Veneer and plywood mills	167.4	185.6	200.7
6	Construction	165.6	166.5	177.9
7:04	Electric power, gas, and water utilities	208.2	229.4	247.2
7:01-:03, 8-11	Service-producing industries	173.6	183.6	194.7
7:01-:03	Transportation, storage and communication	184.3	198.8	216.7
8	Trade	170.6	182.6	192.5
9	Finance, insurance and real estate	176.9	186.0	197.4
10	Community, business and personal service industries	187.6	194.8	202.7
11	Public administration and defence	132.4	138.9	148.9

[1] Base year was 1961 = 100. These indexes have been adjusted for price changes and represent industry changes in real production.

SOURCE: Statistics Canada. Indexes of Real Domestic Product by Industry. Cat. No. 61-005, Monthly, June 1974 Supplement.

FIG. 1. The Relative Position of ALBERTA'S FOREST PRODUCTS INDUSTRIES in 1972



SOURCE: Tables 4, 6, & 12.

Of Alberta's goods-producing industries, mining, quarrying, oil, and gas dominated with over 40% of value added (Table 4). Forestry (logging) at 0.3% was insignificant. Unlike Saskatchewan, Alberta's economy is not as heavily dependent on a single commodity although the mining and oil group has taken over as the leading industry in the last few years.

Table 4. CENSUS VALUE ADDED IN GOODS-PRODUCING INDUSTRIES AND RELATIVE SHARES, ALBERTA, 1971 AND 1972

Goods-producing industries	Census value added 1971 $'000	1971 %	1972 $'000	1972 %
Agriculture	564 022	14.7	655 782	14.8
Fisheries	729	-	727	-
Trapping	1 785	0.1	3 347	0.1
Forestry[1] (logging)	10 006	0.3	12 234	0.3
Mining, quarrying, and Oil and Gas Wells	1 479 769	38.7	1 787 838	40.2
Electric Power	118 538	3.1	131 894	3.0
Construction	895 412	23.4	998 632	22.5
Manufacturing[2]	755 246	19.7	849 473	19.1
Total Goods-Producing Industries	3 825 507	100.0	4 439 927	100.0
Corresponding totals for Canada	38 921 156		43 363 889	

[1] Forestry data excludes stumpage.

[2] Includes the Wood Industries group (SIC 5:08 - sawmills, planing mills, plywood mills, etc.) and the Paper and Allied Industries group (SIC 5:10 - pulp and paper mills, etc.). Consult the Standard Industrial Classification (S.I.C.) manual for a complete listing of industries included.

SOURCE: Statistics Canada. Survey of Production. Catalogue 61-202, annual, Ottawa, 1972.

A detailed examination of Alberta's manufacturing industry groups using five major statistics for comparative purposes reveals several significant features (Tables 5, 6, 7, 8, and 9). The five criteria used in the examination were

1. value of shipments of goods of own manufacture
2. value added by manufacturing activity
3. value added on a total activity basis
4. employment on a total activity basis
5. salaries and wages on a total activity basis.

Corresponding national figures are provided in each case as a means of comparing the relative importance of Alberta manufacturing to that of Canada.

Each of the five indicators examined showed that the food and beverage industries dominated Alberta manufacturing. Provincially this group accounted for between 25.7 and 40.7% of the totals for each of the respective indicators. At the national level these industries represented from 11.9 to 18.2%. In the 20 manufacturing industry groups, the wood industries ranked 3rd in all but the employment indicator, where it ranked 2nd. The smaller paper and allied industries group ranked 10th, 10th, 11th, 10th and 10th respectively, in terms of the indicators listed above.

Alberta's manufacturing sector accounted for 4.3% of the Canadian total based on value of shipments (Table 5). Other principal statistics show slightly lower proportions, roughly 3.3% (Tables 6, 7, 8, and 9). Using the same parameters, Alberta's wood industries group

Table 5. VALUE OF SHIPMENTS OF GOODS OF OWN MANUFACTURE OF THE MANUFACTURING INDUSTRIES OF ALBERTA AND CANADA BY INDUSTRY GROUP, 1972

Industry Group	Alberta $'000	Alberta %	Canada $'000	Canada %
Wood Inds.	173 576	7.2	3 084 899	5.5
Paper & Allied Inds.	65 036	2.7	4 414 017	7.9
Sub total	238 612	9.8	7 498 916	13.3
Food & Beverage Inds.	987 809	40.7	10 244 826	18.2
Tobacco Products Inds.	-	-	596 236	1.1
Rubber & Plastic Products Inds.	32 499	1.3	1 317 310	2.3
Leather Inds.	4 493	0.2	443 389	0.8
Textile Inds.	16 731	0.7	1 887 430	3.4
Knitting Mills	X	X	470 083	0.8
Clothing Inds.	X	X	1 644 606	2.9
Furniture & Fixture Inds.	22 158	0.9	958 348	1.7
Printing, Publishing & Allied Inds.	77 140	3.2	1 853 532	3.3
Primary Metal Inds.	154 612	6.4	4 193 421	7.5
Metal Fabricating Inds.	136 082	5.6	3 821 990	6.8
Machinery Inds.	58 935	2.4	2 134 648	3.8
Transportation Equipment Inds.	107 616	4.4	7 747 271	13.8
Electrical Products Inds.	34 526	1.4	3 062 536	5.5
Non-Metallic Mineral Products Inds.	133 719	5.5	1 665 455	3.0
Petroleum & Coal Products Inds.	232 743	9.6	2 441 065	4.3
Chemical & Chemical Products Inds.	136 901	5.6	2 943 118	5.2
Miscellaneous Manufacturing Inds.	19 257	0.8	1 267 828	2.3
Sub total	2 186 650	90.2	48 693 092	86.7
Total all Industry Groups[1]	2 425 262	100.0	56 192 009	100.0

[1] Totals may not add due to rounding.

X Confidential

SOURCE: Statistics Canada. 1972 Annual Census of Manufacturers. (preliminary), Catalogue No. 31-201P, -203P, -204P, -205P, -206P, -207P, -208P, Ottawa, August, 1974.

Table 6. VALUE ADDED BY MANUFACTURING ACTIVITY OF THE MANUFACTURING INDUSTRIES OF ALBERTA AND CANADA BY INDUSTRY GROUP, 1972

Industry Group	Alberta $'000	Alberta %	Canada $'000	Canada %
Wood Inds.	76 446	9.0	1 397 320	5.8
Paper & Allied Inds.	29 736	3.5	1 928 434	7.9
Sub total	106 182	12.5	3 325 754	13.7
Food & Beverage Inds.	221 852	26.1	3 470 445	14.3
Tobacco Products Inds.	-	-	252 091	1.0
Rubber & Plastic Products Inds.	16 460	1.9	719 828	3.0
Leather Inds.	1 868	0.2	214 226	0.9
Textile Inds.	7 196	0.8	836 937	3.4
Knitting Mills	X	X	218 950	0.9
Clothing Inds.	X	X	788 878	3.2
Furniture & Fixture Inds.	11 789	1.4	496 173	2.0
Printing, Publishing & Allied Inds.	55 381	6.5	1 239 417	5.1
Primary Metal Inds.	52 592	6.2	1 917 318	7.9
Metal Fabricating Inds.	69 977	8.2	1 962 345	8.1
Machinery Inds.	25 601	3.0	996 776	4.1
Transportation Equipment Inds.	42 864	5.0	2 631 462	10.8
Electrical Products Inds.	13 924	1.6	1 553 347	6.4
Non-Metallic Mineral Products Inds.	81 951	9.6	973 218	4.0
Petroleum & Coal Products Inds.	46 968	5.5	462 565	1.9
Chemical & Chemical Products Inds.	67 883	8.0	1 524 064	6.3
Miscellaneous Manufacturing Inds.	11 447	1.3	708 352	2.9
Sub total	743 291	87.5	20 966 392	86.3
Total all Industry Groups[1]	849 473	100.0	24 292 148	100.0

[1] Totals may not add due to rounding.

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SOURCE: Statistics Canada. 1972 Annual Census of Manufacturers. (preliminary), Catalogue No. 31-201P, -203P, -204P, -205P, -206P, -207P, -208P, Ottawa, August, 1974.

Table 7. VALUE ADDED ON A TOTAL ACTIVITY BASIS OF THE MANUFACTURING INDUSTRIES OF ALBERTA AND CANADA BY INDUSTRY GROUP, 1972

Industry Group	Alberta $'000	Alberta %	Canada $'000	Canada %
Wood Inds.	81 848	9.2	1 422 423	5.5
Paper & Allied Inds.	30 534	3.4	1 961 576	7.5
Sub total	112 382	12.7	3 383 999	13.0
Food & Beverage Inds.	229 659	25.9	3 689 605	14.2
Tobacco Products Inds.	X	X	254 645	1.0
Rubber & Plastic Products Inds.	16 421	1.9	762 823	2.9
Leather Inds.	2 043	0.2	224 234	0.9
Textile Inds.	7 448	0.8	862 211	3.3
Knitting Mills	X	X	218 299	0.8
Clothing Inds.	X	X	800 840	3.1
Furniture & Fixture Inds.	12 355	1.4	505 673	1.9
Printing, Publishing & Allied Inds.	55 320	6.2	1 263 749	4.9
Primary Metal Inds.	51 427	5.8	1 960 592	7.5
Metal Fabricating Inds.	72 805	8.2	2 049 396	7.9
Machinery Inds.	33 140	3.7	1 144 875	4.4
Transportation Equipment Inds.	45 802	5.2	3 150 950	12.1
Electrical Products Inds.	14 169	1.6	1 787 865	6.9
Non-Metallic Mineral Products Inds.	84 014	9.5	1 010 146	3.9
Petroleum & Coal Products Inds.	47 208	5.3	465 518	1.8
Chemical & Chemical Products Inds.	69 995	7.9	1 676 041	6.4
Miscellaneous Manufacturing Inds.	15 066	1.7	802 803	3.1
Sub total	773 076	87.3	22 630 265	87.0
Total all Industry Groups[1]	885 458	100.0	26 014 264	100.0

[1] Totals may not add due to rounding.

X Confidential

SOURCE: Statistics Canada. 1972 Annual Census of Manufacturers. (preliminary), Catalogue No. 31-201P,-203P, -204P, -205P, -206P, -207P, -208P, Ottawa, August, 1974.

Table 8. EMPLOYMENT ON A TOTAL ACTIVITY BASIS OF THE MANUFACTURING INDUSTRIES OF ALBERTA AND CANADA BY INDUSTRY GROUP, 1972

Industry Group	Alberta		Canada	
	No.	%	No.	%
Wood Inds.	5 717	10.5	102 699	6.1
Paper & Allied Inds.	1 680	3.1	120 758	7.2
Sub total	7 397	13.6	223 457	13.3
Food & Beverage Inds.	14 057	25.9	220 184	13.1
Tobacco Products Inds.	X	X	9 525	0.6
Rubber & Plastic Products Inds.	1 058	2.0	49 098	2.9
Leather Inds.	236	0.4	27 238	1.6
Textile Inds.	622	1.1	73 304	4.4
Knitting Mills	X	X	24 732	1.5
Clothing Inds.	X	X	102 012	6.1
Furniture & Fixture Inds.	1 182	2.2	46 942	2.8
Printing, Publishing & Allied Inds.	3 713	6.9	86 071	5.1
Primary Metal Inds.	3 194	5.9	113 958	6.8
Metal Fabricating Inds.	5 177	9.6	138 309	8.3
Machinery Inds.	2 250	4.2	77 437	4.6
Transportation Equipment Inds.	3 742	6.9	158 105	9.4
Electrical Products Inds.	1 249	2.3	121 135	7.2
Non-Metallic Mineral Products Inds.	3 662	6.8	53 087	3.2
Petroleum & Coal Products Inds.	1 106	2.0	15 409	0.9
Chemical & Chemical Products Inds.	2 335	4.3	74 731	4.5
Miscellaneous Manufacturing Inds.	1 129	2.1	60 085	3.6
Sub total	46 798	86.4	1 451 362	86.8
Total all Industry Groups[1]	54 195	100.0	1 674 819	100.0

[1] Totals may not add due to rounding.

X Confidential

SOURCE: Statistics Canada. 1972 Annual Census of Manufacturers. (preliminary), Catalogue No. 31-201P, -203P, -204P, -205P, -206P, -207P, -208P, Ottawa, August, 1974.

Table 9. SALARIES AND WAGES ON A TOTAL ACTIVITY BASIS OF THE MANUFACTURING INDUSTRIES OF ALBERTA AND CANADA BY INDUSTRY GROUP, 1972

Industry Group	Alberta $'000	Alberta %	Canada $'000	Canada %
Wood Inds.	41 331	9.5	770 902	5.8
Paper & Allied Inds.	14 897	3.4	1 135 298	8.5
Sub total	56 228	13.0	1 906 200	14.2
Food & Beverage Inds.	111 453	25.7	1 593 301	11.9
Tobacco Products Inds.	X	X	82 540	0.6
Rubber & Plastic Products Inds.	8 177	1.9	372 587	2.8
Leather Inds.	1 399	0.3	145 694	1.1
Textile Inds.	3 977	0.9	474 585	3.5
Knitting Mills	X	X	127 626	1.0
Clothing Inds.	X	X	514 281	3.8
Furniture & Fixture Inds.	7 506	1.7	299 296	2.2
Printing, Publishing & Allied Inds.	29 261	6.8	712 463	5.3
Primary Metal Inds.	30 089	6.9	1 108 809	8.3
Metal Fabricating Inds.	41 442	9.6	1 150 517	8.6
Machinery Inds.	19 824	4.6	676 016	5.0
Transportation Equipment Inds.	27 617	6.4	1 517 008	11.3
Electrical Products Inds.	9 447	2.2	965 915	7.2
Non-Metallic Mineral Products Inds.	31 972	7.4	458 227	3.4
Petroleum & Coal Products Inds.	12 187	2.8	186 037	1.4
Chemical & Chemical Products Inds.	23 027	5.3	697 117	5.2
Miscellaneous Manufacturing Inds.	7 933	1.8	417 134	3.1
Sub total	377 099	87.0	11 499 153	85.8
Total all Industry Groups[1]	433 327	100.0	13 405 353	100.0

[1] Totals may not add due to rounding.

X Confidential

SOURCE: Statistics Canada. 1972 Annual Census of Manufacturers. (preliminary), Catalogue No. 31-201P, 203P, -204P, -205P, -206P, -207P, -208P, Ottawa, August, 1974.

represented roughly 5.6% of the national figure, while paper and allied industries made up 1.5%. The two groups combined had shipments of $239 million in 1972 compared to the Canadian total of $7499 million.

Each of the five principal statistics examined for Alberta revealed that its forest products industries represented between 9.8 and 13.6% of total manufacturing in 1972 (Table 10). In most of the indicators the wood industries represented about 9% and the paper and allied industries accounted for the remaining 3%. The forest industries were just slightly more important at the national level, where they had between 13 and 14% of total manufacturing activity. One apparent difference was the dominance of the wood industries group in Alberta, while nationally the paper and allied component was most significant. Also, the magnitude of the dominance of one component of the forest products industries over the other was greater at the provincial level.

A breakdown of the wood industries and paper and allied industries at the S.I.C. three- and four-digit level is provided in Tables 11 through 15. A comparison of these codes with those of the primary wood-using industries surveyed and reported on earlier in this study (establishments which utilized roundwood or wood chips in their manufacturing processes) will help the reader relate the study's findings to the data presented in this chapter. These tables also provide ample illustration of the problem that faces users of Statistics Canada information requiring detailed analysis of an industry that has very few respondents in a given province. As clearly illustrated in Tables 10-14, requirements of confidentiality resulted in data being

Table 10. A COMPARISON OF FIVE PRINCIPAL STATISTICS OF THE FOREST PRODUCTS INDUSTRIES IN ALBERTA AND CANADA, 1972

Selected Principal Statistics	Respective Percentages of Manufacturing Industry	
	Alberta	Canada
Value of shipments of goods of own manufacture		
Wood Industries	7.2	5.5
Paper and Allied Industries	2.7	7.9
Total	9.8	13.3
Value added by manufacturing activity		
Wood Industries	9.0	5.8
Paper and Allied Industries	3.5	7.9
Total	12.5	13.7
Valued added on a total activity basis		
Wood Industries	9.2	5.5
Paper and Allied Industries	3.4	7.5
Total	12.7	13.0
Employment on a total activity basis		
Wood Industries	10.5	6.1
Paper and Allied Industries	3.1	7.2
Total	13.6	13.3
Salaries and Wages on a total activity basis		
Wood Industries	9.5	5.8
Paper and Allied Industries	3.4	8.5
Total	13.0	14.2

SOURCE: Tables 5, 6, 7, 8, and 9

Table 11. VALUE OF SHIPMENTS OF GOODS OF OWN MANUFACTURE OF LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES IN ALBERTA AND CANADA, 1972

SIC No.	Industry	Alberta $'000	Alberta %	Canada $'000	Canada %
031	Logging	26 949	100	1 872 572	100
Major Group 8	Wood Industries[1]	173 576	100	3 084 899	100
2511	Shingle Mills	-	-	55 657	1.8
2513	Sawmills & Planing Mills	73 979	42.6	1 893 573	61.4
252	Veneer & Plywood Mills	18 390	10.6	393 336	12.8
2541	Sash, Door & other Millwork Plants	19 669	11.3	290 516	9.4
2542	Hardwood Flooring Plants	-	-	26 949	.9
2543	Mfs. of Pre-Fab. Bldgs.	43 320	25.0	128 077	4.2
2544	Mfs. of Wooden Kitchen Cabs.	5 865	3.4	63 356	2.1
256	Wooden Box Factories	X	X	62 295	2.0
258	Coffin and Casket Industry	X	X	18 422	.6
259	Miscellaneous Wood Inds.[2]	9 798	5.6	152 719	5.0
Major Group 10	Paper and Allied Inds.[3]	65 036	100	4 414 017	100
271	Pulp and Paper Mills	X	X	3 127 821	70.7
272	Asphalt Roofing Mfs.	9 862	15.2	62 572	1.4
2731	Folding Carton & Set-up Box Mfs.	X	X	214 355	4.9
2732	Corrugated Box Mfs.	X	X	345 291	7.8
2733	Paper and Plastic Bag Mfs.	6 948	10.7	210 958	4.9
274	Miscellaneous Paper Converters	X	X	453 020	10.3

[1] Wood Industries include SIC 251(2511, 2513), 252, 254(2541, 2542, 2543, 2544), 256, 258, 259(2591, 2592, 2593, 2599).

[2] Miscellaneous Wood Industries include SIC 2591, 2592, 2593, 2599.

[3] Paper and Allied Industries include SIC 271, 272, 273(2731, 2732, 2733), 274.

X Confidential

- Nil or zero

SOURCE: Statistics Canada. Catalogue Number 25-202; 35-203, -205, -208, -209, -210; 36-205, -206, -207, -213, -214.

Table 12. VALUE ADDED BY MANUFACTURING ACTIVITY OF LOGGING, WOOD,AND PAPER AND ALLIED INDUSTRIES IN ALBERTA AND CANADA, 1972

SIC No.	Industry	Alberta $'000	Alberta %	Canada $'000	Canada %
031	Logging	12 233	100	814 264	100
Major Group 8	Wood Industries[1]	76 446	100	1 397 320	100
2511	Shingle Mills	-	-	29 105	2.1
2513	Sawmills & Planing Mills	37 796	49.4	864 865	61.8
252	Veneer & Plywood Mills	8 479	11.1	181 920	13.0
2541	Sash, Door & other Millwork Plants	8 038	10.5	122 781	8.8
2542	Hardwood Flooring Plants	-	-	10 429	.8
2543	Mfs. of Pre-Fab. Bldgs.	13 617	17.8	42 381	3.0
2544	Mfs. of Wooden Kitchen Cabs.	3 036	4.0	33 799	2.4
256	Wooden Box Factories	X	X	30 218	2.2
258	Coffin and Casket Industry	X	X	9 988	.7
259	Miscelleneous Wood Inds.[2]	4 492	5.9	71 833	5.1
Major Group 10	Paper and Allied Inds.[3]	29 736	100	1 928 434	100
271	**Pulp** and Paper Mills	X	X	1 374 129	71.2
272	Asphalt Roofing Mfs.	4 499	15.1	28 219	1.5
2731	Folding Carton & Set-up Box Mfs.	X	X	98 353	5.1
2732	Corrugated Box Mfs.	X	X	135 318	7.0
2733	Paper and Plastic Bag Mfs.	3 276	11.0	79 423	4.1
274	Miscellaneous Paper Converters	X	X	212 992	11.0

[1] Wood Industries include SIC 251(2511, 2513), 252, 254(2541, 2542, 2543, 2544), 256, 258, 259(2591, 2592, 2593, 2599).

[2] Miscellaneous Wood Industries include SIC 2591, 2592, 2593, 2599.

[3] Paper and Allied Industries include SIC 271, 272, 273(2731, 2732, 2733), 274.

X Confidential

- Nil or zero

SOURCE: Statistics Canada. Catalogue Number 25-202; 35-203, -205, -208, -209, -210; 36-205, -206, -207, -213, -214.

Table 13. VALUE ADDED ON A TOTAL ACTIVITY BASIS OF LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES IN ALBERTA AND CANADA, 1972

SIC No.	Industry	Alberta $'000	Alberta %	Canada $'000	Canada %
031	Logging	12 233	100	829 421	100
Major Group 8	Wood Industries[1]	81 848	100	1 422 423	100
2511	Shingle Mills	-	-	29 178	2.1
2513	Sawmills & Planing Mills	12 894	15.8	869 320	61.1
252	Veneer & Plywood Mills	8 443	10.3	186 555	13.1
2541	Sash, Door & other Millwork Plants	8 686	10.6	130 099	9.2
2542	Hardwood Flooring Plants	-	-	10 545	.7
2543	Mfs. of Pre-Fab. Bldgs.	17 912	21.9	49 519	3.5
2544	Mfs. of Wooden Kitchen Cabs.	3 048	3.7	33 867	2.4
256	Wooden Box Factories	X	X	30 385	2.1
258	Coffin and Casket Industry	X	X	10 301	.7
259	Miscellaneous Wood Inds.[2]	4 483	5.5	72 654	5.1
Major Group 10	Paper and Allied Inds.[3]	30 534	100	1 961 576	100
271	Pulp and Paper Mills	X	X	1 380 052	70.2
272	Asphalt Roofing Mfs.	5 199	17.0	30 997	1.6
2731	Folding Carton & Set-up Box Mfs.	X	X	99 257	5.1
2732	Corrugated Box Mfs.	X	X	134 866	6.9
2733	Paper and Plastic Bag Mfs.	3 260	10.7	85 675	4.4
274	Miscellaneous Paper Converters	X	X	230 729	11.8

[1] Wood Industries include SIC 251(2511, 2513), 252, 254(2541, 2542, 2543, 2544), 256, 258, 259(2591, 2592, 2593, 2599).

[2] Miscellaneous Wood Industries include SIC 2591, 2592, 2593, 2599.

[3] Paper and Allied Industries include SIC 271, 272, 273(2731, 2732, 2733), 274.

X Confidential

- Nil or zero

SOURCE: Statistics Canada. Catalogue Number 25-202; 35-203, -205, -208, -209, -210; 36-205, -206, -207, -213, -214.

Table 14. EMPLOYMENT ON A TOTAL ACTIVITY BASIS OF LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES IN ALBERTA AND CANADA, 1972

SIC No.	Industry	Alberta No.	Alberta %	Canada No.	Canada %
031	Logging	782	100	47 553	100
Major Group 8	Wood Industries[1]	5 717	100	102 699	100
2511	Shingle Mills	-	-	1 798	1.8
2513	Sawmills & Planing Mills	2 574	45.0	57 111	55.6
252	Veneer & Plywood Mills	483	8.5	13 664	13.3
2541	Sash, Door & other Millwork Plants	765	13.4	11 150	10.9
2542	Hardwood Flooring Plants	-	-	1 258	1.2
2543	Mfs. of Pre-Fab. Bldgs.	1 205	21.1	4 049	3.9
2544	Mfs. of Wooden Kitchen Cabs.	341	6.0	3 090	3.0
256	Wooden Box Factories	X	X	3 218	3.1
258	Coffin and Casket Industry	X	X	1 202	1.2
259	Miscellaneous Wood Inds.[2]	251	4.4	6 159	6.0
Major Group 10	Paper and Allied Inds.[3]	1 680	100	120 758	100
271	Pulp and Paper Mills	X	X	78 969	65.4
272	Asphalt Roofing Mfs.	167	9.9	1 277	1.1
2731	Folding Carton & Set-up Box Mfs.	X	X	8 012	6.6
2732	Corrugated Box Mfs.	X	X	10 129	8.4
2733	Paper and Plastic Bag Mfs.	254	15.1	6 194	5.1
274	Miscellaneous Paper Converters	X	X	16 177	13.4

[1] Wood Industries include SIC 251(2511, 2513), 252, 254(2541, 2542, 2543, 2544), 256, 258, 259(2591, 2592, 2593, 2599).

[2] Miscellaneous Wood Industries include SIC 2591, 2592, 2593, 2599.

[3] Paper and Allied Industries include SIC 271, 272, 273(2731, 2732, 2733), 274.

X Confidential

- Nil or zero

SOURCE: Statistics Canada. Catalogue Number 25-202; 35-203, -205, -208, -209, -210; 36-205, -206, -207, -213, -214.

Table 15. SALARIES AND WAGES ON A TOTAL ACTIVITY BASIS OF LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES IN ALBERTA AND CANADA, 1972

SIC No.	Industry	Alberta $'000	Alberta %	Canada $'000	Canada %
031	Logging	6 662	100	457 586	100
Major Group 8	Wood Industries[1]	41 331	100	770 902	100
2511	Shingle Mills	-	-	16 407	2.1
2513	Sawmills & Planing Mills	17 563	42.5	447 712	58.1
252	Veneer & Plywood Mills	3 642	8.8	108 209	14.0
2541	Sash, Door & other Millwork Plants	5 724	13.9	73 804	9.6
2542	Hardwood Flooring Plants	-	-	7 261	.9
2543	Mfs. of Pre-Fab. Bldgs.	9 503	23.0	28 651	3.7
2544	Mfs. of Wooden Kitchen Cabs.	2 233	5.4	21 634	2.8
256	Wooden Box Factories	X	X	19 198	2.5
258	Coffin and Casket Industry	X	X	7 370	1.0
259	Miscellaneous Wood Inds.[2]	2 081	5.0	40 656	5.3
Major Group 10	Paper and Allied Inds.[3]	14 897	100	1 135 298	100
271	Pulp and Paper Mills	X	X	808 869	71.2
272	Asphalt Roofing Mfs.	1 468	9.9	11 776	1.0
2731	Folding Carton & Set-up Box Mfs.	X	X	60 375	5.3
2732	Corrugated Box Mfs.	X	X	83 702	7.4
2733	Paper and Plastic Bag Mfs.	1 897	12.7	46 627	4.1
274	Miscellaneous Paper Converters	X	X	123 950	10.9

[1] Wood Industries include SIC 251(2511, 2513), 252, 254(2541, 2542, 2543, 2544), 256, 258, 259(2591, 2592, 2593, 2599).

[2] Miscellaneous Wood Industries include SIC 2591, 2592, 2593, 2599.

[3] Paper and Allied Industries include SIC 271, 272, 273(2731, 2732, 2733), 274.

X Confidential

- Nil or zero

SOURCE: Statistics Canada. Catalogue Number, 25-202; 35-203, -205, -208, -209, -210; 36-205, -206, -207, -213, -214.

suppressed for about 75% of the listed paper and allied industries.

In summary, wood-using activity (including logging) accounts for between 1 and 2% of Alberta's GDP, 2-3% of its goods-producing sector, and 10-14% of the manufacturing industry group. This relationship exists for all economic indicators examined.

SOME STRUCTURAL FEATURES OF ALBERTA'S FOREST INDUSTRY

Like most provinces, Alberta's primary wood-using industry includes the very large, sophisticated plant and the very small, rudimentary operation. The sawmill and planing mill industry illustrates this vividly. Engineered capacity of Alberta sawmills varied from about 2000 fbm to more than 100 000 fbm per 8-h shift, with a majority of these mills having a shift capacity of less than 12 000 fbm (Figure 2). A distribution of forest industry firms among industry groups is provided in Table 16.

Differences in capacity, products, technology, ownership structure, and economic importance of the business to the owner are a few of the features segregating various components of Alberta's forest industry. Except for small sawmills, most firms were operated full-time by the entrepreneur or his professional managers. In addition, these businesses were usually incorporated companies or partnerships having limited liability. Thus, some of the best examples of contrast between the old and the new are provided in the sawmill and planing mill industry.

FIG. 2 DISTRIBUTION OF SAWMILLS IN ALBERTA BY RATED CAPACITY PER 8-HOUR SHIFT IN 1972

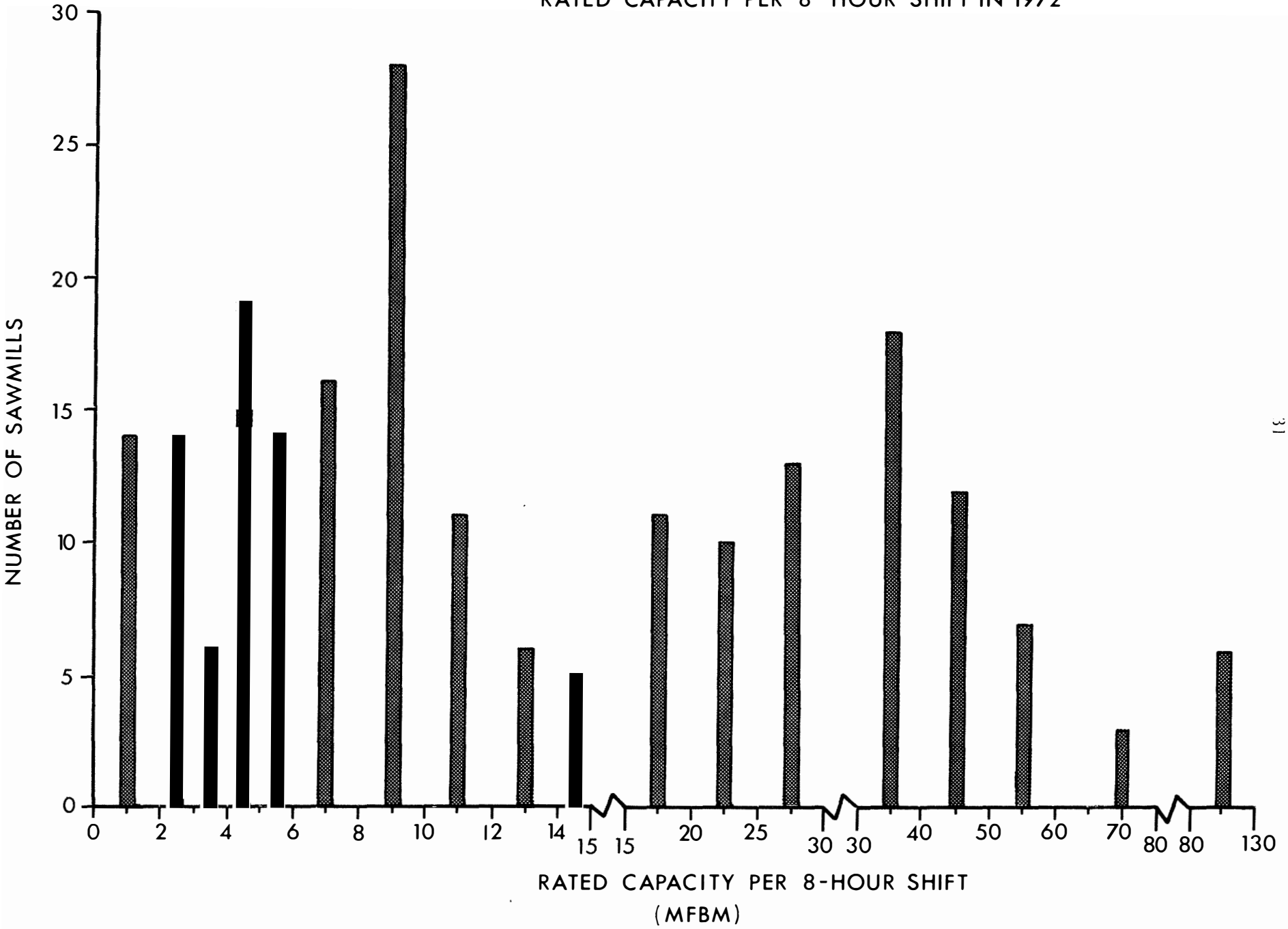


Table 16. PRIMARY WOOD-USING INDUSTRIES IN ALBERTA, 1972

Industry			SIC Code	Number of Firms
Sawmills and Planing Mills				
Class 1	<2 360 m^3	(<1 000 Mfbm)	2513	130
Class 2	2 360 - 11 796 m^3	(1 000 - 4 999 Mfbm)		55
Class 3	11 799 - 23 595 m^3	(5 000 - 9 999 Mfbm)		9
Class 4	23 597 - 35 394 m^3	(10 000 - 14 999 Mfbm)		5
Class 5	35 396 - 47 192 m^3	(15 000 - 19 999 Mfbm)		6
Class 6	≥47 195 m^3	(≥20 000 Mfbm)		8
Wood Preservation Industry			2591	7
Veneer and Plywood Mills			252	3
Paper and Allied Industries[1]				4
Independent Planing Mills[2]			2513	9
TOTAL				236

[1] Includes pulp and paper mills (SIC Code 271) and Asphalt Roofing Manufacturers (SIC Code 272) which utilize roundwood or wood chips.

[2] These mills purchased rough sawn lumber on the open market and from sawmills under contract. In addition to planing rough lumber some mills resawed larger material into smaller products before planing.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

The six largest sawmills (2.8% of the total) together produced 32% of Alberta's lumber in 1972 (Table 17). Alternatively, 52.1% of the smallest sawmills manufactured just 1.3% of Alberta's lumber. Although the small sawmill groups are relatively insignificant economically, Classes 1 and 2 accounted for about 23% of total production in 1972, and represented 185 out of 213 mills in the province. They also served an important function as suppliers for local and regional markets in the province. (Chapter 4 expands on markets and modes of transportation used by the six sawmill production classes.)

Table 17. CONCENTRATION OF LUMBER PRODUCTION[1] IN ALBERTA, 1972

Cumulative No. of Mills	Cumulative Percent of Mills (largest to smallest) %	Cumulative Percent of Total Production %
6	2.8	32.428
9	4.2	41.941
16	7.5	68.060
28	13.1	81.757
46	21.6	88.610
59	27.7	93.308
69	32.4	95.906
80	37.6	97.768
85	39.9	97.884
91	42.7	97.990
102	47.9	98.688
130	61.0	99.263
146	68.5	99.406
160	75.1	99.749
179	84.0	99.860
185	86.9	99.868
199	93.4	99.930
213	100.0	100.000

[1] Lumber production is based on total rough lumber sawn by the different mills.

SOURCE: Appendix B

In most economic analyses of market power and structure an analysis of market shares and concentration of production is included. However, it should be remembered that a concentration of production does not necessarily mean concentration of market power. Production of lumber in Alberta has been used as the reference point for the above comparisons but since more than half of Alberta's production is sold in the North American market where it represents only 1 or 2% of total sales, it is not likely that Alberta mills have any significant market power.

Even with this concentrated production pattern, a few facts concerning the many small sawmills (185) are of interest. Technically, the majority of these mills are very similar to those in use 50 years ago. As indicated by Table 18, 61% of the small sawmills were portable. In Class 1, 77% of the mills were portable, while in Class 2 the same proportion (78%) was stationary. In most cases the portable mills were nothing more than a single-blade circular saw with a movable log carriage.

Table 18. ALBERTA SMALL SAWMILLS BY TYPE, 1972

Size Class	Type	Number	% of Total
1	Portable	100	54.1
	Stationary	30	16.2
2	Portable	12	6.5
	Stationary	43	23.2
TOTAL		185	100.0

SOURCE: N.F.R.C. Wood Industry Survey, 1972

The age of each sawmill could not be established directly, partly because some had been completely rebuilt while others had been resold several times. The purchase date of the mill by the present owner was used as a proxy age, although this in itself is not conclusive.

More than half of all the small sawmills (61%) were purchased within the last decade, with the majority of all mills purchased being second-hand units (Table 19). Differences in the age of mills between Class 1 and Class 2 units were not as acute as the differences in type of sawmill (portable vs. stationary)

Table 19. PERIOD OF PURCHASE OF SMALL SAWMILLS BY CURRENT OWNER, 1972

Period	Class 1	Class 2	Total Number	% of Total
1932 and earlier	-	3	3	1.6
1933 - 1942	6	-	6	3.2
1943 - 1952	32	13	45	24.3
1953 - 1962	16	3	19	10.3
1963 - 1972	76	36	112	60.5
TOTAL	130	55	185	99.9

SOURCE: N.F.R.C. Wood Industry Survey, 1972

An indication of a sawmill's size or productive capacity was the number of people required to operate it. In most cases two men or more were employed (Table 20). Over 56% of all small sawmills employed four or fewer workers per shift. However, once again there exists an obvious

Table 20. REQUIRED NUMBER OF WORKERS PER SMALL SAWMILL IN ALBERTA, 1972

Number of Workers Per Mill	Number of Sawmills Class 1	Class 2	Total	% of Total
1	4	-	4	2.2
2	43	-	43	23.2
3	16	6	22	11.9
4	35	-	35	18.9
5	12	-	12	6.5
6	8	2	10	5.4
7	-	6	5	3.2
8	4	-	4	2.2
9	4	6	10	5.4
10-12	-	17	17	9.2
13-15	4	-	4	2.2
16-18	-	6	6	3.2
19-21	-	8	8	4.3
> 21	-	4	4	2.2
TOTAL	130	55	185	100.0

SOURCE: N.F.R.C. Wood Industry Survey, 1972

difference between the two classes of small sawmills, as 91% of the Class 1 mills employed fewer than seven workers per shift, while 85% of the Class 2 mills employed seven or more workers. Hence there are two employment patterns within the small sawmill group.

The question of who owns and operates these small sawmills is answered in Table 21.

Table 21. OWNERSHIP PATTERN OF ALBERTA'S SMALL SAWMILL-INDUSTRY, 1972

Ownership	Number of Sawmills Class 1	Class 2	Total	% of Total
Single proprietorship	106	24	130	70.3
Partnership	15	5	20	10.8
Incorporated (Co.)	9	26	35	18.9
Government	-	-	-	-
TOTAL	130	55	185	100.0

SOURCE: N.F.R.C. Wood Industry Survey, 1972

In each case the owner(s) were the managers and generally the operators, usually working as the sawyer. The majority of these mills were owned and operated by private individuals, usually farmers or local construction contractors. While Class 2 mills were basically single proprietorships (44%) and corporations (47%), Class 1 mills were overwhelmingly single proprietorship.

Sawmilling was relatively insignificant as an earner of net income for about 40% of these operators (Table 22). Nearly 54% of them received less than half of their net income from sawmill operations. Some class differences in the proportion of net income

Table 22. SAWMILLING AS A SOURCE OF NET INCOME FOR SMALL-SAWMILL OPERATORS, 1972

% of Total Net Income	Number of Sawmills Class 1	Class 2	Total	% of Total
0 - 9	55	18	73	39.5
10 - 19	6	5	11	5.9
20 - 29	6	-	6	3.2
30 - 39	6	-	6	3.2
40 - 49	3	-	3	1.6
50 - 59	23	5	28	15.1
60 - 69	-	-	-	-
70 - 79	6	-	6	3.2
80 - 89	6	-	6	3.2
90 - 99	6	-	6	3.2
100	13	27	40	21.6
TOTAL	130	55	185	99.7

SOURCE: N.F.R.C. Wood Industry Survey, 1972

received from sawmilling are evident, but are less significant than differences in other areas of small sawmill operation. Class 1 sawmills are more dispersed according to percentage of net income than Class 2 mills. While the percentage of net income from sawmilling was usually quite low, the convenience, independence, and contribution to cash income were significant enough to keep the operators in the industry.

CHAPTER III

THE FOREST RESOURCE, ITS UTILIZATION, AND POTENTIAL

Provincial crown land dominates the ownership pattern of forest lands in Alberta and plays a significant role in the supply and allocation of wood fiber to the forest industry. Because of these two particularly important considerations, this chapter confines itself primarily to discussion and interpretation of the forest resource and associated timber harvesting activity on these lands.

AREA CLASSIFICATION

The total area of Alberta is 661 186 km^2 (255 285 sq miles), of which land accounts for about 97% and water for 3% (Table 23). The forested area occupies 445 183 km^2 (171 886 sq miles), agricultural lands 193 602 km^2 (74 750 sq miles), and other lands 5605 km^2 (2164 sq miles).

Forest lands, situated mostly in the northern half of the province and along the east slope of the Rocky Mountains, have generally been retained under public ownership. Of the total forest land area 81%, or 359 911 km^2 (138 962 sq miles), is classified as provincial crown land. Of this, productive forest land accounts for 44%, potentially productive land 20%, and non-productive land 36%. The 203 427 km^2 (78 555 sq miles) of productive and non-productive area in the forest management units are under management primarily for timber production (Table 24).

The remaining 85 273 km^2 (32 924 sq miles) of forest land is owned by other groups, namely the federal government, Indian Bands,

Table 23. AREA CLASSIFICATION OF ALBERTA, 1972

Land Classification	Area		Percent of Total Area
	km^2	sq miles	
FOREST LAND	445 183	171 886	67.3
AGRICULTURE	193 602	74 750	29.3
OTHER (urban, etc.)	5 605	2 164	0.8
TOTAL LAND	644 390	248 800	97.4
WATER	16 796	6 485	2.6
TOTAL AREA	661 186	255 285	100.0

SOURCE: Dominion Bureau of Statistics, 1971. Canada Year Book, 1970-71. Information Canada, Ottawa.

Statistics Canada, 1972. Agriculture: Census Farms by Size, Area, and Use of Farm Land. Cat. No. 96-721 (AA-4) August, 1972.

Statistics Canada, 1974. Canadian Forestry Statistics, 1972. Cat. No. 25-202. Annual.

Table 24. TENURE AND CLASS OF FOREST LAND IN ALBERTA, 1972[1]

	Productive Land	Potentially Productive Land	Non-Productive Land	Total[2]	%
	---------- km^2 ----------				
CROWN-PROVINCIAL					
Forest Management Units	145 076	58 381	110 631	314 088	70.5
"O" Areas[3]	12 046	11 917	15 561	39 524	8.9
Wilderness Areas	2 246	13	4 040	6 299	1.4
CROWN-FEDERAL					
National Parks	n.a.	n.a.	n.a.	44 175[4]	9.9
Other Federal Lands[5]	1 681	1 797	1 655	5 133	1.2
PRIVATE	n.a.	n.a.	n.a.	28 285	6.4
OTHER					
Métis Colonies	1 803	912	2 318	5 033	1.1
Indian Reserves	1 792	(included with productive area)	855	2 647	.6
TOTAL				445 184	100.0

n.a. - Not available

[1] See Table 24A for Canadian equivalents.

[2] Excludes water areas.

[3] Crown forest lands scattered through settled areas.

[4] Total water area for Banff, Jasper and Elk Island parks estimated.

[5] Includes lands under lease.

SOURCE: Alberta Department of Lands and Forests. 1971. Forest Inventory Statistics by Forest Management Units and Forests. Timber Management Branch, May, 1971. Edmonton.

Dominion Bureau of Statistics. 1971. Canada Year Book, 1970-71. Information Canada, Ottawa.

Hirvonen, R. 1969. Air Photo Reconnaissance Record, Major Land Use Areas, Indian Reserves In Alberta, 1967. Forest Management Institute, Department of Fisheries and Forestry, Ottawa, May, 1969.

Kirby, C.L. 1973. The Kananaskis Forest Experiment Station, Alberta. Northern Forest Research Centre, Canadian Forestry Service, Environment Canada, Edmonton, Alberta, January, 1973. Information Report NOR-X-51.

Kuchar, Peter. 1973. Habitat Types of Waterton Lakes National Park. National and Historic Branch, Dept. Indian Affairs and Northern Development, March, 1973.

Wallace, W.L. 1969. Report on Forest Surveys Wood Buffalo National Park, Alberta-N.W.T. 1949-61. Dept. of Fisheries and Forestry. Forest Management Institute, Ottawa, December, 1973.

Table 24A. TENURE AND CLASS OF FOREST LAND IN ALBERTA, 1972

	Productive Land	Potentially Productive Land	Non-Productive Land	Total[1]	%
	square miles				
CROWN-PROVINCIAL					
Forest Management Units	56 014	22 541	42 715	121 270	70.5
"O" Areas[2]	4 651	4 601	6 008	15 260	8.9
Wilderness Areas	867	5	1 560	2 432	1.4
CROWN-FEDERAL					
National Parks	n.a.	n.a.	n.a.	17 056[3]	9.9
Other Federal Lands[4]	649	694	639	1 982	1.2
PRIVATE	n.a.	n.a.	n.a.	10 921	6.4
OTHER					
Métis Colonies	696	352	895	1 943	1.1
Indian Reserves	692	(included with productive area)	330	1 022	.6
TOTAL				171 886	100.0

n.a. - not available

[1] Excludes water areas.

[2] Crown forest lands scattered through settled areas.

[3] Total water area for Banff, Jasper and Elk Island parks estimated.

[4] Includes lands under lease.

SOURCE: Alberta Department of Lands and Forests, 1971. Forest Inventory Statistics by Forest Management Units and Forests. Timber Management Branch, May, 1971. Edmonton.

Dominion Bureau of Statistics. 1971. Canada Year Book, 1970-71. Information Canada, Ottawa.

Hirvonen, R. 1969. Air Photo Reconnaissance Record, Major Land Use Areas, Indian Reserves in Alberta, 1967. Forest Management Institute, Department of Fisheries and Forestry, Ottawa, May, 1969.

Kirby, C.L. 1973. The Kananaskis Forest Experiment Station, Alberta. Northern Forest Research Centre, Canadian Forestry Service, Environment Canada, Edmonton, Alberta, January, 1973. Information Report NOR-X-51.

Kuchar, Peter. 1973. Habitat Types of Waterton Lakes National Park. National and Historic Branch, Dept. Indian Affairs and Northern Development, March, 1973.

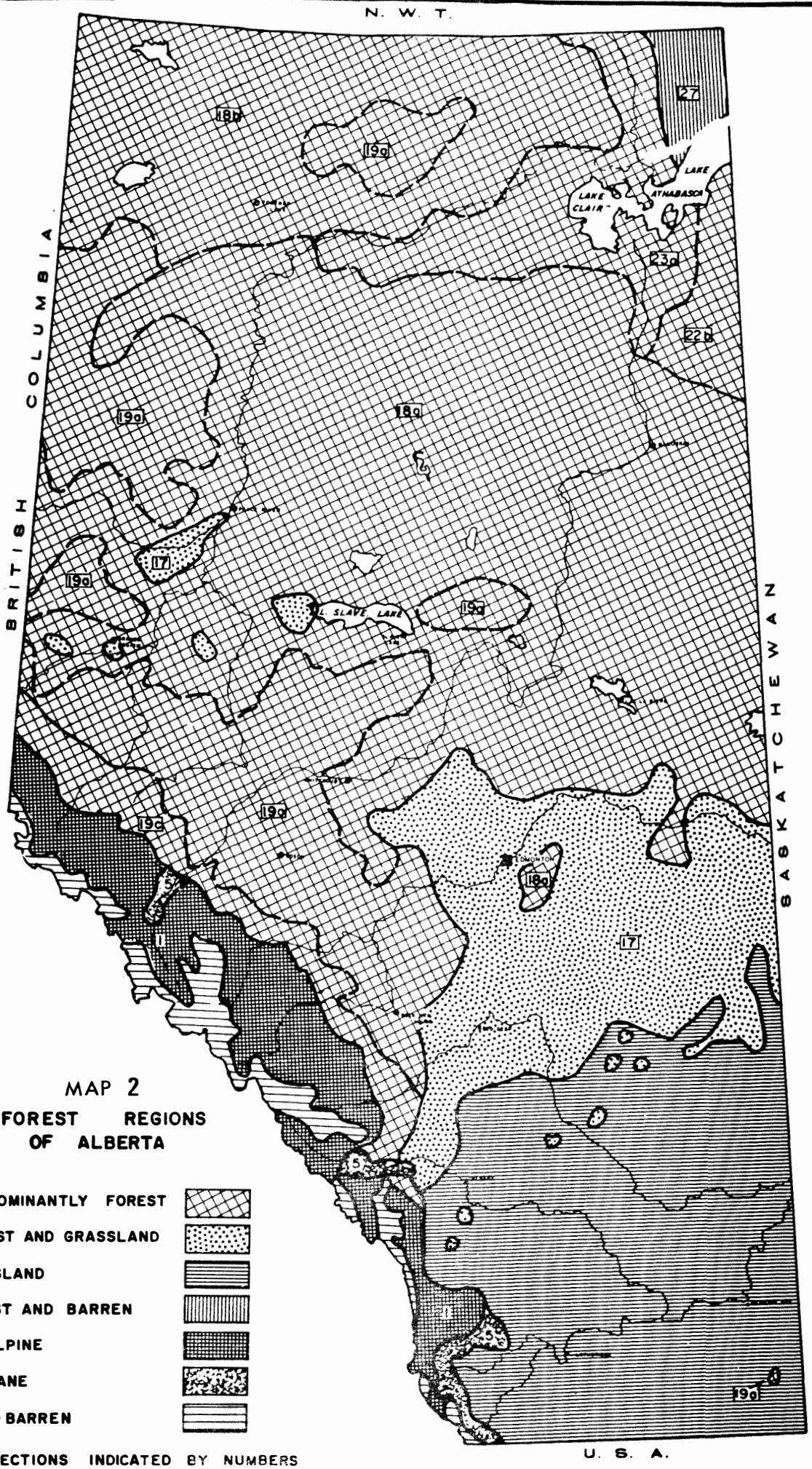
Wallace, W.L. 1969. Report on Forest Surveys Wood Buffalo National Park, Alberta-N.W.T. 1949-61. Dept. of Fisheries and Forestry. Forest Management Institute, Ottawa, December, 1973.

Métis colonies, private citizens, etc. Next to the provincial government, the federal government is the second largest owner of forest land, most of which is situated in the National Parks. Holdings under federal jurisdiction comprise some 49 308 km^2 (19 038 sq miles), or about 11% of the total area of forest land.

FOREST REGIONS

Alberta forms part of three of the major forest regions (Alberta Department of Lands and Forests, 1968; Rowe, 1972) in Canada--the Boreal, Subalpine, and Montane (Map 2). Generally the Boreal Forest Region in Alberta is characterized by the presence of white and black spruce with jack pine, lodgepole pine, balsam fir, alpine fir, and tamarack as less common or more local coniferous species. There is a general admixture of trembling aspen, balsam poplar, and white birch throughout most of the area.

The East Slope Rockies Section of the Subalpine Forest Region covers the southwestern part of the province on the eastern slopes of the Rocky Mountains and adjacent rugged foothills. The elevation of the section is approximately 1524-2073 m (5000-6800 ft). This is a coniferous forest area distinguished from the Upper Foothills Section of the Boreal Forest by the presence of Engelmann spruce and the Engelmann-white spruce hybrid combination. An important associated species is the lodgepole pine whose powers of prolific regeneration following fire have resulted in its replacing the spruce over large areas. With increasing elevation on the slopes, alpine fir becomes more important, particularly in the older spruce forests. Whitebark pine occurs at lower elevations, mixed with hybrid spruce and lodgepole pine, and is also conspicuous on


N. W. T.
BRITISH COLUMBIA
SASKATCHEWAN
U. S. A.
LAKE ATHABASCA
LAKE CLAIR
L. SLAVE LAKE
EDMONTON
18b
19a
27
23a
22b
18a
17
19c
5
11
21
MAP 2
FOREST REGIONS OF ALBERTA
PREDOMINANTLY FOREST
FOREST AND GRASSLAND
GRASSLAND
FOREST AND BARREN
SUBALPINE
MONTANE
ROCK-BARREN
FOREST SECTIONS INDICATED BY NUMBERS

exposed ridges and slopes at treeline. Limber pine and alpine larch occur under similar conditions in a few scattered locations. A small amount of Douglas fir is present on the fringe of the Subalpine-Montane Forest boundary.

The Douglas Fir and Lodgepole Pine Section of the Montane Forest occurs in four small patches on the east slopes of the Rocky Mountains. One area is found in the Porcupine Hills-Waterton Lakes district, one on the Bow and Kananaskis Rivers west of Calgary, one in the upper limits of the North Saskatchewan River, and the fourth on the Athabasca River at Jasper. The last three areas are of little significance to Alberta's forest industry. The stands of Douglas fir and lodgepole pine are mostly confined to warm, dry slopes, while the northern slopes and moister shaded sites are dominated by white spruce. Engelmann spruce, alpine fir, and some limber pine appear at the higher altitudes.

VOLUMES AND SPECIES

The volume of primary growing stock on provincial forest land is nearly 1536 million m^3 (54 billion ft^3), an average of 106 m^3/ha (1513 ft^3/acre). Table 25 shows the productive land area, gross merchantable volume[1] for softwood and hardwood growing stock, and average yield per hectare (acre) for each of the ten provincial Forests[2] (see Map 3).

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[1] Gross merchantable volume includes the cubic metre (cubic foot) volume of solid wood in all trees 10.16 cm (4.0 in.) diameter at breast height (outside bark) and over in stems only from a 30.48 cm (12 in.) stump to a 10.16 cm (4.0 in.) top inside bark.

[2] Alberta's provincial crown lands are divided into ten Forests for purposes of administration. Each Forest is divided into forest management units which average 2590 km^2 (1000 sq miles) in size.

Table 25. AREA AND VOLUMES OF PRODUCTIVE CROWN FOREST LAND IN ALBERTA[1,2]

Forest	Area (000's ha)	Volume[3] Softwoods	%	Hardwoods	%	Total	Average Volume/Hectare (m^3/ha)
		(Gross volume 10.16 cm+ d.b.h. in thousands of cubic metres)					
Athabasca	2 284	97 381	69	43 268	31	140 649	62
Bow-Crow	753	52 613	92	4 446	8	57 059	76
Clearwater-Rocky	1 052	85 573	78	24 551	22	110 124	105
Edson	1 535	162 992	84	30 157	16	193 149	126
Footner Lake	2 592	107 207	53	96 872	47	204 079	79
Grande Prairie	1 331	120 913	62	75 153	38	196 066	147
Lac La Biche	807	52 924	54	45 788	46	98 712	122
Peace River	1 209	70 820	52	65 667	48	136 487	113
Slave Lake	1 965	124 651	48	133 032	52	257 683	131
Whitecourt	979	87 697	62	54 085	38	141 782	145
TOTAL	14 507	962 771	63	573 019	37	1 535 790	106

[1] See Table 25A for Canadian equivalents.

[2] Area and volumes represent crown forest land producing or capable of producing crops of industrial wood. Data exclude leased lands, wilderness areas, Métis colonies, protection forests, and "0" areas.

[3] Softwood timber volumes have been updated since time of original forest inventory; hardwood timber volumes have not been adjusted for growth or depletion since original inventory.

SOURCE: Alberta Department of Lands and Forests. 1971. Forest Inventory Statistics by Forest Management Units and Forests. Timber Management Branch, May, 1971, Edmonton.

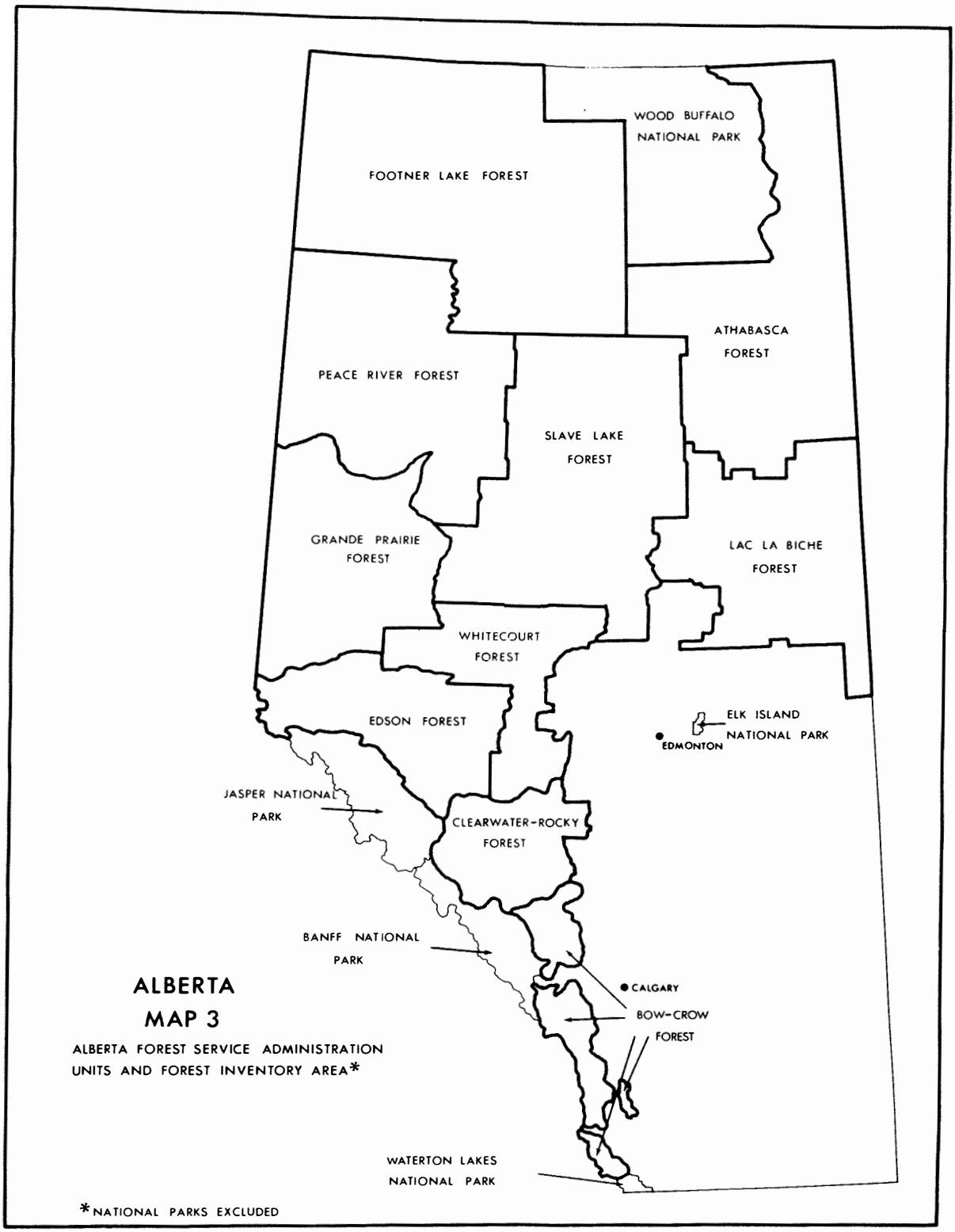
Table 25A. AREA AND VOLUMES OF PRODUCTIVE CROWN FOREST LAND IN ALBERTA[1]

Forest	Area (000's acres)	Volume[2] Softwoods	%	Hardwoods	%	Total	Average Volume/Acre (ft^3/acre)
		(Gross volume 4"+ d.b.h. in millions of cubic feet)					
Athabasca	5 644	3 439	69	1 528	31	4 967	880
Bow-Crow	1 861	1 858	92	157	8	2 015	1 083
Clearwater-Rocky	2 600	3 022	78	867	22	3 889	1 496
Edson	3 793	5 756	84	1 065	16	6 821	1 798
Footner Lake	6 406	3 786	53	3 421	47	7 207	1 125
Grande Prairie	3 289	4 270	62	2 654	38	6 924	2 105
Lac La Biche	1 993	1 869	54	1 617	46	3 486	1 749
Peace River	2 987	2 501	52	2 319	48	4 820	1 614
Slave Lake	4 856	4 402	48	4 698	52	9 100	1 874
Whitecourt	2 420	3 097	62	1 910	38	5 007	2 069
TOTAL	35 849	34 000	63	20 236	37	54 236	1 513

[1] Area and volumes represent crown forest land producing or capable of producing crops of industrial wood. Data exclude leased lands, wilderness areas, Métis colonies, protection forests, and "O" areas.

[2] Softwood timber volumes have been updated since time of original forest inventory; hardwood timber volumes have not been adjusted for growth or depletion since original inventory.

SOURCE: Alberta Department of Lands and Forests. 1971. Forest Inventory Statistics by Forest Management Units and Forests. Timber Management Branch, May, 1971, Edmonton.


WOOD BUFFALO
NATIONAL PARK
FOOTNER LAKE FOREST
ATHABASCA
FOREST
PEACE RIVER FOREST
SLAVE LAKE
FOREST
GRANDE PRAIRIE
FOREST
LAC LA BICHE
FOREST
WHITECOURT
FOREST
EDSON FOREST
ELK ISLAND
NATIONAL PARK
EDMONTON
JASPER NATIONAL
PARK
CLEARWATER-ROCKY
FOREST
BANFF NATIONAL
PARK
CALGARY
BOW-CROW
FOREST
WATERTON LAKES
NATIONAL PARK
ALBERTA
MAP 3
ALBERTA FOREST SERVICE ADMINISTRATION
UNITS AND FOREST INVENTORY AREA*
*NATIONAL PARKS EXCLUDED

Except for very small areas of forest land designated as provincial parks and natural areas, the area and volumes shown are estimates for crown lands producing or capable of producing crops of industrial wood and not withdrawn from timber utilization.

The east slope Forests, consisting of the Bow-Crow, Clearwater-Rocky, Edson, and Grande Prairie Forests, are of major importance because they contain 36% of the provincial inventory on 32% of the province's productive forest lands. Coniferous forests are of particular significance since 44% of the total provincial volume is located in this area. Sixty-seven percent of the east slope coniferous volume is located in the Edson and Grande Prairie Forests.

Deciduous volume dominates only in the Slave Lake Forest where it comprises 52% of the total volume. Hardwoods also account for a significant portion of the total volume in the Footner Lake (47%), Lac La Biche (46%), and Peace River (48%) Forests. South of the Edson Forest deciduous volume is relatively insignificant.

Five species or species groups occur in sufficient volume to be recorded in the provincial inventory (Table 26). White spruce and the pine group (mainly lodgepole pine with some jack pine) together account for 55%, or 851 million m^3 (30 049 million ft^3), of total wood volume. The aspen group, comprised mainly of trembling aspen and balsam poplar with some white birch, accounts for 37%, and the less significant species, black spruce and balsam fir, form 7% of the total wood volume.

SIZE CLASS RELATIONSHIP

Volumes for primary growing stock in the Alberta inventory are recorded for two size classes: 10.16-22.86 cm (4-9 in.) and 25.40 cm

Table 26. GROSS MERCHANTABLE VOLUME OF PRIMARY GROWING STOCK ON PRODUCTIVE CROWN FOREST LAND IN ALBERTA

Species	m^3 (thousands)	ft^3 (millions)	% All Species
White Spruce	434 182	15 333	28.3
Black Spruce	67 110	2 370	4.4
Balsam Fir	44 769	1 581	2.9
Pine	416 710	14 716	27.1
Total Softwoods	962 771	34 000	
Aspen	573 019	20 236	37.3
Total All Species	1 535 790	54 236	100.0

SOURCE: Table 27

(10 in.) and over diameter at breast height (dbh) (Table 27). Volumes in the smaller size class are generally considered suitable for pulpwood, posts, rails, and so forth, while trees of the larger class are considered as sawlog, peeler log, pole, piling, and railway tie material, depending on species. Changing technology in the sawmill industry in recent years, however, has encouraged the utilization of smaller diameter logs so that many Alberta operations are harvesting material down to 20.32 cm (8 in.) dbh and, in some cases, 15.24 cm (6 in.) dbh. As a result, a proportion of the volume in the smaller size class has value as sawtimber.

The smaller size class contains the major share of the wood volume: 852 million m^3 (30.1 billion ft^3), or 55% of the total. Of the coniferous volume 57% is found in the pulpwood class and, without exception, the

Table 27. GROSS MERCHANTABLE VOLUME OF PRIMARY GROWING STOCK ON PRODUCTIVE CROWN FOREST LAND IN ALBERTA BY SIZE CLASS AND SPECIES[1] [2]

Forest	Area (000's ha)	Size Class: Pulpwood (10.16-22.86 cm dbh) White Spruce	Black Spruce	Balsam Fir	Pine	Aspen	Total	Sawtimber (25.40 cm+ dbh) White Spruce	Balsam Fir	Pine	Aspen	Total
Athabasca	2 284	15 574	7 787	1 954	36 047	24 239	85 601	20 445	963	14 611	19 029	55 048
Bow-Crow	753	8 410	538	2 633	19 454	2 803	33 838	8 948	1 586	11 044	1 642	23 220
Clearwater-Rocky	1 052	11 978	6 003	2 577	31 658	11 780	63 996	12 828	1 699	18 831	12 771	46 129
Edson	1 535	21 181	4 899	4 899	70 084	16 282	117 345	21 181	3 256	37 491	13 875	75 803
Footner Lake	2 592	35 368	10 732	3 228	8 580	60 060	117 968	42 872	2 152	4 276	36 812	86 112
Grande Prairie	1 331	20 558	7 249	3 625	33 867	39 785	105 084	31 432	2 407	21 776	35 368	90 983
Lac La Biche	807	11 128	7 929	1 048	10 590	23 814	54 509	16 395	538	5 295	21 974	44 202
Peace River	1 209	15 603	6 371	1 416	14 866	37 435	75 691	22 653	1 416	8 495	28 232	60 796
Slave Lake	1 965	31 177	11 213	2 492	18 689	61 193	124 764	46 128	2 492	12 459	71 840	132 919
Whitecourt	979	17 528	4 389	2 633	22 795	25 967	73 312	22 795	1 755	15 801	28 118	68 469
TOTAL	14 507	188 505	67 110	26 505	266 630	303 358	852 108	245 677	18 264	150 079	269 661	683 681

[1] See Table 27A for Canadian equivalents.

[2] Area and volumes represent crown forest land producing or capable of producing crops of industrial wood. Data exclude leased lands, wilderness areas, Métis colonies, protection forests, and "O" areas.

SOURCE: Volumes by species based on Table 25 in consultation with Statistics Section, Timber Management Branch, Alberta Forest Service.

Table 27A. GROSS MERCHANTABLE VOLUME OF PRIMARY GROWING STOCK ON PRODUCTIVE CROWN FOREST LAND IN ALBERTA BY SIZE CLASS AND SPECIES[1]

Forest	Area (000's acres)	Size Class: Pulpwood (4"-9" dbh) White Spruce	Black Spruce	Balsam Fir	Pine	Aspen	Total	Sawtimber (10"+ dbh) White Spruce	Balsam Fir	Pine	Aspen	Total
Athabasca	5 644	550	275	69	1 273	856	3 023	722	34	516	672	1 944
Bow-Crow	1 861	297	19	93	687	99	1 195	316	56	390	58	820
Clearwater-Rocky	2 600	423	212	91	1 118	416	2 260	453	60	665	451	1 629
Edson	3 793	748	173	173	2 475	575	4 144	748	115	1 324	490	2 677
Footner Lake	6 406	1 249	379	114	303	2 121	4 166	1 514	76	151	1 300	3 041
Grande Prairie	3 289	726	256	128	1 196	1 405	3 711	1 110	85	769	1 249	3 213
Lac La Biche	1 993	393	280	37	374	841	1 925	579	19	187	776	1 561
Peace River	2 987	551	225	50	525	1 322	2 673	800	50	300	997	2 147
Slave Lake	4 856	1 101	396	88	660	2 161	4 406	1 629	88	440	2 537	4 694
Whitecourt	2 420	619	155	93	805	917	2 589	805	62	558	993	2 418
TOTAL	35 849	6 657	2 370	936	9 416	10 713	30 092	8 676	645	5 300	9 523	24 144

[1] Area and volumes represent crown forest land producing or capable of producing crops of industrial wood. Data exclude leased lands, wilderness areas, Métis colonies, protection forests, and "O" areas.

SOURCE: Volumes by species based on Table 25 in consultation with Statistics Section, Timber Management Branch, Alberta Forest Service.

major part of the coniferous volume in any one Forest is contained in the smaller class. Of the more important commercial species (white spruce and the pine group) 455 million m^3 (16.1 billion ft^3) are found in the smaller and 396 million m^3 (14.0 billion ft^3) in the larger class. All of the black spruce volume is found in the pulpwood class.

The deciduous volume is fairly well distributed between the two diameter groups, with 53% in the pulpwood and 47% in the sawtimber class. Trembling aspen and balsam poplar account for most of the hardwood volume.

CURRENT FOREST PRODUCTION

The total volume of timber harvested from Alberta's forest lands in fiscal 1972 was 4.9 million m^3 (172.3 million ft^3). Eighty-seven percent of this volume was harvested from provincial crown lands, 2% from federal land, and the remainder from private lands. Production from these three supply areas during the period 1960-72 is shown in Table 28 and Figure 3.

Although the total volume harvested in the province increased by 16% during the period, there were noticeable fluctuations in the volumes harvested from year to year. Unfavorable market conditions at home and in the United States for several major products caused production setbacks on more than one occasion. The harvest in 1961, for example, decreased by some 852 m^3 (30 million ft^3), or 20%, from the previous year. Although total volume harvested from provincial crown land showed a slight increase of some 154 000 m^3 (5.4 million ft^3), production from private holdings was the main reason for the overall provincial decline. Total cut from this source dropped by more than half from 1.8 to .8 million m^3 (62 to 27 million ft^3).

Table 28. ANNUAL CUT IN ALBERTA, 1960-72[1] (000's m^3)

Fiscal Year[2]	Provincial Crown Land[3]	% of Total Cut	Federal Crown Land[4]	% of Total Cut	Private Land[5]	% of Total Cut	Total Cut[6]
1960-61	2 291	54	157	4	1 756	42	4 204
1961-62	2 445	73	155	5	752	22	3 352
1962-63	2 732	73	232	6	765	21	3 729
1963-64	3 350	69	961	20	523	11	4 834[7]
1964-65	3 009	85	177	5	338	10	3 524
1965-66	2 807	78	162	5	621	17	3 590
1966-67	2 989	81	213	6	487	13	3 689
1967-68	2 549	81	251	8	350	11	3 150
1968-69	3 306	89	280	8	117	3	3 703
1969-70	3 653	89	387	9	88	2	4 128
1970-71	3 333	80	271	7	540	13	4 144
1971-72	3 387	82	160	4	587	14	4 134
1972-73	4 262	87	118	2	498	11	4 878

[1] See Table 28A for Canadian equivalents.

[2] April 1 to March 31 for the year indicated.

[3] Timber Management Branch, Alberta Forest Service. Production data shown in this tabulation do not coincide with those given in the Department's annual reports for the same period. Late timber production returns and additional production detected by field audits have been included in the statistics of this tabulation but not in those of the annual reports.

[4] Forest Management Institute,Canada Department of the Environment. Federal lands include Indian Reserves, Military Areas, National Parks, and Forest Experiment Stations.

[5] Calculated as the difference between production from "provincial and federal crown lands" and "total cut".

[6] Statistics Canada. Canadian Forestry Statistics. Cat. No. 25-202. Annual.

[7] Published statistics for 1963 denote Alberta's total cut as less than the total volume harvested from provincial and federal crown land. An estimate was made for production on private lands (farm and other lands) and the total cut adjusted accordingly.

Table 28A. ANNUAL CUT IN ALBERTA, 1960-72 (000's ft^3)

Fiscal Year[1]	Provincial Crown Land[2]	% of Total Cut	Federal Crown Land[3]	% of Total Cut	Private Land[4]	% of Total Cut	Total Cut[5]
1960-61	80 913	54	5 559	4	62 013	42	148 485
1961-62	86 337	73	5 484	5	26 569	22	118 390
1962-63	96 474	73	8 205	6	27 027	21	131 706
1963-64	118 325	69	33 952	20	18 470	11	170 747[6]
1964-65	106 257	85	6 266	5	11 952	10	124 475
1965-66	99 154	78	5 517	5	21 913	17	126 584
1966-67	105 558	81	7 523	6	17 187	13	130 268
1967-68	90 022	81	8 875	8	12 368	11	111 265
1968-69	116 753	89	9 877	8	4 139	3	130 769
1969-70	128 994	89	13 660	9	3 119	2	145 773
1970-71	117 691	80	9 558	7	19 082	13	146 331
1971-72	119 612	82	5 654	4	20 744	14	146 010
1972-73	150 531	87	4 173	2	17 593	11	172 297

[1] April 1 to March 31 for the year indicated.

[2] Timber Management Branch, Alberta Forest Service. Production data shown in this tabulation do not coincide with those given in the Department's annual reports for the same period. Late timber production returns and additional production detected by field audits have been included in the statistics of this tabulation but not in those of the annual reports.

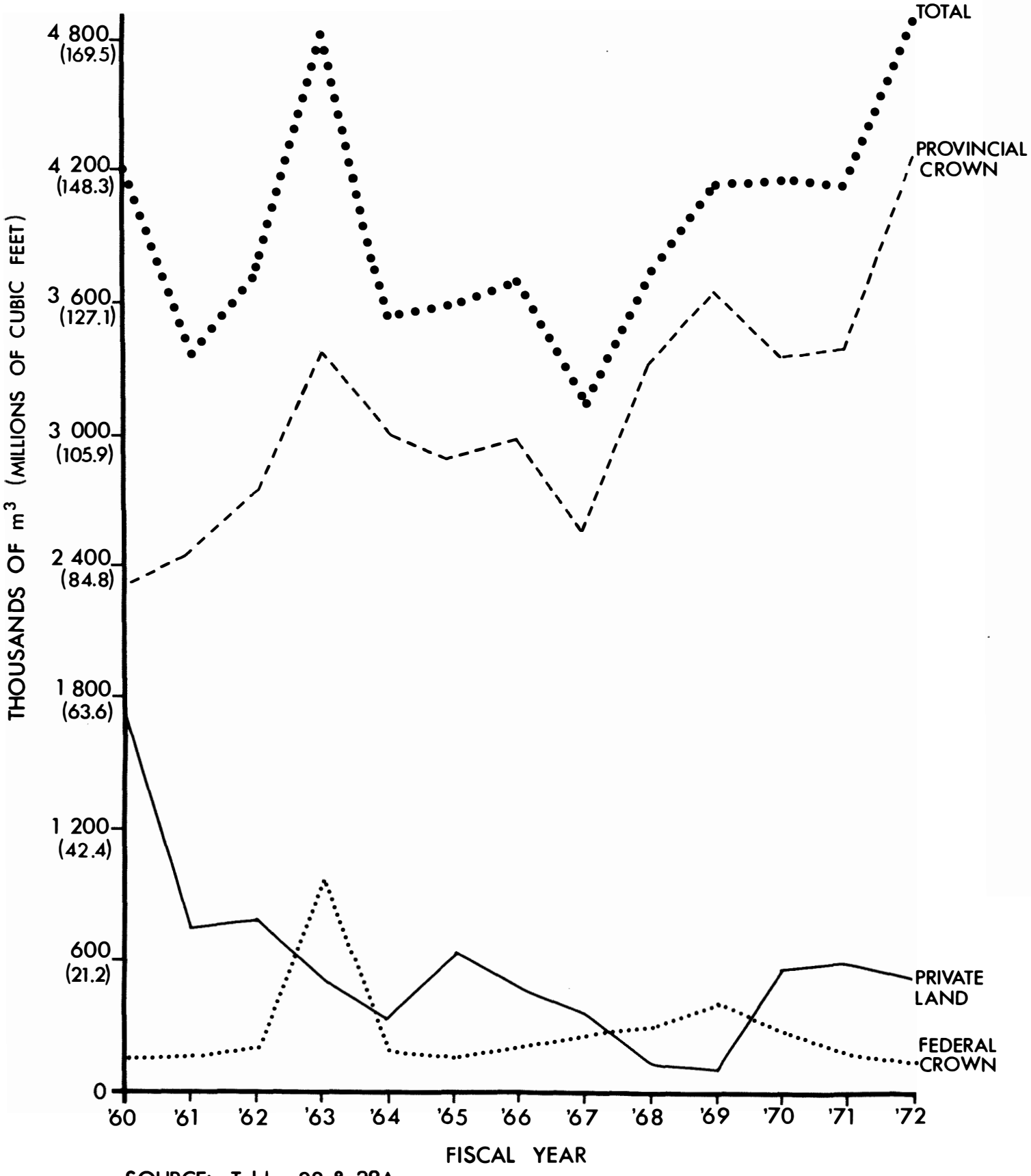
[3] Forest Management Institute, Canada Department of the Environment. Federal lands include Indian Reserves, Military Areas, National Parks, and Forest Experiment Stations.

[4] Calculated as the difference between production from "provincial and federal crown lands" and "total cut".

[5] Statistics Canada. Canadian Forestry Statistics. Cat. No. 25-202. Annual.

[6] Published statistics for 1963 denote Alberta's total cut as less than the total volume harvested from provincial and federal crown land. An estimate was made for production on private lands (farm and other lands) and the total cut adjusted accordingly.

FIG. 3. ANNUAL CUT IN ALBERTA 1960-1972.



SOURCE: Tables 28 & 28A.

Alberta's provincial cut expanded rapidly during the next few years due mainly to strong market demand for most products. In 1964, however, market conditions softened, particularly for lumber. Total cut dropped 1.3 million m^3 (46 million ft^3), or 27%, from the 1963 level of 4.8 million m^3 (171 million ft^3).

In 1967 unfavorable market conditions affected both the pulp and lumber producing industries, reducing the annual harvest to its lowest level in the 13-year period. Since 1967, except for a minor set-back in 1971, total cut expanded rapidly, reaching peak production for the period in 1972. The pronounced upswing in the cut in 1972 (despite declines on federal and private lands) can be credited mainly to the healthy markets that prevailed domestically and in the United States for both lumber and pulp products, and to the commencement of pulpwood logging operations on the Procter and Gamble Cellulose Ltd. lease area at Grande Prairie.

The growing importance of public timber is reflected in the fact that the cut from private and federal crown land peaked in 1960 and 1963, respectively, while the cut from public lands continued to expand (in both relative and absolute terms), reaching its peak for the period in 1972. Except for two years, 1960 and 1963, the harvest from public lands comprised no less than 70% of the total provincial harvest.

Harvest statistics (Table 29) show that sawmilling is Alberta's No. 1 forest industry. In each year except 1960 the harvesting of sawtimber accounted for at least 60% of the total cut. The annual volume harvested during the period increased by 136%, rising from 1.4 million m^3 (47.7 million ft^3) in 1960 to 3.2 million m^3 (112.6 million ft^3) in 1972.

Table 29. PRODUCTION OF SAWTIMBER, PULPWOOD, AND OTHER PRODUCTS FROM PROVINCIAL FOREST LANDS, ALBERTA[1]

Fiscal Year	Sawtimber Production[2]	Pulpwood Production	Other Production[3]	Total
	thousands of cubic metres			
1960-61	1 350	760	181	2 291
1961-62	1 675	621	149	2 445
1962-63	1 798	639	295	2 732
1963-64	2 221	791	338	3 350
1964-65	1 882	907	220	3 009
1965-66	1 752	859	196	2 807
1966-67	1 920	878	191	2 989
1967-68	1 754	565	230	2 549
1968-69	2 529	650	127	3 306
1969-70	2 669	862	122	3 653
1970-71	2 544	650	139	3 333
1971-72	2 565	724	98	3 387
1972-73	3 188	972	102	4 262

[1] See Table 29A for Canadian equivalents.

[2] Includes peeler logs used in plywood manufacture.

[3] Includes products such as post, poles, piling, fuelwood, railway ties, etc.

SOURCE: Appendix C, Tables 1 to 10

TABLE 29A. PRODUCTION OF SAWTIMBER, PULPWOOD, AND OTHER PRODUCTS FROM PROVINCIAL FOREST LANDS, ALBERTA

Fiscal Year	Sawtimber Production[1]	Pulpwood Production	Other Production[2]	Total
	thousands of cubic feet			
1960-61	47 663	26 857	6 393	80 913
1961-62	59 151	21 917	5 269	86 337
1962-63	63 482	22 580	10 412	96 474
1963-64	78 432	27 948	11 945	118 325
1964-65	66 481	32 023	7 753	106 257
1965-66	61 875	30 345	6 934	99 154
1966-67	67 792	31 008	6 758	105 558
1967-68	61 938	19 968	8 116	90 022
1968-69	89 297	22 968	4 488	116 753
1969-70	94 259	30 433	4 302	128 994
1970-71	89 829	22 949	4 913	117 691
1971-72	90 565	25 581	3 466	119 612
1972-73	112 587	34 336	3 606	150 531

[1] Includes peeler logs used in plywood manufacture.

[2] Includes products such as post, poles, piling, fuelwood, railway ties, etc.

SOURCE: Appendix C, Tables 1 to 10

Pulpwood is the second most important product harvested annually from public forest lands. Cut during the period fluctuated between a low of 565 000 m^3 (20 million ft^3) in 1967 to a high of 972 000 m^3 (34 million ft^3) in 1972. The sharp increase in production in 1972 was due, as mentioned above, mainly to the commencement of logging operations on the Procter and Gamble lease area at Grande Prairie. Until that time, the major consumer of pulpwood was North Western Pulp and Power Ltd. at Hinton.

"Other" production includes products such as railway ties, piling, posts, poles, lath bolts, fuelwood, etc. In aggregate, the total volume harvested annually has not been significant, fluctuating between 2% and 11% of the total production from crown lands. In recent years production has tended to decline.

ALLOWABLE ANNUAL CUT[3]

The organization and control of the growing stock for a sustained yield of forest products from a specific forest area has traditionally been called forest regulation. It performs the vital task of balancing the yield or production from the forest with the growth or productive capacity (Meyer et. al., 1961). Because the forested area, growing stock, and utilization standards are constantly changing, allowable cut calculations are only valid for a short time.

In Alberta the allowable annual cut is calculated using the von Mantel formula[4] with some modifications (Alberta Department of Lands

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[3] An expression of the volume of wood that may be removed from a properly managed area each year in perpetuity.

[4] The formula is useful as a quick and easy method of estimating the allowable annual cut from limited information. This information consists of 1) volume of growing stock and 2) rotation age of species. It is expressed as:

$$A.A.C. = \frac{\text{total volume of growing stock}}{\text{one half of the rotation age}}$$

and Forests, 1970). The von Mantel formula was applied to the gross forest inventory in each forest management unit using varying rotation ages of 80 to 120 years for coniferous species and 70 years for deciduous species. A deduction for cull, 5 to 15% for coniferous species and 25% for deciduous species, as well as an anticipated annual forest fire loss of 0.1% of the forest areas were applied to the gross allowable annual cut.

As shown in Table 30, Alberta's net allowable annual cut, all species, is 25.8 million m^3 (912 million ft^3). Of this, the coniferous allowable cut is 14.1 million m^3 (498.6 million ft^3) and the deciduous cut 11.7 million m^3 (413.4 million ft^3). The comparison of the actual and allowable cut by Forest shows that the 1972 coniferous harvest of 4.2 million m^3 (147.4 million ft^3) was 30% of the permissible cut. On this basis a surplus of some 9.9 million m^3 (351.2 million ft^3) of conifer timber theoretically exists. All Forests have surplus fiber available which, based on 1972 production, ranges from a low of .5 million m^3 (19.3 million ft^3) in the Bow-Crow Forest to a high of 1.6 million m^3 (56.0 million ft^3) in the Edson Forest. Comparison of 1972 production by Forest shows that the intensity of cut was lightest in the Athabasca Forest at 5% of the permissible cut, and heaviest in the Edson Forest at 44%. The combined production of the four east slope Forests, the region in which most of Alberta's forest industry is located, amounted to 2.3 million m^3 (80 million ft^3), or 54% of the total volume of coniferous wood harvested.

Alberta's hardwood growing stock is virtually untapped. A total of 88 800 m^3 (3.1 million ft^3), mainly sawtimber material, was

Table 30. ALLOWABLE ANNUAL CUT, ACTUAL CUT, AND ESTIMATED TIMBER SURPLUS BY FOREST, ALBERTA[1] (thousands of cubic metres)

Timber Type and Forest	Estimated Allowable Annual Cut	Actual Cut 1972	% of A.A.C.	Estimated Surplus
SOFTWOOD				
Athabasca	1 342	65	5	1 277
Bow-Crow	784	238	30	546
Clearwater-Rocky	1 308	193	15	1 115
Edson	2 829	1 243	44	1 586
Footner Lake	1 478	391	26	1 087
Grande Prairie	1 648	578	35	1 070
Lac La Biche	742	127	17	615
Peace River	988	306	31	682
Slave Lake	1 744	725	42	1 019
Whitecourt	1 254	309	25	945
TOTAL	14 117	4 175	30	9 942
HARDWOOD				
Athabasca	883	-	-	883
Bow-Crow	91	n.s.[2]	-	91
Clearwater-Rocky	501	5.7	1	495
Edson	617	5.7	1	611
Footner Lake	1 979	-	-	1 979
Grande Prairie	1 535	-	-	1 535
Lac La Biche	934	n.s.	-	934
Peace River	1 342	n.s.	-	1 342
Slave Lake	2 718	74	3	2 644
Whitecourt	1 104	n.s.	-	1 104
TOTAL	11 704	88.8	1	11 618
All species	25 821	4 264	17	21 560

[1] See Table 30A for Canadian equivalents.

[2] Harvesting of deciduous timber occurred in these Forests during 1972 but not in sufficient quantities to be recorded.

SOURCE: Alberta Department of Lands and Forests. 1970. Net Allowable Annual Cuts by Forest Units and Forests. Timber Management Branch, Alberta Forest Service. April, 1970.

Appendix C, Tables 1 to 10

Table 30A. ALLOWABLE ANNUAL CUT, ACTUAL CUT, AND ESTIMATED TIMBER SURPLUS BY FOREST, ALBERTA (millions of cubic feet)

Timber Type and Forest	Estimated Allowable Annual Cut	Actual Cut 1972	% of A.A.C.	Estimated Surplus
SOFTWOOD				
Athabasca	47.4	2.3	5	45.1
Bow-Crow	27.7	8.4	30	19.3
Clearwater-Rocky	46.2	6.8	15	39.4
Edson	99.9	43.9	44	56.0
Footner Lake	52.2	13.8	26	38.4
Grande Prairie	58.2	20.4	35	37.8
Lac La Biche	26.2	4.5	17	21.7
Peace River	34.9	10.8	31	24.1
Slave Lake	61.6	25.6	42	36.0
Whitecourt	44.3	10.9	25	33.4
TOTAL	498.6	147.4	30	351.2
HARDWOOD				
Athabasca	31.2	-	-	31.2
Bow-Crow	3.2	n.s.[1]	-	3.2
Clearwater-Rocky	17.7	.2	1	17.5
Edson	21.8	.2	1	21.6
Footner Lake	69.9	-	-	69.9
Grande Prairie	54.2	-	-	54.2
Lac La Biche	33.0	n.s.	-	33.0
Peace River	47.4	n.s.	-	47.4
Slave Lake	96.0	2.6	3	93.4
Whitecourt	39.0	n.s.	-	39.0
TOTAL	413.4	3.1	1	410.3
All species	912.0	150.5	17	761.5

[1] Harvesting of deciduous timber occurred in these Forests during 1972 but not in sufficient quantities to be recorded.

SOURCE: Alberta Department of Lands and Forests. 1970. Net Allowable Annual Cuts by Forest Units and Forests. Timber Management Branch, Alberta Forest Service. April, 1970.

Appendix C, Tables 1 to 10

harvested in 1972. This harvest represented approximately 1% of the deciduous allowable cut of 11.7 million m^3 (413.4 million ft^3). Most logging operations were centered in the Slave Lake Forest where fiber was harvested for delivery to the North America Stud Company Ltd. sawmill near the town of Slave Lake.

CHAPTER IV

PRODUCTION AND MARKETS OF ALBERTA'S FOREST INDUSTRIES IN 1972

Alberta's forest industries had gross sales of over $165 million and net sales of nearly $150 million in 1972. Sawmill and planing mill groups combined accounted for 52% of gross sales, paper and allied industries for 29%, veneer and plywood mills for 12%, and the wood preservation industry for 7%. Major products sold included 1.5 million m^3 (618 million fbm) of lumber; 277 000 t (330 000 tons) of pulp, paper, fiberboard, and related products; 172 million m^2, 1-mm basis (1169 million ft^2, 1/16" basis) of plywood; and nearly 3.4 million pieces of pressure-treated wood products. Minor products included wood shavings, pulpwood, sawdust, and logs.

SAWMILL AND PLANING MILL INDUSTRY

The 222 Alberta sawmills and planing mills operating in 1972 produced 1 457 458 m^3 (617 652 Mfbm) of rough-sawn lumber, of which 1 356 853 m^3 (575 014 Mfbm) or 93% was planed. As the backbone of the province's forest industry, these activities accounted for 52% of gross sales and 54% of net sales.

This study categorized the industry into six size classes in order to reduce survey costs through sampling and to analyze some of the differences among mills relating to the volume of lumber produced. The strata representing the smallest mills had 130 firms while one stratum covered only 5 of the larger mills (Table 31). The independent planing mills were completely enumerated as well, and for purposes of analysis these mills are identified as "Class 7" in Tables 31, 32, 34, 35, and 36. A dominant feature of

Table 31. ALBERTA LUMBER PRODUCTION AND MARKETING BY MILL CLASS, 1972

Mill Class	Firms in Mill Class	Total Rough Lumber Sawn	Total Final Lumber Production[1]	Transfers Out	Transfers In	Net Intra-Industry Transfers	Rough Lumber Marketings	Planed Lumber Marketings
				m^3				
				Mfbm				
1	130	25 734	18 800	6 934	-	6 934	15 068	3 732
		10 904	7 965	2 939	-	2 939	6 384	1 581
2	55	240 140	146 061	94 834	755	94 079	58 517	87 544
		101 767	61 899	40 188	320	39 868	24 798	37 101
3	9	155 549	152 027	3 522	-	3 522	17 032	134 995
		65 918	64 425	1 493	-	1 493	7 217	57 208
4	5	167 957[2]	138 988[2]	39 588	10 619	28 969	6 333	132 655[2]
		71 192[2]	58 916[2]	16 776	4 500	12 276	2 690	56 266[2]
5	6	210 277	90 852	120 855	1 430	119 425	2 124	88 778
		89 110	38 500	51 216	606	50 610	900	37 600
6	8	671 959	765 906	52 357	146 304	-93 947	5	765 901
		284 761	324 573	22 188	62 000	-39 812	2	324 571
7[3]	9	-	158 982	-	158 982	-158 982	1 526	157 456
		-	67 374	-	67 374	-67 374	647	66 727
TOTAL		1 471 616[2]	1 471 616[2]	318 090	318 090	0	100 605	1 371 011[2]
		623 652[2]	623 652[2]	134 800	134 800	0	42 638	581 014[2]

[1] Everywhere in this report production figures given are based on this column.

[2] Includes 14 158 m^3 (6 000 Mfbm) of previous years' inventory of rough sawn lumber.

[3] Independent planing mills survey.

SOURCE: Appendix D, Tables 1(A)-7(A)

this industry was the large volume or rough-sawn lumber moving to other sawmills or planing mills for finishing before being sold. These intra-industry transfers occurred within classes as well as among size classes, and totalled 318 090 m^3 (134 800 Mfbm) in 1972, or 21.8% of total rough lumber sawn (Table 31).

These intra-industry transfers originated in all of the six sawmill classes, and of all classes, only Classes 1 and 3 did not market lumber cut by other mill classes. Table 31 shows the aggregated transfers, both in and out, of each mill class for 1972. The Net Intra-Industry Transfers column shows the difference between the amount of rough lumber shipped out by mills in the r respective classes, and the amount of rough lumber brought in to the mills for finishing.

As expected, the smaller mills planed a significantly smaller proportion of their final production than did the larger mills. While Classes 1 and 2 planed 19.8 and 59.9% of their output respectively, Classes 3, 4 and 5 planed 88.8, 95.4, and 97.7% respectively (Table 32). The remaining two mill classes planed over 99% of their final output. In many cases small mills were operated by farmers on a part-time basis for their own needs or neighbours. Much of their rough lumber was sold to other mills in Alberta for planing, or used in the construction and repair of farm buildings.

Dimension material[1] was by far the most important product group

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[1] Dimension lumber refers to all sawn material in the 5.08 cm (2 in.) thick class of any width and length. Board lumber refers to all sawn material in the 2.54 cm (1 in.) thick class of any width and length.

Table 32. ALBERTA LUMBER MARKETINGS BY SIZE CLASS AND FINISHED PRODUCT, 1972[1]

	Mill Class 1	2	3	4	5	6	7[2]	Quantity Marketed	%
				m^3					
Board Lumber 2.54 cm (1")									
Planed	554	10 342	26 679	41 475	10 737	44 702	13 464	147 953	10.1
Rough	2 099	4 302	356	1 971	-	-	-	8 728	0.6
Dimension Lumber 5.08 cm (2")									
Planed	3 178	77 202	104 908	91 180	77 991	721 199	143 992	1 219 650	82.8
Rough	7 229	45 413	7 719	3 889	-	-	-	64 250	4.4
Other Sawn Products									
Planed	-	-	3 408	-	-	-	-	3 408	0.2
Rough	5 739	8 802	8 957	473	2 124	5	1 527	27 627	1.9
Quantity Marketed	18 799	146 061	152 027	138 988[3]	90 852	765 906	158 983	1 471 616[3]	
% Sold Planed	19.8	59.9	88.8	95.4	97.7	100.0	99.0	93.2	
% Sold Rough	80.2	40.1	11.2	4.6	2.3	0.0	1.0	6.8	

[1] See Table 32A for Canadian equivalents.

[2] Independent planing mills survey.

[3] Includes 14 158 m^3 taken from inventory during 1972 for planing.

SOURCE: Appendix D, Tables 1-7

Table 32A. ALBERTA LUMBER MARKETINGS BY SIZE CLASS AND FINISHED PRODUCT, 1972

	Mill Class 1	2	3	4	5	6	7[1]	Quantity Marketed	%
	Mfbm								
Board Lumber 2.54 cm (1")									
Planed	235	4 384	11 306	17 577	4 550	18 944	5 707	62 703	10.1
Rough	889	1 823	150	841	-	-	-	3 703	0.6
Dimension Lumber 5.08 cm (2")									
Planed	1 346	32 717	44 458	38 649	33 050	305 627	61 020	516 867	82.8
Rough	3 063	19 245	3 271	1 649	-	-	-	27 228	4.4
Other Sawn Products									
Planed	-	-	1 444	-	-	-	-	1 444	0.2
Rough	2 432	3 730	3 796	200	900	2	647	11 707	1.9
Quantity Marketed	7 965	61 899	64 425	58 916[2]	38 500	324 573	67 374	623 652[2]	
% Sold Planed	19.8	59.9	88.8	95.4	97.7	100.0	99.0	93.2	
% Sold Rough	80.2	40.1	11.2	4.6	2.3	0.0	1.0	6.8	

[1] Independent planing mills survey.

[2] Includes 6000 Mfbm taken from inventory during 1972 for planing.

SOURCE: Appendix D, Tables 1A-7A.

(87.2%) (Table 33). Of the total quantity of lumber produced, 2x4's dominated with 59.7%, followed by 2x6's and 2x8-12's at about 13.7% each. Board lumber was comprised of 1x4's (5.1%), 1x6's (3.3%), and 1x8-12's (2.3%). The only other product of some importance was railway ties which represented 1.2% of total production.

A review of Alberta's lumber products revealed that 66.4% of total production was exported to the United States (Table 34). All classes, except Class 1, sold lumber to the U.S.A. As well, the larger the mill the greater the proportion of its actual production exported. Of the 33.6% of Alberta's lumber marketed in Canada, Alberta accounted for 25.6%, the rest of Western Canada 4.9%, and Eastern Canada 3.0%.

White spruce dominated total final production at 74.1% (Table 35). Pine, mainly lodgepole, represented 21.6%, and the remaining 4.3% was made up of balsam fir and poplar. It is apparent that the sawmill industry is based on softwoods and strongly influenced by export markets.

Except for the independent planing mills, rail transportation took on an increasing importance with larger mills as the means of moving lumber to market (Table 36). For example, Class 1 moved all its product by truck while Class 6 shipped over 95% of its lumber by rail. At least two features of the industry explain this change in transport mode. First, the larger mills have sufficient quantity to fill rail cars regularly, and secondly, because rail transport is cheaper than truck for long hauls, these mills can penetrate the large markets of the U.S. and

Table 33. LUMBER PRODUCTS FROM ALBERTA SAWMILLS AND PLANING MILLS, 1972[1]

Lumber Products	Size Group cm	Size Group in.	Sold as Rough m^3	Sold as Rough Mfbm	Sold as Planed m^3	Sold as Planed Mfbm	Total m^3	Total Mfbm	%
Board	2.54 x 10.16	1x4	3 389	1 436	71 245	30 193	74 634	31 629	5.1
	2.54 x 15.24	1x6	3 522	1 498	44 526	18 869	48 048	20 367	3.3
	2.54 x 20.32-30.48	1x8-12	1 817	769	32 182	13 641	33 999	14 410	2.3
Dimension	5.08 x 5.08-10.16	2x2-4	8 285	3 510	871 670	369 403	879 955	372 913	59.7
	5.08 x 15.24	2x6	25 398	10 764	177 566	75 248	202 964	86 012	13.8
	5.08 x 20.32-30.48	2x8-12	30 567	12 954	170 414	72 216	200 981	85 170	13.7
Timbers	7.62 cm+	3+	5 589	2 368	-	-	5 589	2 368	0.4
	10.16 cm+	4+	2 810	1 190	76	32	2 886	1 222	0.2
Other Lumber	-	-	-	-	3 332	1 412	3 332	1 412	0.2
Ties			17 319	7 340	-	-	17 319	7 340	1.2
Laths			1 909	809	-	-	1 909	809	0.1
	TOTAL		100 605	42 638	1 371 011[2]	581 014[2]	1 471 616[2]	623 652[2]	100.0

[1] This table is based on total final production which is net of transfers. The intra-industry transfers of 318 090 m^3 (134 800 Mfbm) of rough lumber was marketed as rough, then finished and remarketed. This table shows only the final marketings.

[2] Includes 14 158 m^3 (6000 Mfbm) of lumber planed that was from previous year's inventory of rough sawn lumber.

SOURCE: Appendix D, Tables 1(A)-7(A)

Table 34. MARKETINGS OF ALBERTA'S LUMBER BY MILL CLASS, 1972[1]

Markets	Mill Class 1	2	3	4	5	6	7[2]	Total	%
	---------- m^3 ----------								
	---------- Mfbm ----------								
Alberta	18 799	136 919	112 142	16 654	14 367	34 988	42 845	376 714	25.6
	7 965	58 024	47 523	7 003	6 088	14 827	18 159	159 589	
Western Canada	-	3 172	10 403	15 037	5 735	35 528	1 973	71 848	4.9
	-	1 345	4 408	6 433	2 431	15 056	836	30 509	
Eastern Canada	-	-	2 294	4 939	2 018	9 385	26 052	44 688	3.0
	-	-	972	2 103	855	3 977	11 040	18 947	
TOTAL CANADA	18 799	140 091	124 839	36 630	22 120	79 901	72 397[3]	494 777[3]	33.6
	7 965	59 369	52 903	15 539	9 374	33 860	30 682[3]	209 692[3]	
United States	-	5 970	27 188	102 358	68 732	686 005	86 586	976 839	66.4
	-	2 530	11 522	43 377	29 126	290 713	36 692	413 960	
TOTAL FOREIGN	-	5 970	27 188	102 358	68 732	686 005	86 586	976 839	66.4
	-	2 530	11 522	43 377	29 126	290 713	36 692	413 960	
GRAND TOTAL	18 799	146 061	152 027	138 988[4]	90 852	765 906	158 983	1 471 616[4]	100.0
	7 965	61 899	64 425	58 916[4]	38 500	324 573	67 374	623 652[4]	

[1] This table is based on total final production which is net of transfers. The intra-industry transfer of 318 090 m^3 (134 800 Mfbm) was marketed in Alberta by the various mill classes as shown in Table 31.

[2] Independent planing mills survey.

[3] Includes 1527 m^3 (647 Mfbm) of rough timber sent to various parts of Canada.

[4] Includes 14 158 m^3 (6000 Mfbm) taken from inventory of previous year's rough-sawn lumber.

SOURCE: Appendix D, Tables 1(A)-7(A)

Table 35. SPECIES MIX OF ALBERTA LUMBER MARKETED IN 1972[1]

Mill Class	Spruce		Pine		Fir and Other		Poplar	
	m^3	Mfbm	m^3	Mfbm	m^3	Mfbm	m^3	Mfbm
1	8 142	3 451	9 323	3 950	105	44	1 229	520
2	102 201	43 311	28 371	12 024	14 783	6 265	706	299
3	85 876	36 391	66 151	28 034	-	-	-	-
4	88 415[2]	37 469[2]	40 155[2]	17 032[2]	10 418[2]	4 415[2]	-	-
5	59 056	25 026	2 240	949	-	-	29 556	12 525
6	600 453	254 459	165 453	70 114	-	-	-	-
7[3]	145 696	61 742	5 486	2 325	3 344	1 418	4 457	1 889
TOTAL	1 089 839[2]	461 849[2]	317 179[2]	134 428[2]	28 650[2]	12 142[2]	35 948	15 233
%	74.1		21.6		1.9		2.4	

[1] This table is based on total final production which is net of the intra-industry transfers of 318 090 m^3 (134 800 Mfbm).

[2] Included 14 158 m^3 (6000 Mfbm) of previous year's inventory of rough-sawn lumber.

[3] Independent planing mills survey.

SOURCE: Appendix D, Tables 1(A)-7(A)

Table 36. MODE OF TRANSPORTATION FOR ALBERTA LUMBER PRODUCTION, 1972[1]

Mill Class	Mode of Transportation: Truck			Rail			Class Total	
	m^3	Mfbm	% of class total	m^3	Mfbm	% of class total	m^3	Mfbm
1	18 799	7 965	100.0	-	-	0.0	18 799	7 965
2	132 423	56 119	90.7	13 638	5 780	9.3	146 061	61 899
3	116 650	49 433	76.7	35 377	14 992	23.3	152 027	64 425
4	23 736	10 065	17.1	115 252	48 851	82.9	138 988[2]	58 916[2]
5	17 885	7 579	19.7	72 967	30 921	80.3	90 852	38 500
6	35 263	14 943	4.6	730 643	309 630	95.4	765 906	324 573
7[3]	76 846	32 567	48.3	82 137	34 807	51.7	158 983	67 374
TOTAL	421 602	178 671	28.6	1 050 014	444 981	71.4	1 471 616[2]	623 652[2]

[1] This table is based on total final production which is net of intra-industry transfers of 318 090 m^3 (134 800 Mfbm) that were transported by truck to other firms before final marketing.

[2] Includes 14 158 m^3 (6000 Mfbm) taken from previous year's rough sawn lumber inventory that was finished and marketed.

[3] Independent planing mills survey.

SOURCE: Appendix D, Tables 1-7

Canada. The opposite is true of the smaller mills. Overall, rail transportation moved nearly three times as much lumber as did truck, with rail accounting for about 71%. (This excludes the movement by truck of intra-industry transfers of 318 090 m^3 (134 800 Mfbm) of rough lumber.)

Aggregating all production by product and size groups demonstrates the influence of large stud mills on the mix of lumber products manufactured. Studs were the most important commodity, amounting to nearly 60% of all lumber produced. Most of these studs were kiln dried, dressed (planed) on four sides with eased edges, exported to the United States by rail in lifts (bundles), and precision end trimmed to various lengths. The major lengths were 243.84 cm (96 in.) and 235.267 cm (92½ in.), with smaller quantities at 228.6 cm (90 in.), 213.36 cm (84 in.), and 182.99 cm (72 in.). The major use was new residential housing construction in the U.S., with smaller but significant quantities going to the mobile home and trailer industry.

PAPER AND ALLIED INDUSTRY

With gross sales of almost $48 million (net sales of nearly $40 million) this industry ranked second to sawmilling. Its four firms produced kraft pulp, fiberboard, construction papers, and tall oil (Table 37). These products were marketed in a variety of grades, shapes, and sizes both domestically and internationally. Ninety percent of kraft pulp produced was marketed in the United States and the remaining 10% was sold in Canada (Table 38). Of this very little was marketed in Alberta. Tall oil, a by-product of the sulphate pulping of resinous woods, was

exported primarily to Japan (Table 38). Fiberboard, pearl paper, and roofing felts were marketed mainly in Western Canada, with a large percentage being consumed by Alberta industry. About 10% was exported to the U.S. market.

Table 37. ALBERTA'S PAPER AND ALLIED INDUSTRY PRODUCTION, 1972

Product	Units		Quantity		Gross Sales $
Pulp	tonnes	tons	187 787	207 000	X
Paper	tonnes	tons	14 515	16 000	X
Tall Oil	tonnes	tons	10 886	12 000	X
Fiberboard	m^2 (1 mm basis)	M sq ft (½" basis)	112 088	95 000	X
Asphalt Shingles	tonnes	tons	X	X	X
TOTAL					47 862 927

X - Confidential

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Since the majority of products produced by the paper and allied industry group are exported outside of Alberta and Canada, the income and employment multipliers generated by secondary processing industry are necessarily low. However, relatively high wages in the industry do create significant consumption multipliers in the province. Another feature of this industry is that its firms sell in international markets that are very large and price-competitive as far as Alberta firms are concerned.

VENEER AND PLYWOOD INDUSTRY

Three firms comprised the veneer and plywood industry group. With gross sales in 1972 of nearly $21 million ($18.3 million net sales),

Table 38. QUANTITY SOLD, SELLING VALUE, AND MARKETS FOR ALBERTA'S PAPER AND ALLIED PRODUCTS, 1972[1]

Markets	Pulp tonnes	%	Paper tonnes	%	Tall Oil tonnes	%	Insulation Board & Fiberboard Sheathing m^2, 1 mm basis	%	Asphalt Shingles[2]
Alberta	n.a.	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.
Rest of Western Canada[3]	n.a.	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.
Eastern Canada	n.a.	n.a.	-	-	-	-	-	-	n.a.
Total Canada	18 779	10.0	14 515[4]	100.0	-	-	100 289[4]	89.5	n.a.
United States	169 008	90.0	-	-	-	-	11 799	10.5	n.a.
Other Foreign	-	-	-	-	10 886	100.0	-	-	n.a.
Total Foreign	169 008	90.0	-	-	10 886	100.0	11 799	10.5	n.a.
TOTAL	187 787	100.0	14 515	100.0	10 886	100.0	112 088	100.0	n.a.

Total Value, all products, F.O.B. Mill: $39 849 089[5]

n.a. - not available

[1] See Table 38A for Canadian equivalents.

[2] Represents a major product; however, total production and marketing areas not available.

[3] Manitoba, Saskatchewan and British Columbia.

[4] Represents total volume marketed in Western Canada.

[5] Includes sale of products for which no information is available such as roof felts, rolled roofing, raw felts, asphalt coatings, etc.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 38A. QUANTITY SOLD, SELLING VALUE, AND MARKETS FOR ALBERTA'S PAPER AND ALLIED PRODUCTS, 1972

Market	Pulp tons	%	Paper tons	%	Tall Oil tons	%	Insulation Board & Fiberboard Sheathing M sq ft, ½" basis	%	Asphalt Shingles[1]
Alberta	n.a.	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.
Rest of Western Canada[2]	n.a.	n.a.	n.a.	n.a.	-	-	n.a.	n.a.	n.a.
Eastern Canada	n.a.	n.a.	-	-	-	-	-	-	n.a.
Total Canada	20 700	10	16 000[3]	100	-	-	85 000[3]	89.5	n.a.
United States	186 300	90	-	-	-	-	10 000	10.5	n.a.
Other Foreign	-	-	-	-	12 000	100	-	-	n.a.
Total Foreign	186 300	90	-	-	12 000	100	10 000	10.5	n.a.
TOTAL	207 000	100	16 000	100	12 000	100	95 000	100.0	n.a.

Total value, all products, F.O.B. Mill: $39 849 089[4]

n.a. - not available

[1] Represents a major product; however, total production and marketing areas not available.

[2] Manitoba, Saskatchewan and British Columbia.

[3] Represents total volume marketed in Western Canada.

[4] Includes sale of products for which no information is available such as roof felts, rolled roofing, raw felts, asphalt coatings, etc.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

this group produced and sold 172 000 m^2/1 mm basis (1169 million sq ft/ 1/16-in. basis) of plywood. Canadian markets absorbed all the production (Table 39). Most of the plywood produced was spruce, but small quantities of poplar were also manufactured. Sheet products ranged in thickness from 6.35 mm to 20.638 mm (1/4 in. to 13/16 in.). Quantities and percentage shares by product group are shown in Table 40. The 9.525 mm to 15.875 mm (3/8 in. to 5/8 in.) sizes were the most common, accounting for 75% of production. These products are used mainly for sheathing, underlay, and subflooring in residential and light industrial construction.

WOOD PRESERVATION INDUSTRY

Although this group of seven firms had only 7% of forest industry sales it produced a wide range of pressure-treated wood products, mainly for the Alberta market. This market consumed between 78 and 100% of each of the product groups (Table 41). Remaining western provinces took substantial quantities but eastern Canada purchased nothing. International sales were limited to the United States which took only 6% of the poles and piling.

Based on the number of pieces, fence posts were the most important commodity (Table 41). Agriculture in general and livestock raising in particular provided this major local demand. Provincial telephone and hydro utilities were the largest consumers of pressure-treated poles, cross arms, and related products.

Only firms that used a pressure-treating process were included in the study. The majority of pressure-treating done in Alberta in 1972 used

Table 39. QUANTITY SOLD, SELLING VALUE, AND MARKETS FOR ALBERTA'S PLYWOOD, 1972

Market	Plywood (000's m^2 1 mm basis)	Plywood (000's sq ft 1/16" basis)	%	Wood Chips tonnes	Wood Chips B.D.U.'s[1]	%	Lumber m^3	Lumber Mfbm	%
Alberta	36 417	246 925	21.1	4 572	4 200	100.0	7 919	3 356	100.0
Rest of Western Canada[2]	21 510	145 847	12.5	-	-	-	-	-	-
Ontario	54 437	369 106	31.6	-	-	-	-	-	-
Quebec	51 716	350 653	30.0	-	-	-	-	-	-
Maritimes	8 026	54 418	4.6	-	-	-	-	-	-
Territories	279	1 893	0.2	-	-	-	-	-	-
TOTAL	172 385	1 168 842	100.0	4 572	4 200	100.0	7 919	3 356	100.0

Total value, all products, F.O.B. Plant: $18 304 541

[1] 1 B.D.U. (bone dry unit) is equivalent to 2400 pounds oven dry.

[2] Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 40. PLYWOOD PRODUCTION BY SHEET THICKNESS, 1972

Thickness mm	Thickness inches	Quantity m^2 (1 mm basis)	Quantity Sq ft (1/16" basis)	% of Total
7.937 5	5/16	25 022 298	169 661 661	14.5
9.525	3/8	50 464 455	342 170 145	29.3
12.70	1/2	34 169 876	231 686 078	19.8
15.875	5/8	45 119 399	305 928 431	26.2
19.05	3/4	14 669 733	99 466 934	8.5
Other[1]	Other[2]	2 939 109	19 928 393	1.7
TOTAL		172 384 870	1 168 841 642	100.0

[1] Other includes 6.35 mm, 17.462 5 mm, 20.637 5 mm and rustic siding.

[2] Other includes 1/4", 11/16", 13/16" and rustic siding.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 41. QUANTITY SOLD, SELLING VALUE, AND MARKETS FOR ALBERTA'S PRESSURE-TREATED WOOD PRODUCTS, 1972

Market	Fence Posts pieces	%	Poles and Piling pieces	%	Barn Poles, Rails and Other pieces	%	Lumber m^3	Lumber Mfbm	%
Alberta	3 062 757	99.1	56 244	78.8	210 743	100.0	11 461	4 857	87.2
Rest of Western Canada[1]	26 600	0.9	10 905	15.3	-	-	1 685	714	12.8
Total Canada	3 089 357	100.0	67 149	94.1	210 743	100.0	13 146	5 571	100.0
United States	-	-	4 253	5.9	-	-	-	-	-
TOTAL	3 089 357	100.0	71 402	100.0	210 743	100.0	13 146	5 571	100.0

Total value, all products, F.O.B. Plant: $10 159 677

[1] Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

the oil-borne pentachlorophenol process, while creosote and oil mixtures accounted for the remainder. Wood preserved products have increased in popularity in recent years especially because of rising replacement costs due to higher wages and other expenses. These processes generally increase the useful lifetime of the product by three to four times at about double the untreated cost.

CHAPTER V

EMPLOYMENT IN THE ALBERTA FOREST INDUSTRY

In 1972 average employment (in terms of full employment equivalent) in Alberta's forest industry was estimated at 3445 persons in manufacturing and 1388 in logging (Table 42). The sawmill and planing mill industry employed 59% of the manufacturing and 66% of the logging labor force, making it the single most important industry in terms of employment.

Logging in Alberta is generally a seasonal activity. The majority of timber harvesting and hauling activities occur during the winter season, primarily between October and the end of March. As shown in Figure 4, employment in 1972 was strong during the winter season with 2300 persons working in December, but it fell sharply during spring breakup to 847 in April and continued to be seasonally low until October.

Compared with the logging industry employment in primary manufacturing was relatively stable despite the fact that monthly employment levels did fluctuate. Since total employment is aggregated,the larger primary wood-using industries which operated year-round tend to mask the seasonality which prevailed in many of the smaller operations. The size of the labor force and an industry's ability to support year-round employment varied from industry to industry and even within industries. To illustrate these differences Figure 4 has been disaggregated, and employment data for

Table 42. EMPLOYMENT IN THE ALBERTA FOREST INDUSTRY BY INDUSTRY GROUP, 1972

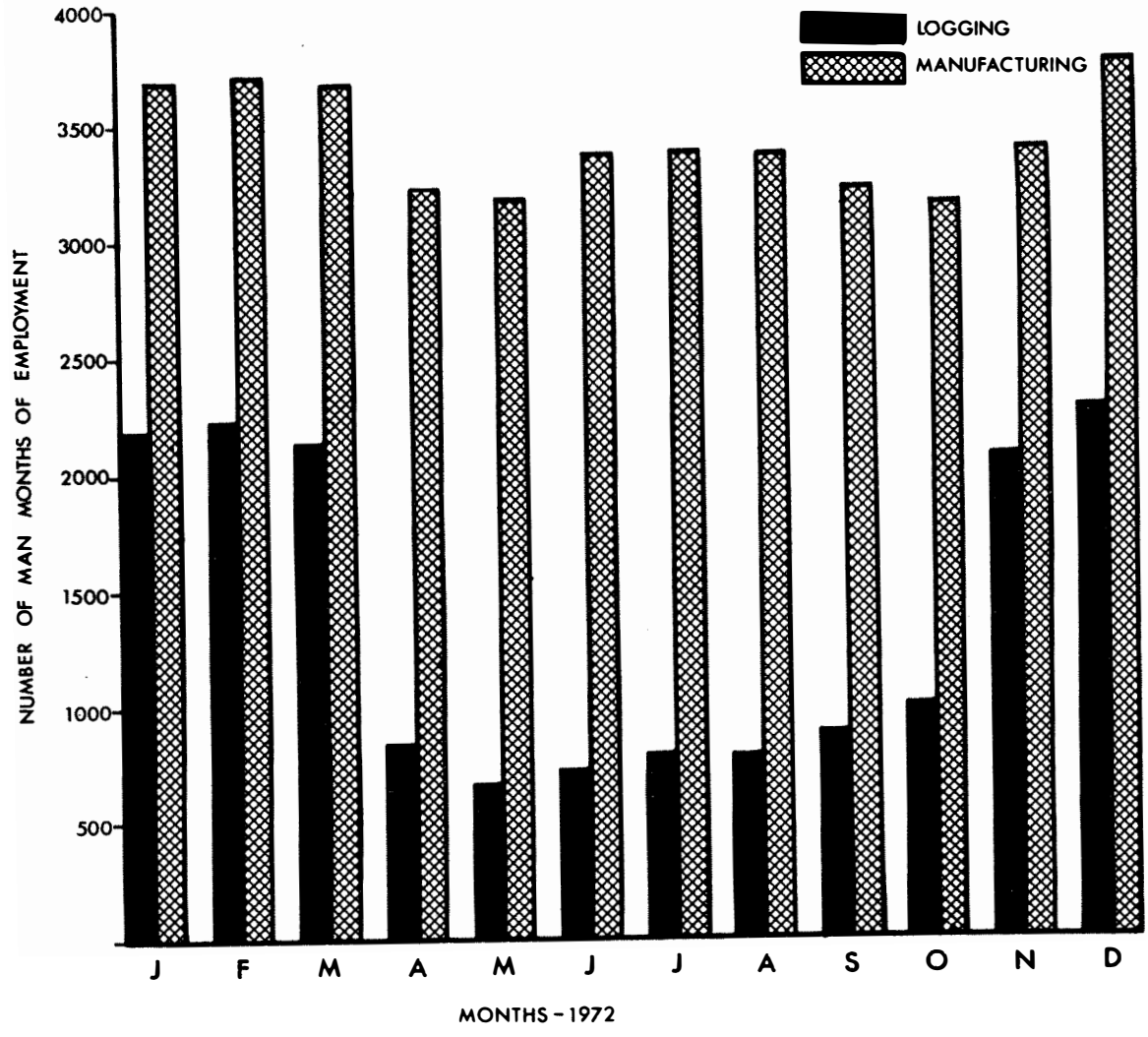
Industry Group		Total Employed[1] man-years		%	Employment Range[2] Low man-months	High man-months
Paper and Allied Industries	Logging	430	(1 265)	26	355	529
	Mill	835			822	848
Wood Preserving Industry	Logging	11	(174)	4	2	19
	Plant	163			117	186
Plywood Industry	Logging	31	(447)	9	10	59
	Mill	416			407	431
Sawmill Industry						
Class 1	Logging	28	(63)	1	8	80
	Mill	35			10	82
Class 2	Logging	182	(551)	12	72	360
	Mill	369			198	578
Class 3	Logging	107	(381)	8	24	234
	Mill	274			205	320
Class 4	Logging	130	(358)	7	33	238
	Mill	228			150	271
Class 5	Logging	110	(384)	8	39	202
	Mill	274			181	333
Class 6	Logging	359	(1 100)	23	37	754
	Mill	741			592	861
Independent Planing Mills	Mill	110	(110)	2	63	139
TOTAL	Logging	1 388	(4 833)	100		
	Mill/Plant	3 445				

[1] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2080 hours/year; 173.3 hours/month).

[2] Minimum and maximum number of people working on a man-month full employment equivalent basis.

SOURCE: Appendix E, Tables 1 to 10

FIG. 4 NUMBER OF PERSONS EMPLOYED IN LOGGING AND MANUFACTURING ACTIVITY IN THE ALBERTA FOREST INDUSTRY



SOURCE: Appendix E, Tables 1-10.

the pulp and paper, wood preserving, plywood, and sawmill industry have been reproduced in Figures 5 to 14.

EMPLOYMENT BY INDUSTRY GROUP

Paper and Allied Industries[1]

Employment in the four mills comprising this industry group was relatively stable throughout 1972. Average monthly employment during the year was 835 persons, with the work force at its minimum in December (822 persons) and its maximum in August (848 persons).

Of the five companies surveyed[2], only two conducted logging operations in 1972. The remaining firms purchased roundwood or wood fiber in some other form. Consequently, the data shown in Table 42 and illustrated in Figure 5 represent the number of jobs in logging operations supported by the two major pulp mills--North Western Pulp and Power Ltd. at Hinton and Procter and Gamble Cellulose Ltd. at Grande Prairie. The average number of jobs supported by the logging industry during the year was 430. The number of persons employed increased steadily from January to August, at which time employment jumped sharply from 410 to 502. This increase resulted from the start of logging operations on the Procter and Gamble Cellulose Ltd. lease area. The number of jobs increased during the year by almost 49% from 355 in January to 529 in December. Year-round employment was characteristic of the pulp mill logging industry.

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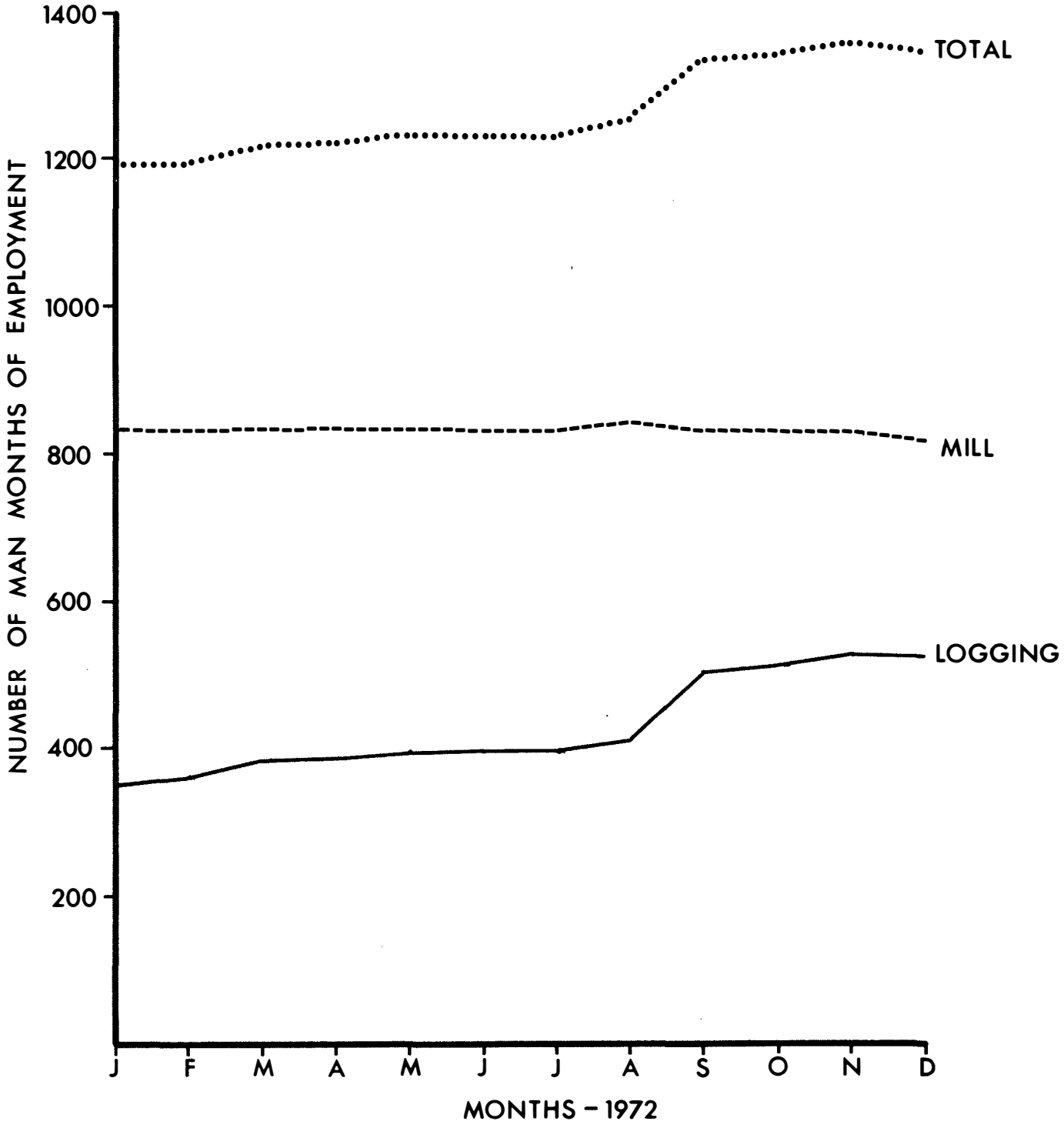
[1] To avoid disclosure of confidential data, companies classified as Pulp and Paper Mills (S.I.C. 271) and Asphalt Roofing Manufacturers (S.I.C. 272) have been grouped.

[2] During construction of the Procter and Gamble pulp mill at Grande Prairie, logging operations started on the company's lease area in August 1972. For purposes of determining total employment in the logging industry for 1972 employment by this company is included.

FIG. 5 SEASONALITY OF EMPLOYMENT IN ALBERTA'S PAPER AND ALLIED INDUSTRIES



SOURCE: Appendix E, Table 1.

Compared to the employment pattern for logging associated with other industry groups, harvesting operations remained relatively strong throughout the summer months.

Wood Preservation Industry

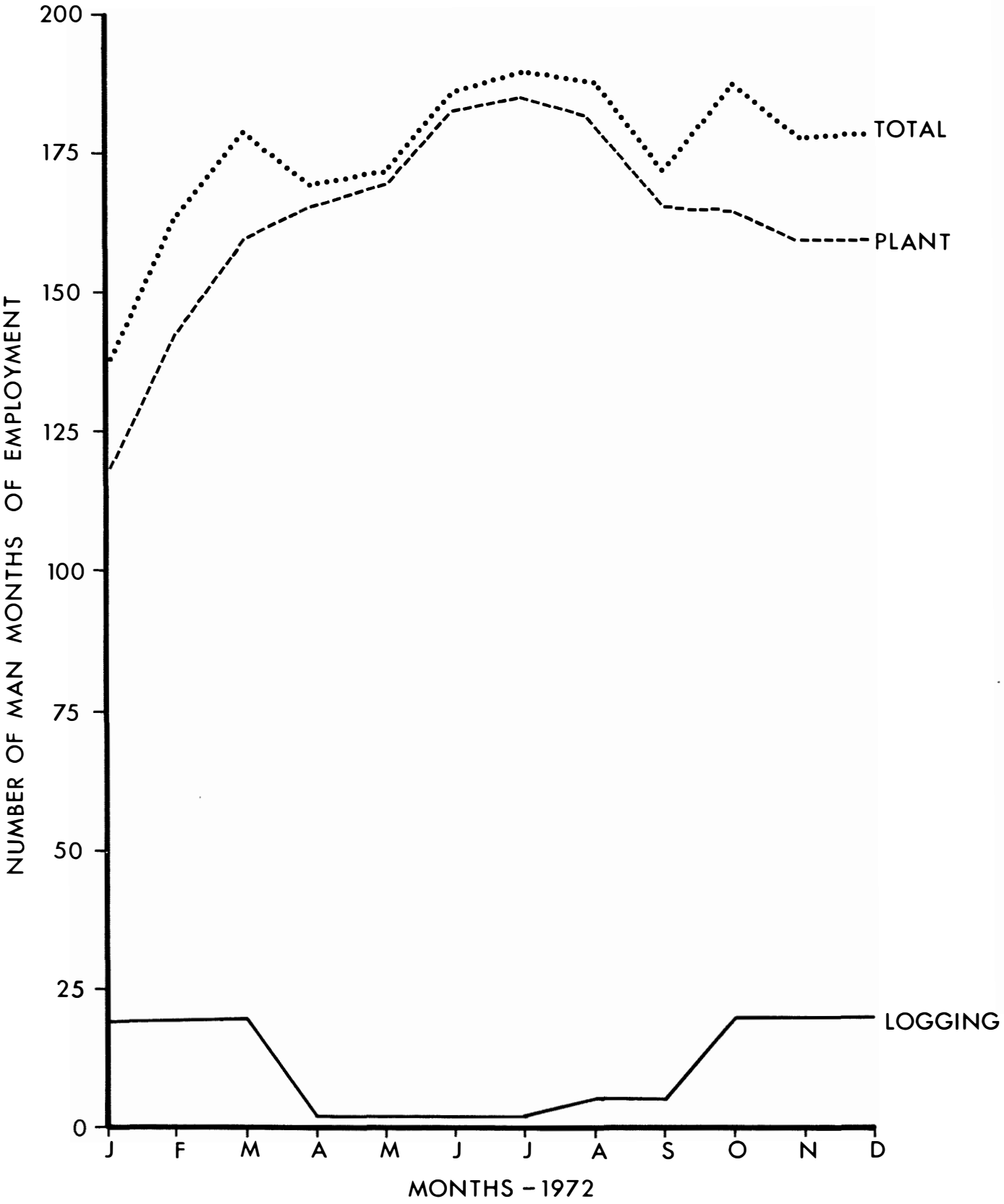
The employment pattern (Figure 6) shown for the industry includes firms whose main activity was pressure-treating wood products. Companies which treated roundwood or semi-processed products by dipping into open tanks, etc. are excluded.

Average employment in treating and related activites during 1972 was 163. The labor force was at its minimum of 117 in January and maximum of 186 in July. Difficulty in treating frozen wood, high costs incurred in heating oil, wood supply problems, and so forth precluded winter operations at most plants in Alberta.

The logging industry providing roundwood directly to the pressure-treating plants is not large when compared to the size of the preserving industry. The timber harvesting that is undertaken is carried out during the winter months. In 1972 average employment was 11, with the maximum (19) during the winter season and the minimum (2) during the period April through July. The logging industry was small because in 1972:

1. Four of the seven wood-preserving plants imported all or part of their wood requirements.
2. Two of the four plants which imported part of their wood requirements contracted the remainder to small, independent logging firms.
3. Of the three remaining plants one logged and contracted part

FIG.6 SEASONALITY OF EMPLOYMENT IN THE ALBERTA WOOD PRESERVING INDUSTRY



SOURCE: Appendix E, Table 2.

of its requirements, one purchased its supply from local farmers, and the last contracted its roundwood requirements to other primary producers, e.g., sawmills.

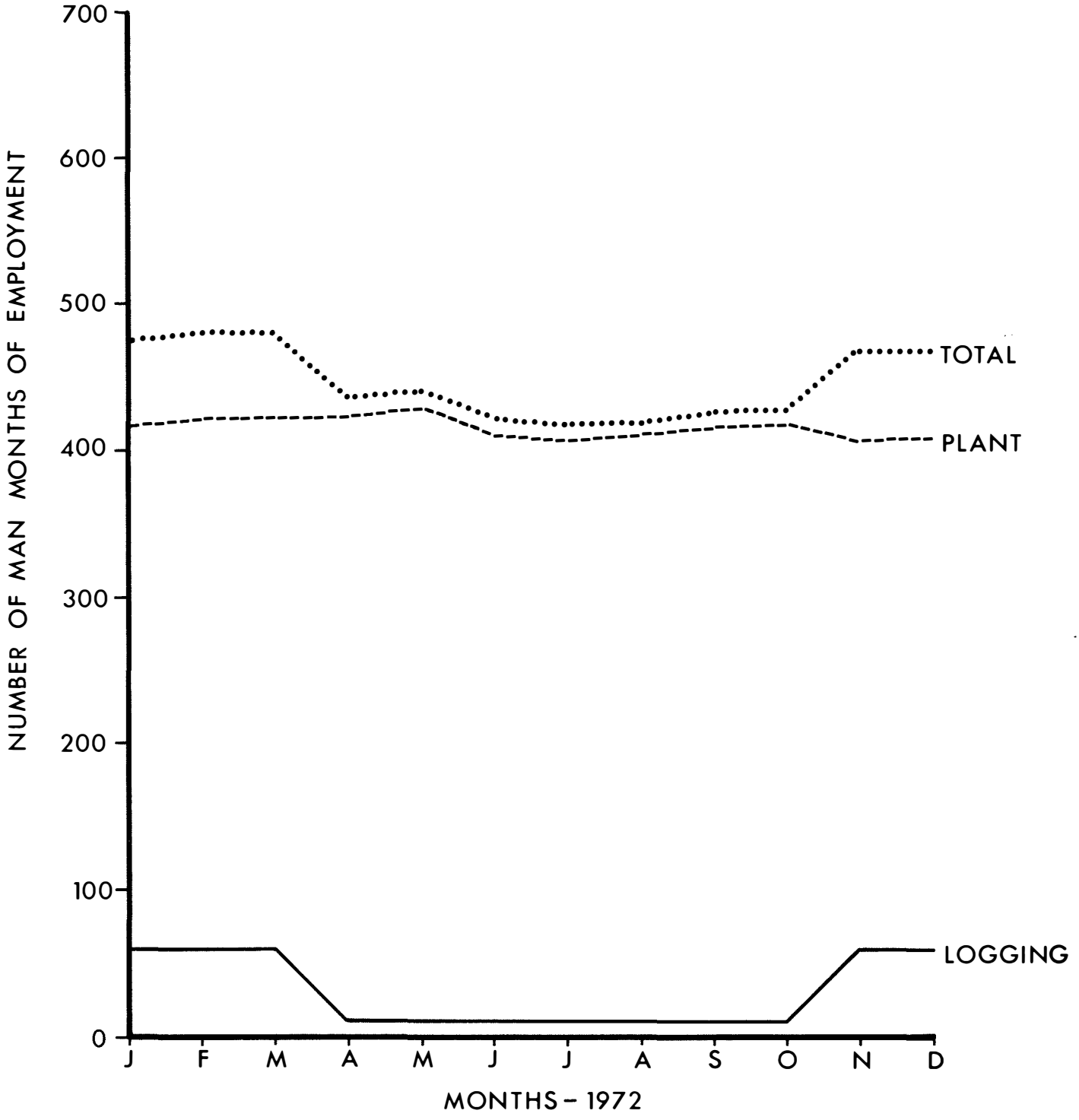
Thus the logging industry in 1972 functioned primarily to provide fiber to only two of the seven plants in the province.

Plywood Industry

Three firms, located in Edmonton, Grande Prairie, and Fort Macleod, comprise Alberta's plywood industry. Table 42 provides the total employment picture while Figure 7 illustrates the employment pattern for the industry during 1972. The average number of people employed in manufacturing during the year was 416. Employment was relatively stable throughout the year, fluctuating from the average by no more than 4%. It reached its peak in May (431) and its minimum in July (407).

Average monthly employment in logging was 31 persons, with peak employment (59 persons) during the winter season. Very little logging was carried out during spring breakup and the summer months. The labor force was small because the logging industry did not provide the total roundwood requirements of the three mills. In 1972 Crestbrook Forest Industries Ltd. at Fort Macleod imported all of its wood inputs from British Columbia in the form of veneer; North Canadian Forest Industries, Plywood Division, purchased its entire peeler log supply from company-owned sawmills at Grande Prairie and Hines Creek; and Zeidler Plywood Corporation in Edmonton contracted part of its wood requirements to a number of small independent logging firms while importing the remainder in the form of veneer from British Columbia. The logging industry, therefore,

FIG.7 SEASONALITY OF EMPLOYMENT IN THE ALBERTA PLYWOOD INDUSTRY



SOURCE: Appendix E, Table 3.

functioned primarily for the Edmonton-based operation and not for the industry as a whole.

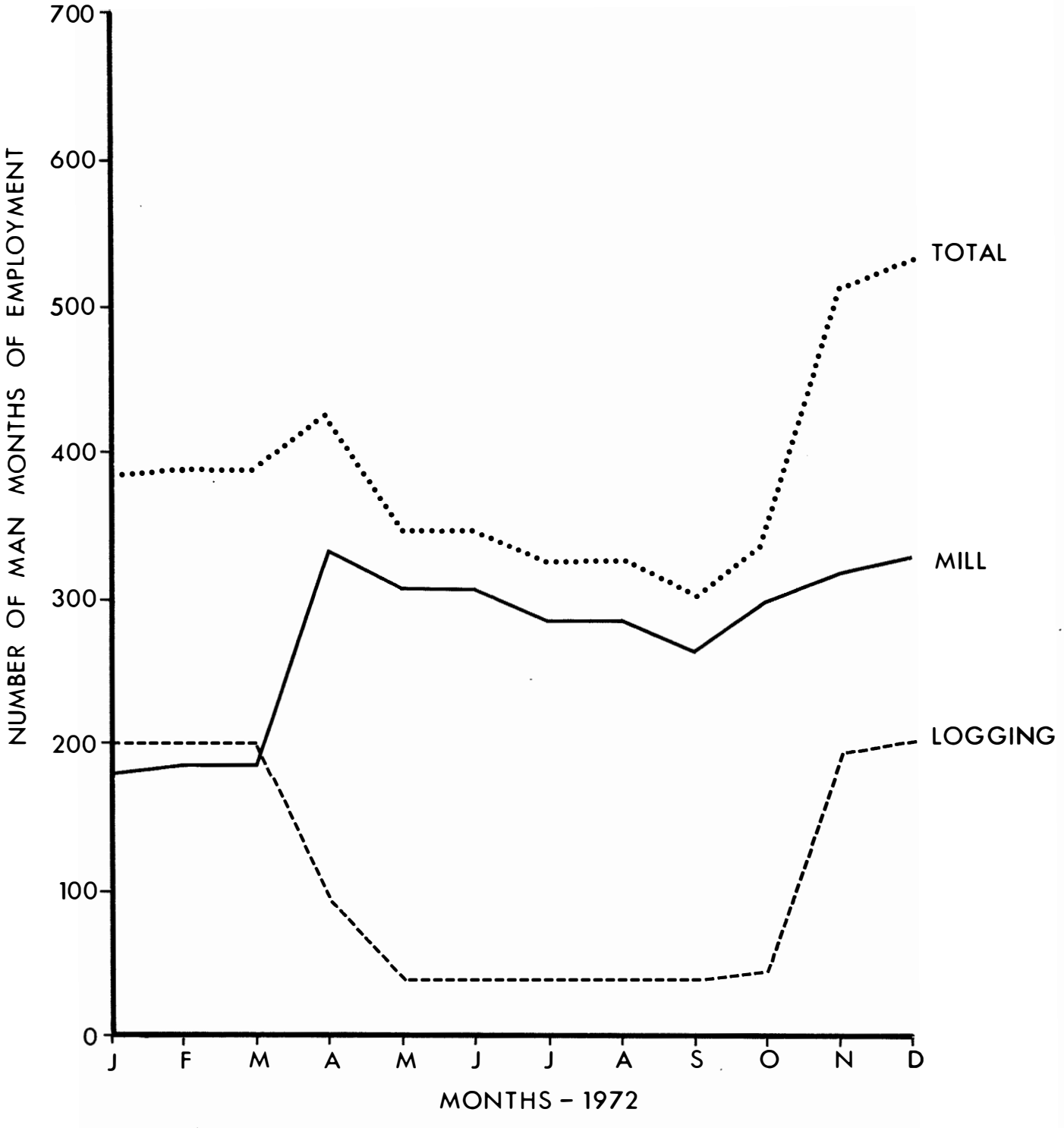
Sawmill Industry

There were approximately 213 commercially operated sawmills in Alberta in 1972. An average of 1921 jobs was provided by the industry, while logging provided an additional 916 jobs. Job opportunities in production and related work (manufacturing) varied from part-time seasonal to full-time year-round employment. Almost all logging operations were seasonal, affording employment only during the winter months. Table 42 shows the total number of jobs provided by the sawmill industry by six production classes, while Figures 8 to 13 illustrate monthly employment in logging and manufacturing for the year.

Production Classes 5 and 6: Fourteen establishments comprised these two classes and, in 1972, all but three operated year-round. They provided an average of 1015 jobs, which represented about 53% of the sawmill labor force. Logging operations associated directly with these mills provided an additional 469 jobs, or about half those found in the industry. Monthly employment in logging and manufacturing for the two classes is illustrated in Figures 8 and 9. Six mills comprised the smaller and eight mills the larger size class.

Class 5 sawmills employed an average of 274 people during the year. Of the six mills in this group only three produced lumber on a full-time basis, partially accounting for the fluctuating employment

FIG. 8 SEASONALITY OF EMPLOYMENT IN ALBERTA'S CLASS 5 SAWMILLS, 1972.



SOURCE: Appendix E, Table 5.

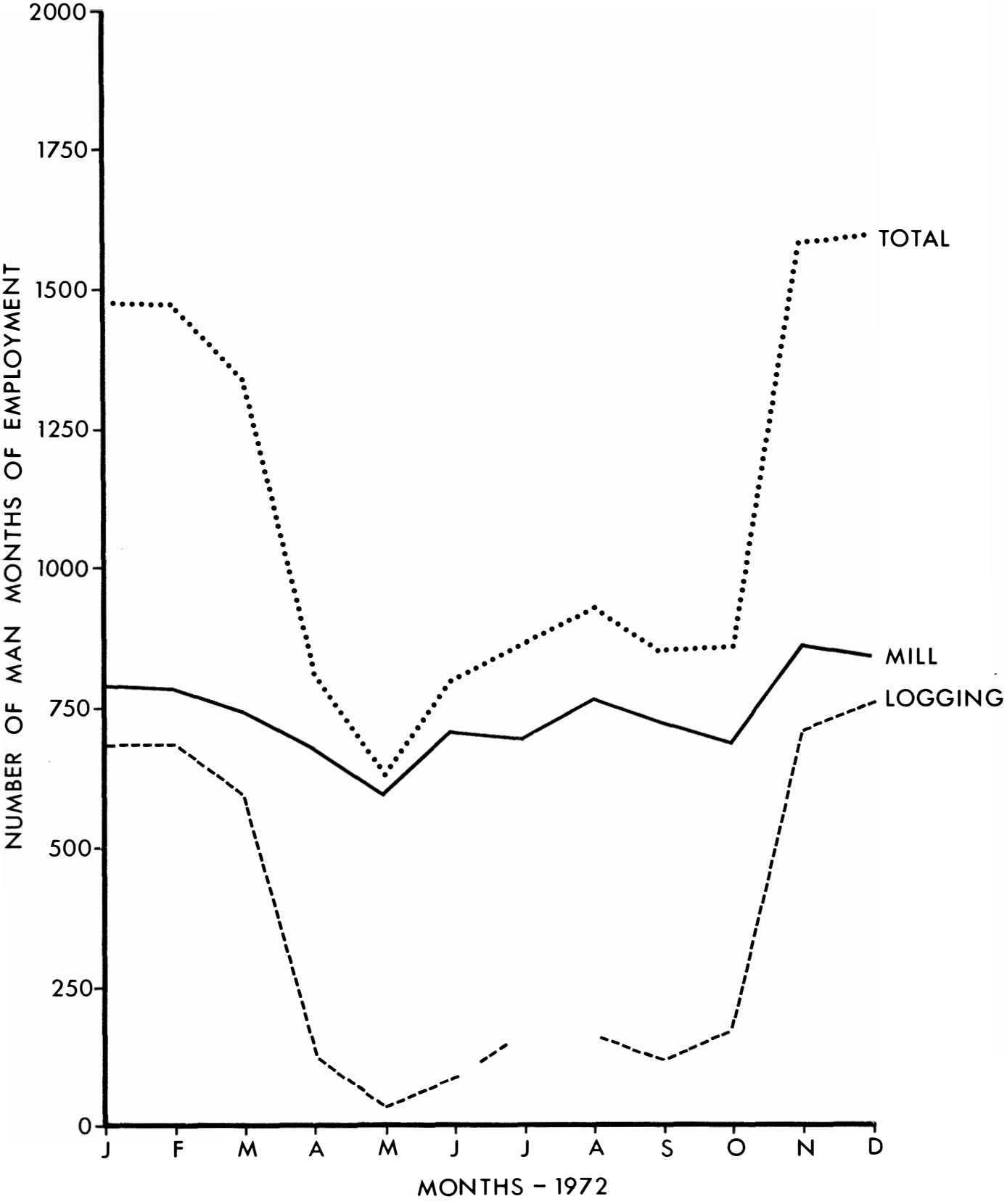
pattern illustrated in Figure 8. Employment in these mills during the period January to March held steady at about 184 people until April when there was a sharp increase of 81% to 333, which resulted from the start-up of the new poplar stud mill at Slave Lake. However, employment declined steadily to 264 in September as a result of seasonal layoffs by several mills and destruction of one mill by fire. As in previous years employment picked up during the fall and winter and climbed to 329 in December.

In Class 6 mills the average number of people employed during the year was 741. The labor force was at its minimum in May (592 persons) and its maximum in November (861 persons). The steady decline in employment from 793 persons in January to 592 in May resulted from seasonal layoffs by the mills, particularly in the period January through April, and a fire which completely destroyed the Swanson Lumber Co. Ltd. sawmill at High Level in May.

May's depressed employment picture was somewhat brightened when North Western Pulp and Power's new stud mill came on stream in June. There was some fluctuation in the total number of people employed between June and October; however, November saw an upswing in employment of about 25% which brought the number of jobs to 861 from the October level of 688. This increase was primarily due to Swanson Lumber Co. Ltd. beginning winter planing operations at High Level.

Generally, logging in Alberta is a seasonal activity with most harvesting occurring during the winter months between October and March. In 1972 the logging industry supplying roundwood to Class 5 and 6 mills

FIG. 9. SEASONALITY OF EMPLOYMENT IN ALBERTA'S CLASS 6 SAWMILLS, 1972.



SOURCE: Appendix E, Table 4.

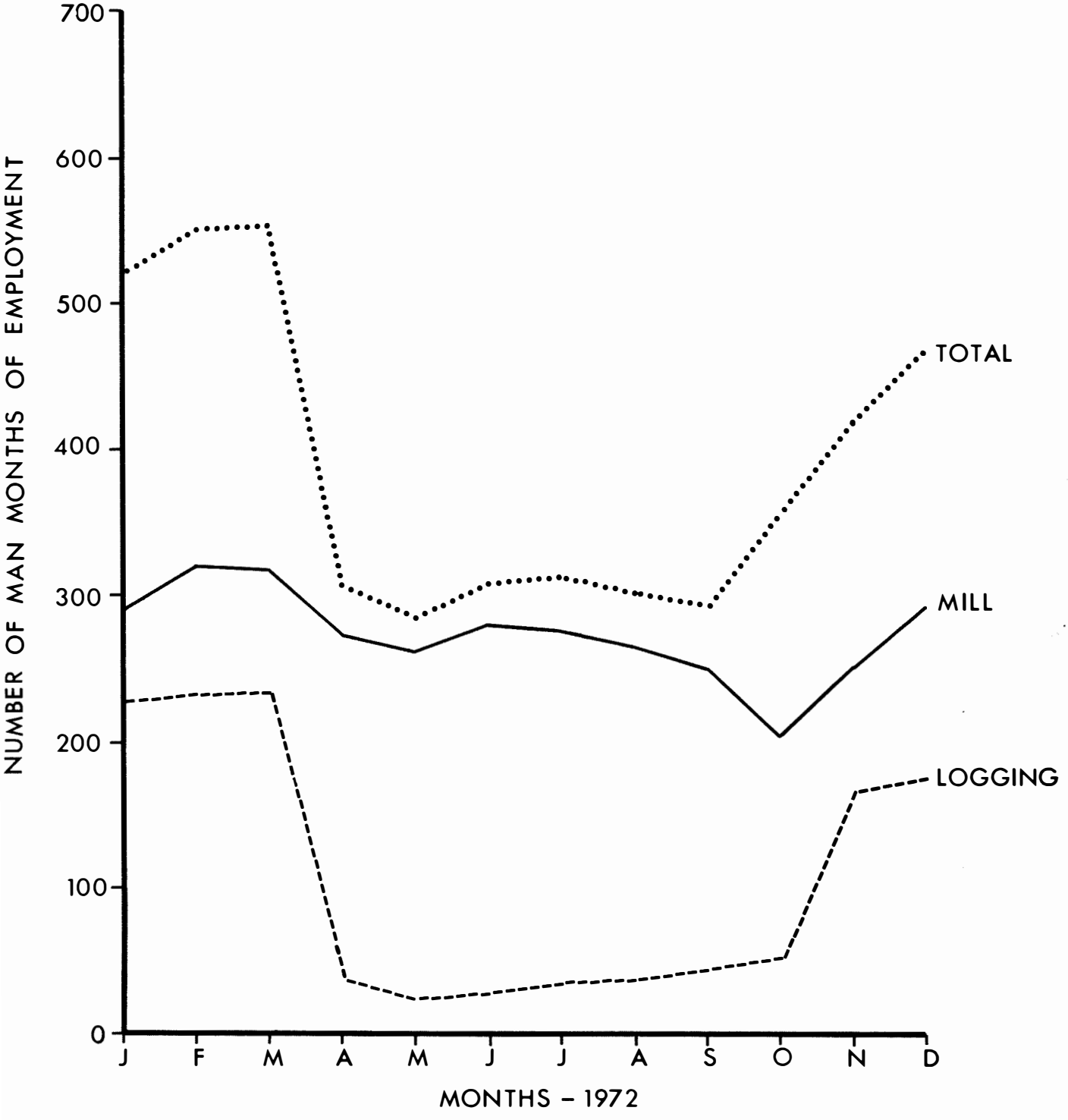
employed an average of 469 persons. Peak employment reached 956 in December.

Production Classes 3 and 4: Figures 10 and 11 provide 1972 monthly employment levels for logging and manufacturing for Classes 3 and 4, respectively. The two classes combined contained 14 sawmills which produced in excess of 291 000 m^3 (123 MMfbm) of lumber and provided an average of 502 jobs (26% of the sawmill industry labor force). In turn these mills provided 237 people with jobs in logging.

The majority of the mills in Class 3 operated year-round in 1972. In some cases planer mill operations represented the major activity during the late spring and summer months. Average employment for the year was 274 persons, and peak employment during February and March was 320. The decline in the number of people employed during April and May resulted from seasonal layoffs due to a reduction in the number of shifts per week, cutbacks in daily production, or temporary shutdowns for maintenance. Although there was a slight increase in May, employment continued to decline throughout the summer and fall until October, when it increased sharply as the mills began winter sawing operations.

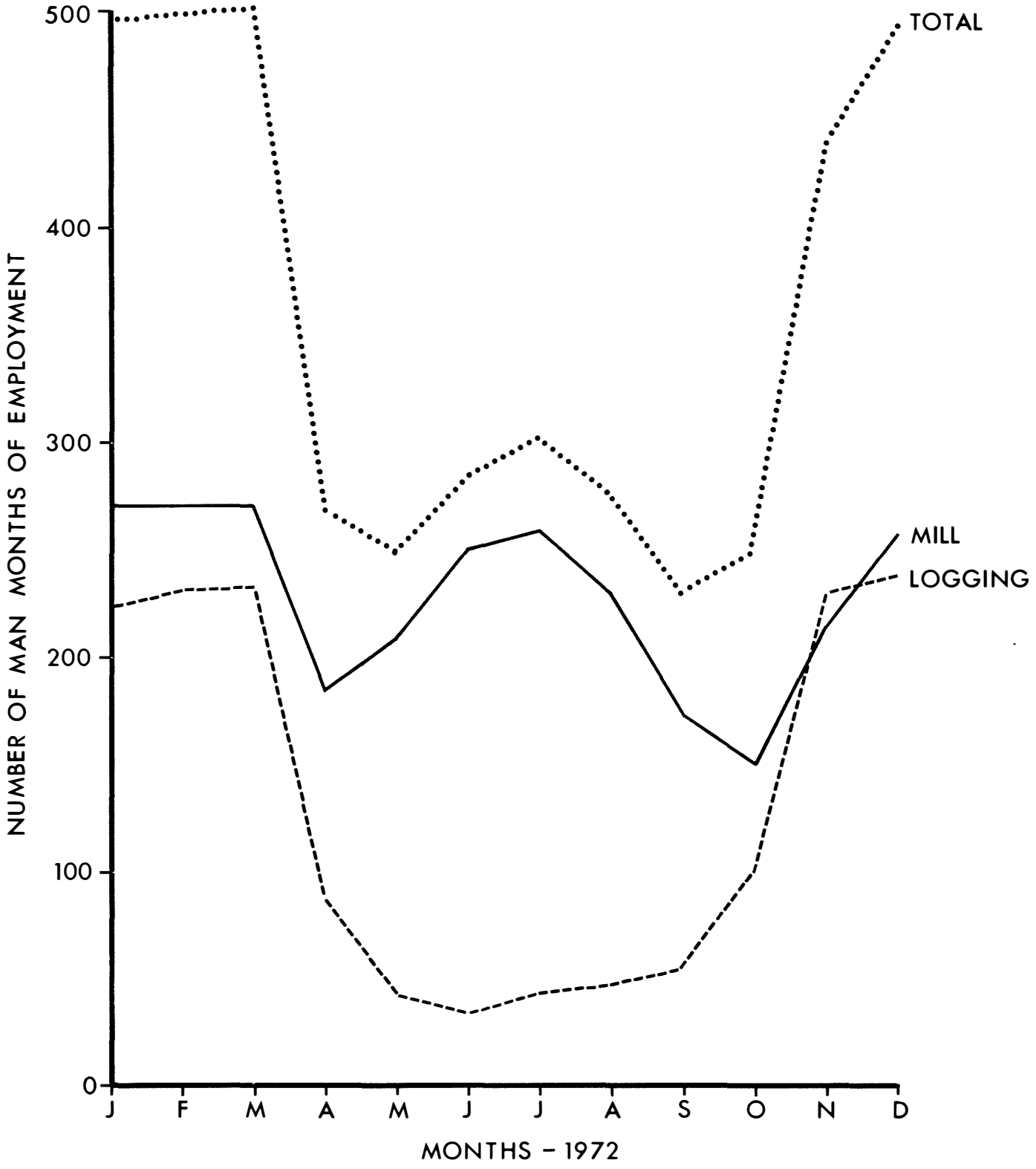
In 1972 employment in Class 4 mills remained stable at about 270 from January through March, when seasonal layoffs dropped the number of people working to 184. Between April and July the level of employment increased due to one firm preferring summer over winter sawing operations. Layoffs from this operation in September combined with those of other

FIG.10 SEASONALITY OF EMPLOYMENT IN THE ALBERTA CLASS 3 SAWMILLS, 1972.



SOURCE: Appendix E, Table 7.

FIG.11 SEASONALITY OF EMPLOYMENT IN ALBERTA'S CLASS 4 SAWMILLS, 1972.



SOURCE: Appendix E, Table 6.

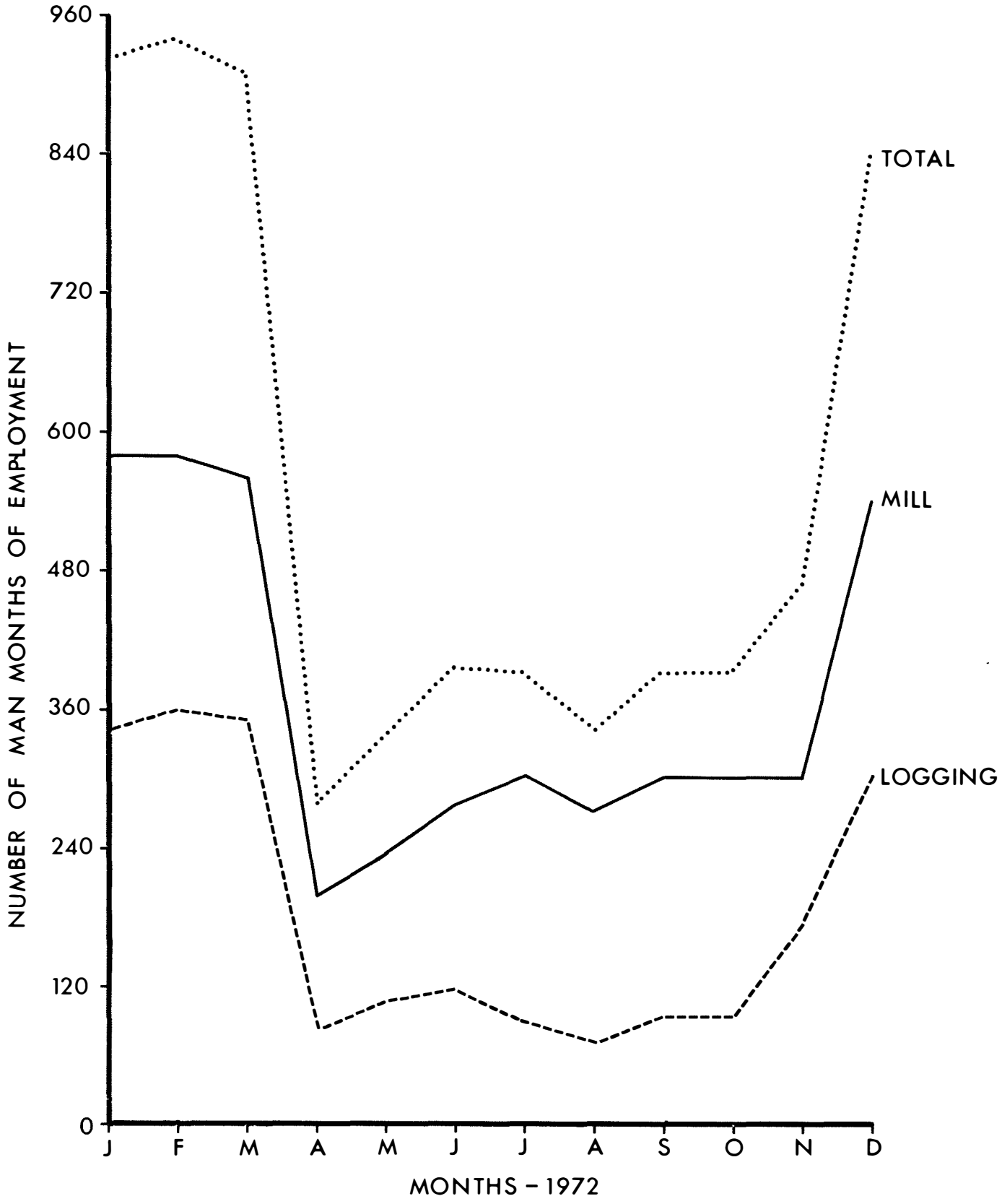
mills during late summer and early fall dropped employment to 150 in October, its lowest for the year. When winter operations got underway in November, employment climbed rapidly to about 260 in December.

Production Class 2: Fifty-five firms comprised Class 2 mills which, in 1972, produced approximately 146 000 m^3 (62 MMfbm), or about 10% of Alberta's total lumber production. Although many of the mills operated year-round, they were for the most part winter operations. During the summer most mills reduced daily output or curtailed sawing. In many instances planing was the sole activity.

An average of 369 persons was employed on a full-time basis in manufacturing and an average of 182 in logging (Table 42). Figure 12 illustrates the serious effect that seasonal operations have on employment once production levels are reduced or brought to a complete halt. In this case employment dropped 65% from 559 in March to 198 in April. It was not until late November that employment in the mills showed signs of returning to the previous winter levels.

Although some logging occurred during the summer, it still remained a winter operation closely tied to sawmill operations. Peak employment was in February when 360 people were working full-time during the month. Minimum employment occurred in August when 72 people were occupied with cutting, hauling, or some other closely allied activity.

FIG.12 SEASONALITY OF EMPLOYMENT IN ALBERTA'S CLASS 2 SAWMILLS, 1972.



SOURCE: Appendix E, Table 8.

Production Class 1: This group of mills, 130 in all, produced about 19 000 m^3 (8 MMfbm) of lumber during the year. In most cases, the majority of the mills were owned and operated by individuals in which sawmilling was secondary to the entrepreneur's basic occupation. Most were operated for the sole purpose of the owner using the product himself or selling it in local markets. Almost 80% of the lumber produced was used or sold rough.

Although much of the lumber produced was sawn during the winter, summer operations did occur, usually to fill some immediate need of the owner. In most instances the owner harvested his own sawtimber. An average of 35 people was employed by the mills in 1972 (Table 42), with peak employment during January and February (Figure 13).

Independent Planing Mill Industry: Planing mill operations process rough timbers and lumber to more accurate dimensions, improve the surface characteristics, or impart a desired shape prior to marketing. In 1972 nine mills[3] processed in excess of 158 000 m^3 (67 MMfbm). Two mills accounted for 84% of this production. Several mills operated year-round.

Due to the conditions under which some of these mills operate, employment tends to be somewhat erratic throughout the year. In 1972 an average of 110 people was employed during the year with maximum (139 persons) and minimum (63 persons) employment during the months of May and November, respectively (Figure 14).

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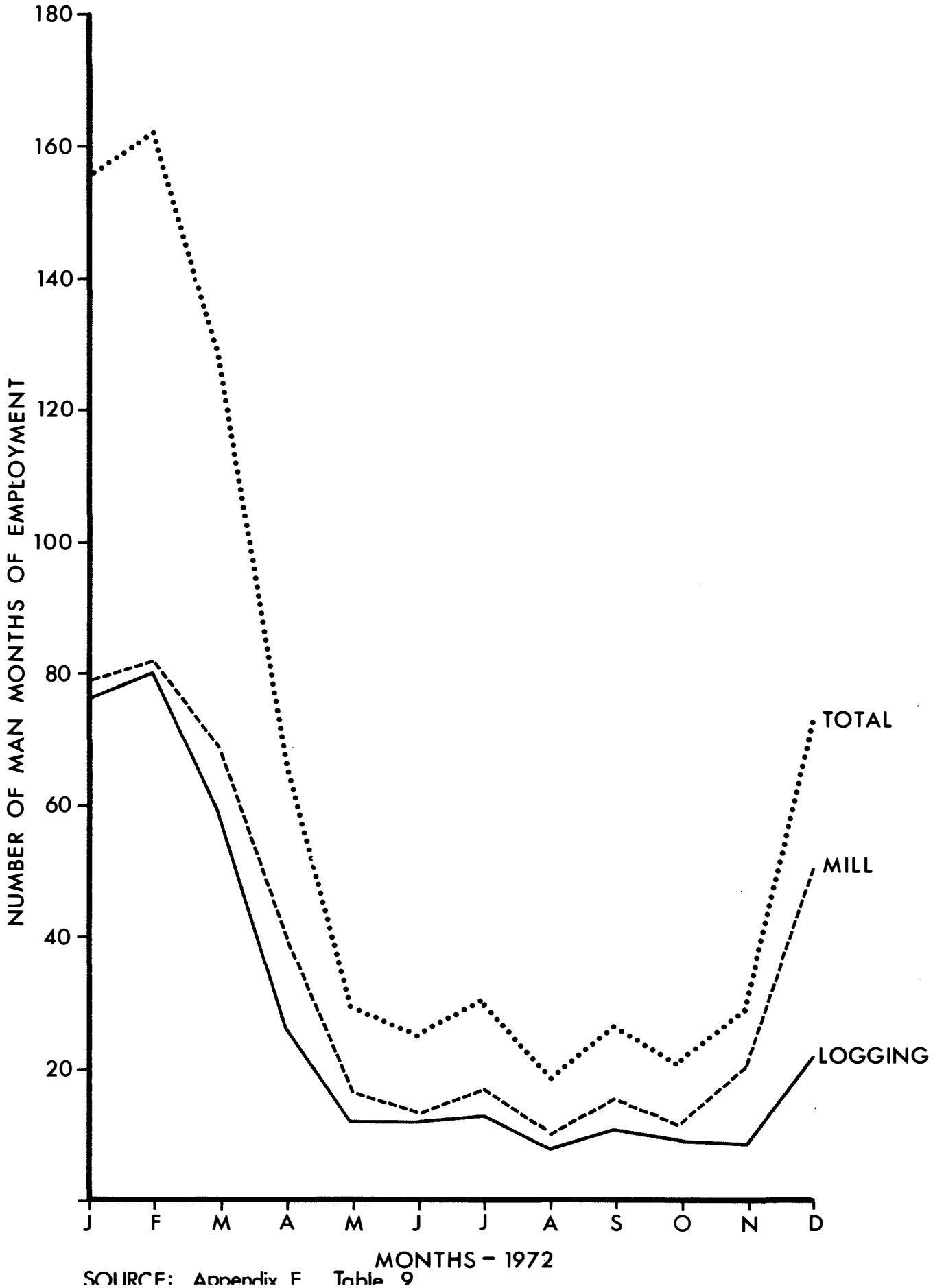
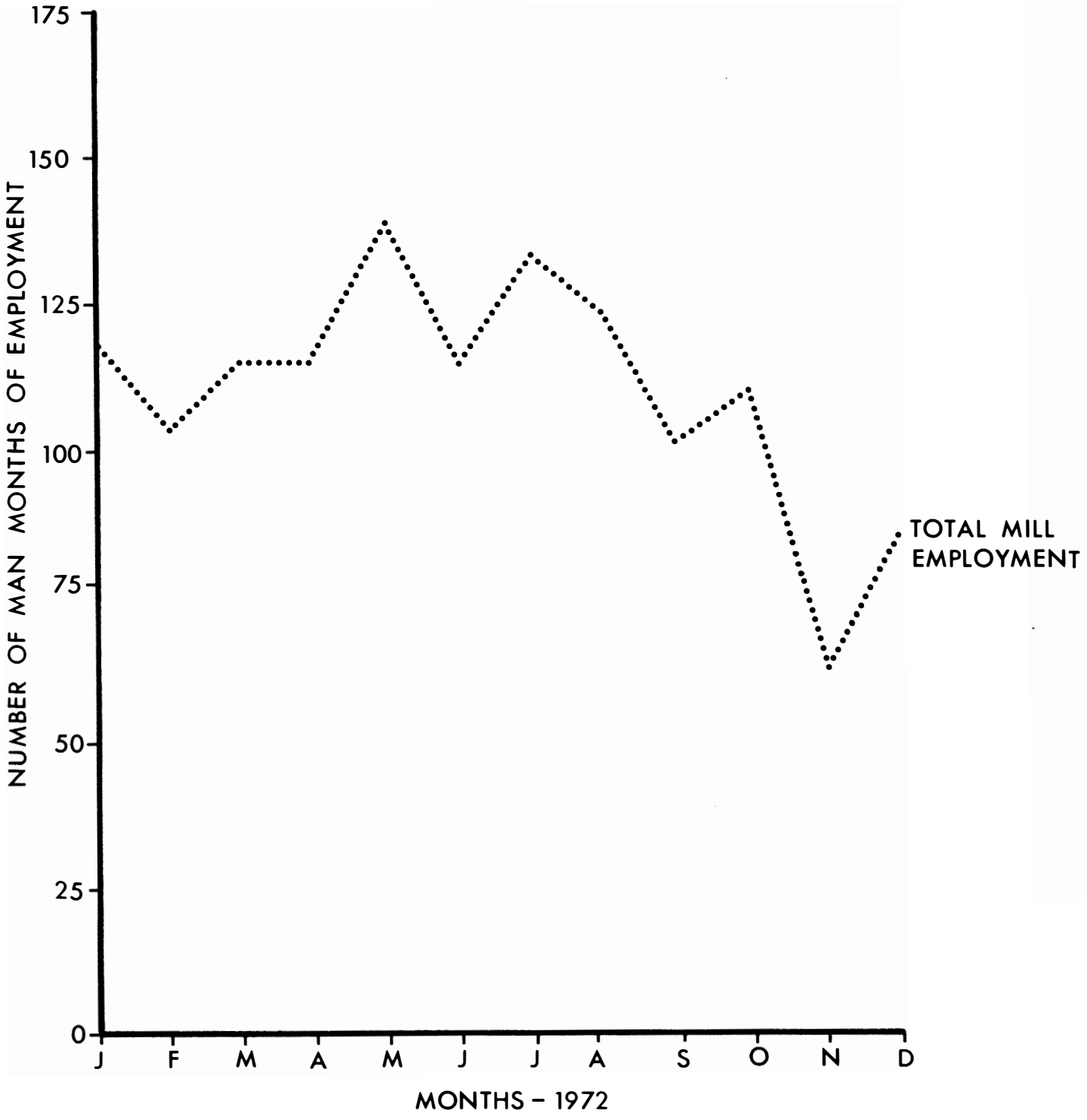
[3] In 1972 the industry consisted of six stationary and three mobile operations.

FIG.13 SEASONALITY OF EMPLOYMENT IN ALBERTA'S CLASS 1 SAWMILLS, 1972.



SOURCE: Appendix E, Table 9

FIG.14 SEASONALITY OF EMPLOYMENT IN ALBERTA'S INDEPENDENT PLANING MILLS, 1972



SOURCE: Appendix E, Table 10.

NATIVE EMPLOYMENT

The forest industry of Alberta provides some opportunities for employment of native people. Employment is usually found where little in the way of experience or skill is required and the job, in many cases, is seasonal. In 1972, 631 jobs, or 13% of the total forest industry labor force (logging and manufacturing), were filled by Indian and Métis people (Table 43). The sawmill and planing mill industry supported the majority of the native work force, 88% of the total. Of the 563 natives employed by the industry 88% worked in the mills and the remainder in timber harvesting operations. The paper and allied and the wood preserving industries employed a relatively insignificant number of native workers. In plywood manufacturing 11% of the 416 jobs in the mills were filled by natives.

ORGANIZED LABOR IN ALBERTA'S FOREST INDUSTRY

Table 44 provides a breakdown of the Alberta forest industry (manufacturing only) and shows the number of production and related workers having membership in a labor union in 1972. Eight unions and two associations represented 1830 workers, or 63% of the manufacturing labor force. Two industries, the paper and allied industry and the plywood industry, were completely organized with 4 unions and one association representing the 978 workers. In the sawmill and planing mill industry 42% of the workers were organized, almost all of them employed by companies comprising Class 5 and 6 mills. Eighty-one percent of the total number employed by these mills were affiliated with one or another of the four organizations listed.

Table 43. NATIVE EMPLOYMENT IN THE ALBERTA FOREST INDUSTRY, 1972

Industry Group		Total Employment	Native Employment[1]	% Native Employment of Industry Total
Paper and Allied Industries	Logging	430	14	3
	Mill	835	9	1
Wood Preserving Industry	Logging	11	1	9
	Plant	163	0	0
Plywood Industry	Logging	31	0	0
	Mill	416	44	11
Sawmill Industry				
Class 1	Logging	28	4	14
	Mill	35	9	26
Class 2	Logging	182	24	13
	Mill	369	105	28
Class 3	Logging	107	25	23
	Mill	274	83	30
Class 4	Logging	130	9	7
	Mill	228	30	13
Class 5	Logging	110	0	0
	Mill	274	137	50
Class 6	Logging	359	6	2
	Mill	741	127	17
Independent Planing Mills	Mill	105	4	4
TOTAL		4 828	631	13

[1] Defined as the Indian and Métis people of Alberta.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 44. ORGANIZED LABOR IN ALBERTA'S FOREST INDUSTRY[1], 1972

Industry Group	Total Number Production and Related Workers	Union Membership	Union or Association
Paper and Allied Industries	620	620	1) International Brotherhood of Pulp, Sulphite & Paper Mill Workers AFL-CIO/CLC 2) International Woodworkers of America 3) International Chemical Workers Union 4) Oil, Chemical and Atomic Workers International Union
Wood Preserving Industry	137	103	1) Creosote and Miscellaneous Employees Union 2) Bell Pole Employee's Association
Plywood Industry	358	358	1) International Woodworkers of America 2) Association of Employees of N.C.F.I.
Sawmill Industry			
Classes 5 & 6	916	745	1) Smith Woodworkers Union 2) Association of Employees of N.C.F.I. 3) United Paper Workers International 4) International Woodworkers of America
Classes 3 & 4	423	0	----------
Class 2	327	4	1) United Mine Workers
Class 1	20	0	----------
Independent Planing Mills	95	0	----------
TOTAL	2 896	1 830	

[1] Manufacturing only.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

FOREST INDUSTRY EMPLOYMENT MULTIPLIERS

Studies have shown that each primary or basic job generally supports an additional non-basic (indirect) job in the same community. This expansion principle is called the employment multiplier. A recent report (Reed, F.L.C. and Associates Ltd., 1973) describing the British Columbia forest industry defined basic activities as those which produce goods and services for markets outside the local community, such as a pulp and paper mill producing for export markets. Non-basic activities are those which produce goods and services for the local market. There was no attempt during this study to gather data to determine employment multipliers for the Alberta forest industry. However, employment multipliers calculated for the basic activity in several other forest-based communities in Canada, including estimated provincial multipliers, were available (Table 45), and were used to estimate industry multipliers for Alberta. These multipliers allow an analysis of the impact of, for example, a changed level of employment in the forest industry on the total employment in an area.

Employment multipliers for each industry group in Alberta were estimated from those presented in Table 46. A number of criteria such as structure and size of industry, extent of transportation services required, relative size of the service sector, source of major non-wood materials and supplies, income expenditure pattern of industry employees, and so forth were weighed subjectively in determining the appropriate multiplier. This subjective approach was a relatively expedient but unsophisticated method, and the multipliers should be viewed as reasonable

Table 45. FOREST INDUSTRY EMPLOYMENT MULTIPLIERS

Province	Location	Estimated Multiplier	Basic Activity
Ontario[1]	Dryden	2.01	pulp mill
	Hearst/Kapuskasing	2.13	pulp mill/sawmilling
		2.73*	
British Columbia[2]	Prince George	2.43	pulp and paper
	Okanagan Region	2.49	mixed forest industry
		2.80*	
Nova Scotia[3]		3.20*	sawmill industry
		1.40*	misc. wood products
		3.50*	pulp & paper industry

* Provincial Multipliers

SOURCE: [1] Hedlin, Menzies and Associates, Ltd. 1969. The Ontario Forest Industry. Its Direct and Indirect Contribution to the Economy. Ont. Dep. Lands For.

[2] Reed, F.L.C. and Associates. 1973. The British Columbia Forest Industry. Its Direct and Indirect Impact on the Economy. B.C. Dep. Lands, For. Water Resour.

[3] Runyon, K.L. et al. 1972. Analysis of the Economic Impact of Sawmills and Pulp and Paper Mills in Nova Scotia. Environ. Can., For. Serv., Maritimes For. Res. Cent. Inf. Rep. M-X-33.

approximations only. Multipliers estimated for the Alberta forest industry are given in Table 46.

Table 46. DIRECT AND INDIRECT EMPLOYMENT SUPPORTED BY THE ALBERTA FOREST INDUSTRY

Industry Group	Direct Forest Industry Employment	Industry Multiplier	Indirect Employment	Total Employment
Paper and Allied Industries	1 265	2.00	1 265	2 530
Wood Preserving	174	1.95	165	339
Plywood Industry	447	2.00	447	894
Sawmill and Planing Mill Industry	2 947	2.10	3 242	6 189
TOTAL	4 833		5 119	9 952

Estimated Provincial Forest Industry Multiplier 2.06

Indirect employment supported by the forest industry in 1972 was 5119 jobs. Sixty-three percent of these jobs resulted from the operation of the sawmill and planing mill industry. Total employment, direct and indirect, was 9952 jobs. The provincial forest industry multiplier estimated on the basis of the data in Table 46 was 2.06. By definition this means each job in the Alberta forest industry was related with 1.06 jobs elsewhere, or each new job created at the primary level created 1.06 jobs elsewhere in the province.

LABOR PROBLEMS

The forest industry was not without its labor problems in 1972. There was a serious shortage of skilled workers such as mechanics, heavy

equipment operators, sawyers, electricians, fallers, etc., and in some parts of the province the problem was compounded by the fact that local labor pools on which companies usually relied for additional manpower had almost disappeared because there were better-paying jobs elsewhere. To maintain production levels mechanized logging quickly became a familiar scene in Alberta's logging operations. In the sawmilling industry labor turnover was high, working conditions difficult and at times dangerous, and wages relatively low--often at the provincial minimum wage level.

CHAPTER VI

PRODUCTION COSTS AND VALUE ADDED BY THE ALBERTA FOREST INDUSTRY

This chapter describes production costs incurred and value added of output of Alberta's forest industry for 1972. Production costs identified were wood inputs, salaries and wages, fuel and electricity, materials and supplies, and miscellaneous items which included company-paid benefits, property taxes, insurances, leasing and rentals, and other expenses (Appendix F, Table 1).

PRODUCTION COSTS AND INDUSTRY SALES

In 1972 the forest industry shipped products valued at the mill gate at $149 508 million. Major expenditures incurred in the production of these goods included $60.7 million for wood fiber, $28.4 million for salaries and wages, and $12.8 million for materials and supplies (Table 47). The combined costs of wood fiber and payroll accounted for almost 60% of the industry's net sales.

Lumber products manufactured by the sawmill and planing mill industry[1] were valued at $81.2 million, or 54% of all sales reported by the primary wood-using industries. The largest single expenditure incurred was for sawtimber at $37.8 million. Salaries and wages totalled $16.1 million, and together with wood costs accounted for 66% of net sales. Materials and supplies used in manufacturing were $4.4 million, or 5.4% of net sales.

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[1] Includes independent planing mills. See Appendix F, Table 1. A breakdown of production costs for each of the six size classes comprising the sawmill industry is found in Appendix F, Table 2.

Table 47. DISTRIBUTION OF MAJOR PRODUCTION COSTS IN THE ALBERTA FOREST INDUSTRY[1], 1972

	Wood Inputs	Salaries & Wages	Fuel & Electricity	Materials & Supplies	Miscellaneous[2]	Residual[3]	Net Sales
	thousands of dollars						
Wood Industries							
Sawmills & Planing Mills[4]	37 833	16 130	1 867	4 387	4 399	16 578	81 194
Veneer & Plywood Mills	9 453	3 379	297	1 654	1 561	1 961	18 305
Wood Preservation Industry	4 119	1 198	151	1 112	706	2 874	10 160
TOTAL	51 405	20 707	2 315	7 153	6 666	21 413	109 659
% of Net Sales	46.9	18.9	2.1	6.5	6.1	19.5	100.0
Paper and Allied Industries[5]							
Pulp and Paper Mills) Asphalt Roofing Mfrs.)	9 328	7 719	1 769	5 660	2 756	12 617	39 849
% of Net Sales	23.4	19.4	4.4	14.2	6.9	31.7	100.0
TOTAL	60 733	28 426	4 084	12 813	9 422	34 030	149 508

[1] Does not include logging industry.

[2] Includes company-paid employee benefits, property taxes, insurances, leasing and rentals, and other expenses.

[3] Includes profit, depreciation and other unallocated expenses incurred.

[4] Includes independent planing mills.

[5] Companies classified under Paper and Allied Industries were grouped to avoid disclosure of confidential data.

SOURCE: Appendix F, Table 1

Sales by the paper and allied industries were second largest at $39.8 million. The most costly item was wood fiber at $9.3 million. Salaries and wages were $7.7 million, followed by materials and supplies at $5.7 million. The three items combined totalled $22.7 million, or 57% of industry sales. It is interesting to note that the paper and allied industries had the highest materials and supplies cost per dollar of sales (Table 48).

Net sales for the veneer and plywood industry totalled $18.3 million in 1972. Peeler logs and purchased veneer cost the industry $9.5 million. The industry's payroll totalled $3.4 million and together with wood fiber accounted for over 70% of sales. The only other expenditure of consequence was $1.7 million for materials and supplies.

Pressure-treated wood products shipped from the wood preservation plants in 1972 were valued at $10.2 million. Wood inputs--fence posts, poles, ties, rough lumber, etc.--constituted the major expenditure at $4.1 million, or 40% of net sales. Salaries and wages accounted for the second largest expenditure at $1.2 million, followed very closely by materials and supplies at $1.1 million. Combined, these cost items amounted to $6.4 million, or 63% of sales. Compared with the other industry groups, the wood preservation industry had the lowest wage expenditure per dollar of sales (Table 48).

VALUE ADDED OF OUTPUT

Value added can be roughly defined as the net selling value of shipments, minus the cost of manufacturing materials and supplies, minus the cost of fuel and electricity consumed, plus or minus inventory

Table 48. DISTRIBUTION OF MAJOR PRODUCTION COSTS AS A PERCENTAGE OF NET SALES IN THE ALBERTA FOREST INDUSTRY, 1972

	Wood Industries			Paper and Allied Industries[1]
	Sawmills and Planing Mills	Veneer and Plywood Mills	Wood Preserving	1. Pulp and Paper Mill 2. Asphalt Roofing Mfrs.
No. Firms	222	3	7	4
	percent			
Wood Inputs	46.6	51.7	40.5	23.4
Salaries and Wages	19.9	18.5	11.8	19.4
Fuel and Electricity	2.3	1.6	1.5	4.4
Materials and Supplies	5.4	9.0	10.9	14.2
Miscellaneous	5.4	8.5	7.0	6.9
Residual	20.4	10.7	28.3	31.7
TOTAL	100.0	100.0	100.0	100.0
Net Sales ($000's)	81 194	18 305	10 160	39 849

[1] Companies classified under Paper and Allied Industries were grouped to avoid disclosure of confidential data.

SOURCE: Table 47

adjustment. Thus it measures the value which has been "added" to brought-in materials by the process of production. As such its major components include labor costs (salaries and wages), the cost of capital (interest, rent, depreciation), and the return to the enterprise (profits). It is considered one of the more accurate economic parameters available for comparing the economic importance of industries.

Table 49 gives the value added and selling value of shipments for the logging and primary wood-using industries. Value added by these industries to the gross provincial product in 1972 amounted to $84.1 million. Of this the sawmill and planing mill industry created $37.1 million (44%), the four firms comprising the paper and allied industries $23.1 million (27%), and the logging industry $12.2 million (15%).

Value added by Alberta's manufacturing sector in 1972 was $849.5 million (Table 6). Value added by the wood industries was $76.4 million, or 9.0% of the total, followed at a distance by the paper and allied industries at $29.7 million, or 3.5%. Among the 20 industry groups comprising the sector, the wood industries ranked third behind the food and beverage, and non-metallic mineral products industries. The paper and allied industries ranked tenth.

Within their respective industry groups, the primary wood-using industries tended to dominate, and consequently were important contributors to the Alberta forest-based economy. In the wood industries group, for example, the primary wood-using establishments

Table 49. VALUE ADDED AND SALES IN THE ALBERTA FOREST INDUSTRY, 1972

Industry Group	No. Firms	Value Added Manufacturing Activity	Selling Value of Shipments	% Value Added of Selling Value	Gross Sales[1]
		$000's			
Logging	80	12 233	26 949	45.4	-
Wood Industries					
Sawmills and Planing Mills	222	37 107	81 194	45.7	86 393
Veneer and Plywood Mills	3	6 901	18 305	37.7	20 538
Wood Preservation Industry	7	4 778	10 160	47.0	11 087
TOTAL		48 786	109 659	44.5	118 018
Paper and Allied Industries					
Pulp and Paper Mills)	2	23 093	39 849	58.0	47 863
Asphalt Roofing Mfrs.)	2				
TOTAL FORESTRY SECTOR	236	84 112	176 457	47.7	

[1] Includes sales taxes, excise duties and taxes, outward transportation charges, sales discounts, sales allowances, and so forth.

SOURCE: Appendix F, Table 1

Statistics Canada. 1974. Logging, 1972. Cat. No. 25-201. Annual.

accounted for 64% of total value added, while those in the paper and allied industries group accounted for 78%. In total the primary wood-using industries accounted for approximately 68% of the combined value added by the two industry groups.

CHAPTER VII

THE ECONOMIC CONTRIBUTION OF ALBERTA'S FOREST INDUSTRY

Alberta's forest industries are a relatively important contributor to the manufacturing economy of the province. In 1972 Alberta's forest products industries accounted for 10% of sales, 14% of employment, 13% of salaries and wages, and 13% of value added of the respective totals for the manufacturing sector. Beyond these direct and measurable contributions are the contributions to other industries and sectors of the economy which have economic ties with the forest industry.

Alberta's forest resource is presently underutilized. The allowable annual cut for softwoods, estimated at 14 million m^3 (498.6 million ft^3) is over three times the 1972 harvest of 4.2 million m^3 (147.4 million ft^3); that of hardwoods is almost 132 times the 1972 cut of 87 782 m^3 (3.1 million ft^3). Although the estimated allowable cut is based on the full utilization of all stands, the magnitude of the calculated timber surplus suggests considerable scope for expansion of the forest industry in spite of the fact that not all forest land currently allocated to timber production will remain available for such use. The withdrawal of forest lands from commercial timber operations will likely continue, particularly in areas along the eastern slope of the Rocky Mountains.

The growth of the forest industry in Alberta since 1972 clearly reflects industry's intentions to utilize available surplus volume of wood fiber. Developments completed or underway include a kraft pulp mill,

several wood treatment plants, a flakeboard plant, a veneer mill, and several large sawmill and planing mill complexes. In total these projects represent a capital investment in excess of $115 million, and when completed they will have created direct employment of more than 1500 permanent jobs. Many of these industries are located in established areas and dominate the industrial base. Therefore, in addition to generating direct benefits, these industries will strengthen the economic base and viability of the communities in which they are located.

The forest industry in 1972 was comprised of 236 establishments, of which fewer than 50 operated year-round on a full-time basis. The majority of the smaller sawmills--those in which production was less than 11 799 m^3 (<5000 Mfbm)--operated sporadically throughout the year, produced about 18% of the total lumber manufactured, and generally paid the lowest wages. Planning for the expansion of existing industry or the development of new industry should seriously consider vertical and horizontal integration of operations. Such an approach to development would not only provide more of the better paying jobs and stable, full-time employment, but would also achieve better utilization of roundwood inputs, thus enabling the entrepreneur and province to reap the benefits of producing the highest value product from the resource.

CONTRIBUTION OF ALBERTA'S FOREST INDUSTRY TO THE PROVINCIAL ECONOMY

The contribution of the forest industry to the provincial economy has been measured in this report in terms of employment, salaries and wages, products, markets, and value added. In 1972, 4833

full-time jobs were provided by the primary wood-using industry. With indirect employment of an additional 5119 jobs, total employment of 9952 was significant. Thirteen percent of the jobs in the forest industry were held by Indian or Métis people. Most of them (88%) were employed in the sawmill and planing mill industry.

Export of forest products earned a conservatively estimated $89 million in export earnings for the province in 1972. The American market purchased 90% of Alberta's kraft pulp production and 66% of the lumber.

The total payroll of the primary wood-using industries in 1972 was $28 million. For every dollar of net sales $.19 was returned to employees in payment for services performed. The sawmill and planing mill industry had the largest payroll at $16.1 million, followed by the paper and allied products group at $7.7 million. The forest industry payroll accounted for 6.6% of the total for the manufacturing sector.

Since policy-makers and resource managers are concerned about efficient resource use the relationships in Table 50 are of considerable interest. The wood preservation industry returned the largest amount per cubic metre of wood in gross and net sales, value added, salaries and wages, and employment. In second place were the veneer and plywood mills. Sawmill and planing mills ranked last. Other factors such as markets and wood input characteristics would have to be considered, but given the dangerous aspects of sawmilling as reflected by the high workmen's compensation premiums, one could argue the case for processing wood through wood preservation and veneer and plywood industries.

Table 50. INTER-INDUSTRY COMPARISONS OF SELECTED ECONOMIC MEASURES

Measures	Industry							
	Paper and Allied Industries		Wood Preservation Industry		Sawmill and Planing Mills		Veneer and Plywood Mills	
Per m^3 (cunit) of Wood Input								
Gross Sales	$46	($130)	$75	($213)	$28	($ 78)	$52	($148)
Net Sales	$38	($108)	$69	($195)	$26	($ 74)	$47	($132)
Value Added	$22	($ 63)	$32	($ 92)	$12	($ 34)	$18	($ 50)
Salaries and Wages	$ 7	($ 21)	$ 8	($ 23)	$ 5	($ 15)	$ 8	($ 24)
Employment[1] (man-hours)	1.66	(4.71)	2.31	(6.54)	1.35	(3.83)	2.21	(6.25)
Per Employee[1,2]								
Gross Sales	$57 321		$68 017		$42 537		$49 369	
Net Sales	$47 724		$62 329		$39 977		$44 001	
Value Added	$27 656		$29 315		$18 270		$16 588	
Salaries and Wages	$ 9 244		$ 7 349		$ 7 942		$ 8 121	
Wood Input--m^3 (cunits)	1 252	(442)	903	(319)	1 538	(543)	943	(333)

[1] Mill employment only.

[2] Man-year basis.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

ALBERTA'S TIMBER RESOURCE--PRESENT AND FUTURE

Increasing world population and industrialization will result in increasing demand for timber and related products. Since Canada is the leading timber exporting nation in the world (U.S. Department of Agriculture, 1973), increases in international demand, particularly in the United States, will have a direct effect on the Canadian forest industry. Industrial expansion can be expected to concentrate in those regions having the largest supplies of economically available timber. In 1972 Canada's timber harvest was 124 million m^3 (4380 million ft^3), or 55% of its economic allowable annual cut (Table 51). Based on the economic allowable cut and the 1972 harvest (Table 52), Canada's surplus of economically available timber was 102 million m^3 (3611 million ft^3). British Columbia, Ontario, and the Prairie regions combined shared about equally in 75% of this surplus. British Columbia has almost all of its surplus timber in softwood species, Ontario is dominated by hardwoods, and the Prairie region has almost equal quantities of each type. Thus it appears that the Prairie region has the potential to support an expanded forest industry of national as well as regional importance.

Alberta's 1972 timber harvest of 4.9 million m^3 (172 million ft^3) was about 53% of the Prairie total. The volume harvested from provincial lands accounted for 87% and that from other lands for 13% of the total. From provincial crown lands softwoods represented 30% and hardwoods 1% of the estimated allowable cut (Table 30). Based on the estimated allowable cut and 1972 timber volumes harvested from provincial crown lands, the forest industry could harvest an additional 22 million m^3

Table 51. CANADA'S TIMBER HARVEST, 1972[1], AS A PERCENT OF GROSS PHYSICAL AND ECONOMIC ALLOWABLE CUT BY REGION

Region	Gross Physical A.A.C.			Economic A.A.C.[2]		
	Softwood	Hardwood	Total	Softwood	Hardwood	Total
	millions of m^3 (millions of ft^3)					
British Columbia	94 040	850	94 890	83 110	425	83 535
	(3 321)	(30)	(3 351)	(2 935)	(15)	(2 950)
%[3]	59.7	36.1	59.5	67.6	72.1	67.6
Prairie Provinces	29 449	17 273	46 722	20 615	12 091	32 706
	(1 040)	(610)	(1 650)	(728)	(427)	(1 155)
%[3]	28.9	5.0	20.1	41.3	7.1	28.6
Ontario	37 746	36 614	74 360	20 331	23 107	43 438
	(1 333)	(1 293)	(2 626)	(718)	(816)	(1 534)
%[3]	36.5	9.8	23.3	67.8	15.5	40.0
Quebec	52 018	11 667	63 685	38 228	6 853	45 081
	(1 837)	(412)	(2 249)	(1 350)	(242)	(1 592)
%[3]	43.3	45.7	43.7	58.9	77.7	61.7
Atlantic Provinces	18 378	6 145	24 523	16 141	5 380	21 521
	(649)	(217)	(866)	(570)	(190)	(760)
%[3]	62.5	25.0	53.1	71.2	28.6	60.5
TOTAL	231 631	72 549	304 180	178 425	47 856	226 281
	(8 180)	(2 562)	(10 742)	(6 301)	(1 690)	(7 991)
%[3]	48.5	16.0	40.8	63.0	24.2	54.8

[1] Excluding Yukon and Northwest Territories.

[2] The allowable annual cut on areas now physically accessible or becoming so which could be utilized under present (1972) cost/price levels for lumber and plywood and somewhat improved prices for pulp and newsprint.

[3] 1972 actual production as a percent of gross physical and economic allowable annual cut.

SOURCE: Council of Forest Industries of British Columbia. 1972. Canada's Forest Resource and Forest Products Potential. Vancouver, B.C., 1972.

Statistics Canada. 1974. Logging, 1972. Cat. No. 25-201. Annual.

Table 52. SURPLUS TIMBER AVAILABLE FOR INDUSTRIAL EXPANSION BY REGION

Region	Canada's Timber Harvest, 1972			Estimated Surplus Timber, 1972			Relative Share of Surplus Timber by Region		
	Softwood	Hardwood	Total[1]	Softwood	Hardwood	Total[1]	Softwood	Hardwood	Total
	millions of m^3 (millions of ft^3)			millions of m^3 (millions of ft^3)			%		
British Columbia	56 152 (1 983)	312 (11)	56 464 (1 994)	26 958 (952)	113 (4)	27 071 (956)	40.8	0.3	26.5
Prairie Provinces	8 495 (300)	850 (30)	9 345 (330)	12 120 (428)	11 242 (397)	23 361 (825)	18.4	31.0	22.8
Ontario	13 790 (487)	3 568 (126)	17 358 (613)	6 541 (231)	19 539 (690)	26 080 (921)	9.9	53.9	25.5
Quebec	22 512 (795)	5 324 (188)	27 836 (983)	15 716 (555)	1 529 (54)	17 245 (609)	23.8	4.2	16.9
Atlantic Provinces	11 497 (406)	1 529 (54)	13 026 (460)	4 644 (164)	3 851 (136)	8 495 (300)	7.0	10.6	8.3
Canada[1]	112 418 (3 970)	11 610 (410)	124 028 (4 380)	66 006 (2 331)	36 246 (1 280)	102 252 (3 611)	99.9	100.0	100.0

[1] Totals may not add due to rounding.

SOURCE: Council of Forest Industries of British Columbia. 1972. Canada's Forest Resource and Forest Products Potential. Vancouver, B.C., 1972.

(762 million ft^3) annually. Full utilization of Alberta's surplus timber could support an industry six times its present size. However, distribution of timber types, remoteness of stands, quality of timber, low yield capability of some forest land, and transfer of timber production areas to other uses seem to preclude development to this level. It does not, however, prevent expansion of the forest industry to some level below the estimated allowable cut, nor does it prevent expansion to a level above it should Alberta's forests be managed at higher levels of productivity than at present.

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APPENDIXES

APPENDIX A

SELECTED METRIC (SI) UNITS AND CONVERSION FACTORS

Canadian Unit	Metric (SI)
1 in.	2.54 cm
1 mile	1.609 34 km
1 acre	0.404 686 ha
1 sq mile	2.589 99 km^2
1 cord (85 ft^3 solid wood)	2.406 928 m^3
1 ft^3	0.028 316 8 m^3
1 cunit (100 ft^3 of solid wood)	2.831 68 m^3
1 ton (2000 lb)	0.907 185 t
1 cord (stacked) per acre	8.956 47 m^3 (stacked)/ha
1 ft^3 per acre	0.069 972 5 m^3/ha
1000 bd ft	2.359 737 m^3
1 bone dry unit wood chips (2400 lb)	1.088 622 t
1 ft^2 of sheet product (1/2" basis)	1.179 868 6 m^2 (1 mm basis)

SOURCE: Environment Canada. 1974. Selected Metric (SI) Units and Conversion Factors for Canadian Forestry. Canadian Forestry Service, November, 1974

APPENDIX B

LUMBER PRODUCTION BY SIZE CLASS FOR ALBERTA SAWMILLS, 1972

Sawmill Class Size[1] m^3	Sawmill Class Size[1] fbm	Number of Sawmills per Size Class	Production m^3	Production Mfbm	Class Percent of Total Production
0 - 4 719	0 - 2 000	14	1 020	430	0.070
4 722 - 7 079	2 001 - 3 000	14	904	380	0.062
7 082 - 9 439	3 001 - 4 000	6	117	47	0.008
9 441 - 11 799	4 001 - 5 000	19	1 617	686	0.111
11 801 - 14 158	5 001 - 6 000	14	4 999	2 121	0.343
14 161 - 18 878	6 001 - 8 000	16	2 084	881	0.143
18 880 - 23 597	8 001 - 10 000	28	8 380	3 554	0.575
23 600 - 28 317	10 001 - 12 000	11	10 173	4 314	0.698
28 319 - 33 036	12 001 - 14 000	6	1 545	657	0.106
33 039 - 35 396	14 001 - 15 000	5	1 691	714	0.116
35 398 - 47 195	15 001 - 20 000	11	27 138	11 498	1.862
47 197 - 58 993	20 001 - 25 000	10	37 865	16 045	2.598
58 996 - 70 792	25 001 - 30 000	13	68 471	29 017	4.698
70 794 - 94 390	30 001 - 40 000	18	99 880	42 327	6.853
94 392 - 117 987	40 001 - 50 000	12	199 628	84 601	13.697
117 989 - 141 584	50 001 - 60 000	7	380 673	161 325	26.119
141 587 - 188 779	60 001 - 80 000	3	138 648	58 760	9.513
188 781 - 306 766	80 001 - 130 000	6	472 623	200 295	32.428
	TOTAL	213	1 457 458[2]	617 652[2]	100.000

[1] Size classes are measured in terms of the potential output in cubic metres (board feet) of a sawmill operating for one 8-h shift.

[2] Represents total production of rough board and dimension lumber, timber, railway ties, and laths. Does not include output of miscellaneous products.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX C

Table 1. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

ATHABASCA FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	538	-	1 227	-	5 004	25	3 038	-	-	9 832
1961-62	1 603	-	9 380	-	1 070	39	3 043	-	-	15 134
1962-63	3 911	-	2 731	-	-	44	2 660	-	-	9 346
1963-64	1 878	152	256	46	-	41	1 754	-	-	4 128
1964-65	2 857	253	125	-	-	32	1 793	-	-	5 059
1965-66	875	268	239	-	-	38	1 771	-	-	3 191
1966-67	1 245	249	115	-	-	57	1 638	-	-	3 304
1967-68	27 279	123	-	-	-	20	978	-	-	28 400
1968-69	21 500	67	-	-	-	24	1 244	-	-	22 836
1969-70	81 190	-	-	-	-	28	1 557	-	-	82 776
1970-71	74 368	-	-	-	-	7	214	-	-	74 589
1971-72	57 943[4]	-	-	-	-	2	-	-	-	57 944
1972-73	64 122[4]	-	-	-	-	-	-	-	-	64 122

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

[4] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 1A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

ATHABASCA FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	19 012	-	43 343	-	176 705	864	107 277	-	-	347 201
1961-62	56 623	-	331 249	-	37 768	1 375	107 454	-	-	534 469
1962-63	138 109	-	96 453	-	-	1 563	93 938	-	-	330 063
1963-64	66 331	5 366	9 048	1 626	-	1 447	61 955	-	-	145 773
1964-65	100 880	8 929	4 423	-	-	1 113	63 321	-	-	178 666
1965-66	30 893	9 474	8 449	-	-	1 337	62 534	-	-	112 687
1966-67	43 962	8 785	4 044	-	-	2 021	57 857	-	-	116 669
1967-68	963 332	4 341	-	-	-	721	34 554	-	-	1 002 948
1968-69	759 273	2 379	-	-	-	846	43 945	-	-	806 443
1969-70	2 867 208	-	-	-	-	1 000	54 995	-	-	2 923 203
1970-71	2 626 297	-	-	-	-	240	7 565	-	-	2 634 102
1971-72	2 046 235[3]	-	-	-	-	54	-	-	-	2 046 289
1972-73	2 264 457[3]	-	-	-	-	-	-	-	-	2 264 457

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 2. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

BOW-CROW FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	167 091	-	-	-	232	18 853	287	149	1 367	187 979
1961-62	200 404	51	-	-	-	30 101	779	876	886	233 097
1962-63	223 962	-	-	-	-	48 618	451	117	912	274 060
1963-64	260 415	51	-	-	-	59 285	240	-	2 267	322 257
1964-65	227 293	-	-	-	-	51 218	585	339	854	280 290
1965-66	196 509	21	12 490	-	46	45 484	598	515	456	256 120
1966-67	166 638	166	-	-	-	37 966	236	383	1 701	207 090
1967-68	163 405	94	10 593	3	-	39 239	720	584	2 251	216 887
1968-69	178 994	57	-	-	-	15 404	66	170	707	195 397
1969-70	205 615	97	4 910	-	67	16 382	859	55	2 200	230 186
1970-71	270 591	-	-	-	-	16 206	1 495	4	2 569	290 864
1971-72	213 037	-	-	-	-	7 006	633	-	13 444	234 121
1972-73	207 592	8	-	-	-	17 951	554	18	13 361	239 483

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 2A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA,1960-72

BOW-CROW FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	5 900 777	-	-	-	8 196	665 779	10 125	5 256	48 291	6 638 424
1961-62	7 077 210	1 786	-	-	-	1 063 004	27 522	30 931	31 292	8 231 745
1962-63	7 909 167	-	-	-	-	1 716 931	15 911	4 138	32 212	9 678 359
1963-64	9 196 460	1 786	-	-	-	2 093 623	8 478	-	80 055	11 380 402
1964-65	8 026 788	-	-	-	-	1 808 764	20 652	11 988	30 158	9 898 350
1965-66	6 939 667	741	441 096	-	1 607	1 606 268	21 135	18 194	16 091	9 044 799
1966-67	5 884 785	5 852	-	-	-	1 340 768	8 317	13 538	60 054	7 313 314
1967-68	5 770 587	3 306	374 078	89	-	1 385 711	25 434	20 619	79 492	7 659 316
1968-69	6 321 106	2 011	-	-	-	544 000	2 321	5 993	24 967	6 900 398
1969-70	7 261 251	3 419	173 379	-	2 380	578 543	30 345	1 950	77 692	8 128 959
1970-71	9 555 833	-	-	-	-	572 312	52 785	143	90 714	10 271 787
1971-72	7 523 350	-	-	-	-	247 422	22 355	-	474 778	8 267 905
1972-73	7 331 037	268	-	-	-	633 945	19 558	629	471 841	8 457 278

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 3. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

CLEARWATER-ROCKY FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	110 430	2 116	-	-	19 252	24 449	667	11 204	93	168 209
1961-62	104 452	2 581	-	506	5 369	22 216	585	3 319	1 491	140 520
1962-63	134 683	3 573	-	3 034	5 917	26 569	287	7 676	2 263	184 002
1963-64	185 905	4 086	-	3 890	6 070	28 780	348	10 723	1 395	241 198
1964-65	124 660	2 314	-	-	-	18 638	1 048	8 698	1 424	156 782
1965-66	111 124	2 810	-	-	738	16 949	320	11 275	1 111	144 328
1966-67	104 647	1 047	-	-	1 157	18 268	187	7 236	1 440	133 981
1967-68	109 320	4 409	-	-	-	20 794	109	8 104	1 140	143 877
1968-69	93 568	7 591	-	22	24	14 703	219	1 497	1 709	119 333
1969-70	116 402	6 124	-	4	-	18 442	694	3 325	1 614	146 605
1970-71	131 227	851	-	8	-	23 798	2 166	6 379	1 795	166 225
1971-72	118 415	2 029	-	-	-	23 340	18	3 229	8 362	155 393
1972-73	162 911	6 523	-	-	-	19 209	153	1 373	10 372	200 541

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 3A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

CLEARWATER-ROCKY FOREST

(cubic feet)

YEAR	PRODUCT									Total
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	3 899 809	74 721	-	-	679 862	863 408	23 545	395 656	3 274	5 940 255
1961-62	3 688 708	91 132	-	17 857	189 619	784 566	20 652	117 225	52 655	4 962 414
1962-63	4 756 291	126 188	-	107 143	208 961	938 278	10 125	271 081	79 923	6 497 990
1963-64	6 565 182	144 312	-	137 357	214 353	1 016 374	12 295	378 694	49 272	8 517 839
1964-65	4 402 333	81 707	-	-	-	658 208	37 004	307 150	50 299	5 536 701
1965-66	3 924 299	99 249	-	-	26 076	598 557	11 290	398 169	39 246	5 096 886
1966-67	3 695 581	36 982	-	-	40 862	645 116	6 589	255 525	50 841	4 731 496
1967-68	3 860 619	155 709	-	-	-	734 341	3 857	286 175	40 266	5 080 967
1968-69	3 304 335	268 067	-	776	850	519 244	7 735	52 850	60 341	4 214 198
1969-70	4 110 703	216 266	-	145	-	651 278	24 522	117 429	56 986	5 177 329
1970-71	4 634 234	30 056	-	283	-	840 423	76 500	225 289	63 407	5 870 192
1971-72	4 181 799	71 665	-	-	-	824 232	637	114 021	295 291	5 487 645
1972-73	5 753 155	230 372	-	-	-	678 359	5 414	48 475	366 287	7 082 062

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 4. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

EDSON FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	47 308	440	1 230	-	698 949	3 879	77	34 004	-	785 888
1961-62	38 225	233	2 721	253	593 831	2 742	159	18 583	-	656 747
1962-63	48 599	703	4 933	-	618 346	5 788	66	66 394	-	744 830
1963-64	43 445	2 468	4 008	-	749 035	15 864	562	57 440	-	872 821
1964-65	51 901	579	2 056	253	889 173	16 088	273	35 136	-	995 459
1965-66	35 940	2 836	416	-	836 519	9 214	284	20 967	-	906 176
1966-67	16 359	5 895	-	-	850 561	23 687	596	17 887	-	914 985
1967-68	18 670	1 674	284	-	553 382	27 479	564	29 952	2	632 007
1968-69	59 900	5 167	-	2 344	646 920	13 397	154	28 400	-	756 283
1969-70	32 178	592	-	-	857 749	10 197	168	28 480	-	929 363
1970-71	46 485	5 168	-	-	641 295	21 061	217	30 759	-	744 985
1971-72	58 591[4]	7 932	-	-	724 353	4 449	121	24 861	-	820 307
1972-73	253 212[4]	6 326	-	-	969 863	5 979	1 073	15 172	-	1 251 626

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

[4] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 4A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

EDSON FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	1 670 659	15 536	43 441	-	24 683 207	136 995	2 732	1 200 831	-	27 753 401
1961-62	1 349 923	8 220	96 074	8 929	20 970 972	96 834	5 625	656 250	-	23 192 827
1962-63	1 716 256	24 842	174 222	-	21 836 724	204 416	2 330	2 344 681	-	26 303 471
1963-64	1 534 249	87 144	141 544	-	26 451 948	560 240	19 848	2 028 469	-	30 823 442
1964-65	1 832 870	20 457	72 611	8 929	31 400 888	568 149	9 643	1 240 819	-	35 154 366
1965-66	1 269 210	100 135	14 700	-	29 541 431	325 392	10 045	740 456	-	32 001 369
1966-67	577 718	208 166	-	-	30 037 315	836 514	21 054	631 669	-	32 312 436
1967-68	659 310	59 109	10 042	-	19 542 528	970 410	19 929	1 057 739	73	22 319 140
1968-69	2 115 363	182 458	-	82 776	22 845 815	473 126	5 440	1 002 949	-	26 707 927
1969-70	1 136 341	20 893	-	-	30 291 161	360 093	5 950	1 005 771	-	32 820 209
1970-71	1 641 605	182 510	-	-	22 647 162	743 751	7 650	1 086 250	-	26 308 928
1971-72	2 069 111[3]	280 128	-	-	25 580 333	157 132	4 267	877 957	-	28 968 928
1972-73	8 942 124[3]	223 410	-	-	34 250 452	211 173	37 876	535 799	-	44 200 834

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 5. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

FOOTNER LAKE FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	15 696	-	-	-	-	338	5 011	-	2	21 046
1961-62	6 777	-	-	-	-	550	8 424	-	-	15 751
1962-63	13 713	-	-	-	-	1 249	5 888	-	57	20 907
1963-64	41 846	-	-	-	-	927	6 148	-	-	48 922
1964-65	81 057	-	-	-	-	500	5 750	-	9	87 316
1965-66	138 008	-	-	-	-	355	3 502	-	12	142 443
1966-67	139 781	-	-	-	-	134	1 880	-	27	141 822
1967-68	166 582	25	-	-	-	625	1 479	-	-	168 711
1968-69	232 410	-	-	-	-	259	980	-	-	233 649
1969-70	305 169	20	-	-	-	57	1 208	-	5	306 459
1970-71	286 154	-	-	-	-	234	1 509	-	-	287 898
1971-72	310 610	-	-	-	-	-	-	-	-	310 610
1972-73	390 277	-	-	-	-	-	-	-	-	390 277

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 5A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

FOOTNER LAKE FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	554 313	-	-	-	-	11 920	176 946	-	71	743 250
1961-62	239 333	-	-	-	-	19 417	297 482	-	-	556 232
1962-63	484 281	-	-	-	-	44 098	207 924	-	2 009	738 312
1963-64	1 477 783	-	-	-	-	32 750	217 125	-	-	1 727 658
1964-65	2 862 513	-	-	-	-	17 645	203 063	-	321	3 083 542
1965-66	4 873 701	-	-	-	-	12 551	123 670	-	407	5 010 329
1966-67	4 936 322	-	-	-	-	4 744	66 375	-	964	5 008 405
1967-68	5 882 789	893	-	-	-	22 064	52 232	-	-	5 957 978
1968-69	8 207 503	-	-	-	-	9 152	34 595	-	-	8 251 250
1969-70	10 776 955	714	-	-	-	1 998	42 670	-	170	10 822 507
1970-71	10 105 467	-	-	-	-	8 276	53 295	-	-	10 167 038
1971-72	10 969 098	-	-	-	-	-	-	-	-	10 969 098
1972-73	13 782 530	-	-	-	-	-	-	-	-	13 782 530

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 6. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

GRANDE PRAIRIE FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	133 157	1 570	20 848	7 310	318	11 296	1 231	956	8	176 694
1961-62	228 626	786	87 979	7 285	296	7 069	1 240	461	10	333 752
1962-63	229 867	399	75 866	6 112	-	7 136	1 026	835	9	321 251
1963-64	312 224	379	100 604	7 847	-	11 548	726	-	-	433 328
1964-65	249 297	137	78 538	1 624	-	5 359	366	-	7	335 328
1965-66	127 402	56	159 466	2 996	-	1 427	239	-	-	291 586
1966-67	108 792	25	289 823	710	-	1 636	184	-	-	401 170
1967-68	94 247	25	285 844	-	-	2 296	209	8 384	-	391 006
1968-69	470 219	1 391	5 953	-	-	860	65	13	-	478 500
1969-70	474 696	780	-	-	-	1 452	193	-	-	477 120
1970-71	666 585	303	-	-	-	1 498	207	-	-	668 593
1971-72	537 502[4]	32	-	-	-	145	-	-	-	537 679
1972-73	574 335[4]	-	-	-	2 353	-	-	-	-	576 688

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

[4] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 6A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

GRANDE PRAIRIE FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	4 702 394	55 432	736 238	258 158	11 250	398 927	43 473	33 750	286	6 239 908
1961-62	8 073 878	27 755	3 106 970	257 263	10 446	249 633	43 795	16 269	357	11 786 366
1962-63	8 117 700	14 107	2 679 201	215 830	-	251 990	36 241	29 500	321	11 344 890
1963-64	11 026 112	13 393	3 552 785	277 113	-	407 825	25 654	-	-	15 302 862
1964-65	8 803 845	4 839	2 773 563	57 353	-	189 239	12 938	-	241	11 842 018
1965-66	4 499 173	1 964	5 631 501	105 788	-	50 406	8 438	-	-	10 297 270
1966-67	3 841 946	893	10 235 021	25 073	-	57 767	6 509	-	-	14 167 209
1967-68	3 328 310	893	10 094 504	-	-	81 094	7 393	296 081	-	13 808 275
1968-69	16 605 663	49 107	210 231	-	-	30 356	2 295	461	-	16 898 113
1969-70	16 763 743	27 559	-	-	-	51 274	6 800	-	-	16 849 376
1970-71	23 540 258	10 714	-	-	-	52 888	7 310	-	-	23 611 170
1971-72	18 981 727[3]	1 140	-	-	-	5 136	-	-	-	18 988 003
1972-73	20 282 484[3]	-	-	-	83 087	-	-	-	-	20 365 571

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 7. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

LAC LA BICHE FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	58 294	1 830	-	-	423	7 982	1 677	1 959	8	72 173
1961-62	83 238	1 868	-	-	55	6 990	808	1 769	574	95 300
1962-63	73 578	2 192	-	-	-	15 672	1 279	7	134	92 862
1963-64	85 084	1 552	-	-	80	16 641	808	566	n.s.	104 731
1964-65	54 033	1 077	-	1 021	-	5 151	1 254	-	-	62 536
1965-66	55 488	1 370	-	8 125	114	6 229	528	411	171	72 435
1966-67	89 629	2 023	-	1 986	478	5 297	851	-	101	100 365
1967-68	81 050	526	-	-	-	6 425	439	-	-	88 441
1968-69	230 578	2 030	-	-	-	1 883	542	-	65	235 097
1969-70	221 679	760	-	-	-	2 679	1 182	-	39	226 339
1970-71	155 998	158	-	-	-	1 874	2 167	-	-	160 198
1971-72	154 905	-	-	-	-	77	83	-	-	155 065
1972-73	127 038	140	-	-	-	204	119	-	-	127 501

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

n.s. - non significant

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 7A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA 1960-72

LAC LA BICHE FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	2 058 627	64 623	-	-	14 946	281 875	59 223	69 188	271	2 548 753
1961-62	2 939 523	65 957	-	-	1 929	246 837	28 527	62 469	20 260	3 365 502
1962-63	2 598 387	77 420	-	-	-	553 455	45 161	238	4 733	3 279 394
1963-64	3 004 721	54 825	-	-	2 813	587 659	28 527	20 000	6	3 698 551
1964-65	1 908 163	38 036	-	36 065	-	181 907	44 277	-	-	2 208 448
1965-66	1 959 529	48 371	-	286 937	4 018	219 979	18 643	14 525	6 035	2 558 037
1966-67	3 165 219	71 429	-	70 142	16 875	187 079	30 054	-	3 581	3 544 379
1967-68	2 862 265	18 571	-	-	-	226 909	15 509	-	-	3 123 254
1968-69	8 142 809	71 675	-	-	-	66 503	19 125	-	2 280	8 302 392
1969-70	7 828 526	26 839	-	-	-	94 623	41 735	-	1 360	7 993 083
1970-71	5 509 023	5 595	-	-	-	66 182	76 542	-	-	5 657 342
1971-72	5 470 423	-	-	-	-	2 708	2 932	-	-	5 476 063
1972-73	4 486 324	4 952	-	-	-	7 194	4 190	-	-	4 502 660

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 8. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

PEACE RIVER FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	130 393	410	-	-	2 371	4 586	2 599	3 694	8	144 060
1961-62	153 856	1 345	-	-	-	3 990	2 528	1 152	23	162 893
1962-63	157 793	2 442	-	-	137	5 781	3 375	5 708	16	175 251
1963-64	157 622	47	-	6 356	234	4 438	2 901	5 821	11	177 431
1964-65	158 030	-	133	-	125	1 584	1 606	1 503	11	162 994
1965-66	117 456	-	-	-	-	1 928	1 345	2 744	-	123 472
1966-67	148 525	-	-	-	114	750	398	3 014	11	152 813
1967-68	127 921	126	-	-	-	1 597	972	1 752	-	132 368
1968-69	144 971	308	252	-	-	742	1 035	16	-	147 325
1969-70	250 472	12	2 393	-	-	506	645	369	-	254 397
1970-71	281 510	41	-	-	-	925	1 037	320	-	283 834
1971-72	283 615[4]	35	-	-	-	-	12	258	-	283 920
1972-73	304 635[4]	34	-	-	-	3	20	191	-	304 884

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

[4] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 8A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LAND, ALBERTA, 1960-72

PEACE RIVER FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	4 604 778	14 464	-	-	83 732	161 947	91 768	130 450	288	5 087 427
1961-62	5 433 386	47 500	-	-	-	140 893	89 277	40 675	804	5 752 535
1962-63	5 572 399	86 250	-	-	4 821	204 165	119 170	201 588	561	6 188 954
1963-64	5 566 363	1 657	-	224 471	8 277	156 717	102 455	205 569	402	6 265 911
1964-65	5 580 791	-	4 709	-	4 420	55 951	56 732	53 094	402	5 756 099
1965-66	4 147 925	-	-	-	-	68 089	47 491	96 888	-	4 360 393
1966-67	5 245 127	-	-	-	4 018	26 499	14 063	106 438	402	5 396 547
1967-68	4 517 505	4 464	-	-	-	56 397	34 313	61 856	-	4 674 535
1968-69	5 119 628	10 893	8 888	-	-	26 214	36 550	573	-	5 202 746
1969-70	8 845 339	430	84 502	-	-	17 874	22 780	13 027	-	8 983 952
1970-71	9 941 458	1 449	-	-	-	32 676	36 635	11 301	-	10 023 519
1971-72	10 015 773[3]	1 248	-	-	-	-	425	9 096	-	10 026 542
1972-73	10 758 104[3]	1 210	-	-	-	100	722	6 747	-	10 766 883

[1] Comprises posts, poles, and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 9. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

SLAVE LAKE FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel wood	Railway Ties	Other[2]	
1960-61	299 614	5 178	13 453	30 419	17 514	9 581	1 827	6 208	-	383 794
1961-62	323 277	2 097	11 466	53 814	8 765	9 803	2 699	4 851	-	416 773
1962-63	352 048	1 608	25 957	54 972	2 519	16 247	2 778	10 058	-	466 188
1963-64	383 452	4 381	47 624	77 170	335	16 949	1 812	18 385	-	550 108
1964-65	357 378	116	23 756	51 082	264	8 640	2 521	3 763	-	447 522
1965-66	276 442	2 335	19 815	50 426	130	8 951	1 463	10 598	60	370 221
1966-67	301 631	750	41 066	52 873	2 458	7 946	1 789	11 081	18	419 612
1967-68	298 978	948	8 725	16 251	494	6 215	517	18 101	-	350 229
1968-69	600 026	2 746	84 118	20 296	1 083	1 845	2 754	12 225	-	725 092
1969-70	545 178	2 306	25 890	13 144	-	1 420	1 170	15 748	-	604 855
1970-71	327 906	3 561	35 390	-	2 375	1 978	1 374	14 030	-	386 614
1971-72	426 190[4]	45 603	-	-	-	155	-	8 981	-	480 929
1972-73	708 973[4]	74 480	-	-	-	-	-	14 710	-	798 163

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

[4] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 9A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

SLAVE LAKE FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[2]	Fuel-wood	Railway Ties	Other[2]	
1960-61	10 580 778	182 849	475 106	1 074 249	618 509	338 350	64 527	219 225	-	13 553 593
1961-62	11 416 444	74 057	404 911	1 900 439	309 536	346 194	95 304	171 325	-	14 718 210
1962-63	12 432 479	56 786	916 671	1 941 333	88 955	573 771	98 116	355 200	-	16 463 311
1963-64	13 541 491	154 699	1 681 839	2 725 224	11 813	598 559	64 004	649 275	-	19 426 904
1964-65	12 620 712	4 107	838 950	1 803 957	9 321	305 136	89 036	132 894	-	15 804 113
1965-66	9 762 488	82 465	699 754	1 780 784	4 580	316 094	51 670	374 269	2 134	13 074 238
1966-67	10 652 014	26 498	1 450 249	1 867 189	86 786	280 614	63 161	391 325	643	14 818 479
1967-68	10 558 329	33 478	308 130	573 895	17 438	219 497	18 241	639 238	-	12 368 246
1968-69	21 189 743	96 991	2 970 592	716 746	38 250	65 146	97 240	431 714	-	25 606 422
1969-70	19 252 827	81 429	914 294	464 161	-	50 146	41 310	556 134	-	21 360 301
1970-71	11 579 901	125 760	1 249 772	-	83 878	69 848	48 535	495 478	-	13 653 172
1971-72	15 050 800[3]	1 610 446	-	-	-	5 471	-	317 144	-	16 983 861
1972-73	25 037 198[3]	2 630 227	-	-	-	-	-	519 495	-	28 186 920

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Includes peeler logs.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C

Table 10. TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

WHITECOURT FOREST

(cubic metres)

YEAR	PRODUCT									TOTAL[3]
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	288 355	7 151	253	5 356	16 448	17 405	601	5 810	123	341 501
1961-62	340 882	5 928	-	5 349	11 240	8 389	132	2 904	23	374 847
1962-63	365 742	4 968	-	4 202	12 488	21 657	633	33 457	-	443 147
1963-64	475 621	9 013	-	3 555	35 658	40 164	721	30 942	-	595 674
1964-65	401 163	8 113	-	3 675	17 213	20 980	2 815	21 610	-	475 569
1965-66	417 888	6 123	-	5 208	21 731	19 477	337	27 566	-	498 330
1966-67	431 462	8 647	253	5 309	23 288	13 716	149	31 119	-	513 944
1967-68	332 694	2 556	-	1 517	11 556	17 173	389	31 166	127	397 177
1968-69	361 006	2 889	-	202	2 361	9 154	318	16 634	-	392 564
1969-70	378 351	1 177	-	-	3 945	6 170	426	4 555	-	394 625
1970-71	257 225	148	-	-	6 167	4 405	712	177	-	268 835
1971-72	347 446	620	-	-	31	700	72	2 201	-	351 070
1972-73	307 184	356	-	-	82	1 068	70	496	-	309 256

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

[3] Totals may not add due to rounding.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX C TABLE 10 A

TIMBER PRODUCTION BY PRODUCT ON PROVINCIAL CROWN LANDS, ALBERTA, 1960-72

WHITECOURT FOREST

(cubic feet)

YEAR	PRODUCT									TOTAL
	Sawtimber (softwood)	Sawtimber (hardwood)	Plywood peeler logs (softwood)	Plywood peeler logs (hardwood)	Pulpwood	Round Timber[1]	Fuel-wood	Railway Ties	Other[2]	
1960-61	10 183 179	252 536	8 929	189 142	580 846	614 654	21 214	205 181	4 333	12 060 014
1961-62	12 038 164	209 333	-	188 912	396 948	296 238	4 661	102 557	804	13 237 617
1962-63	12 916 066	175 441	-	148 387	441 024	764 822	22 339	1 181 519	-	15 649 598
1963-64	16 796 436	318 283	-	125 556	1 259 253	1 418 370	25 473	1 092 694	-	21 036 065
1964-65	14 166 973	286 524	-	129 775	607 886	740 903	99 402	763 138	-	16 794 601
1965-66	14 757 605	216 230	-	183 929	767 427	687 828	11 893	973 481	-	17 598 393
1966-67	15 236 961	305 371	8 929	187 500	822 415	484 385	5 271	1 098 969	-	18 149 801
1967-68	11 748 982	90 276	-	53 571	408 110	606 443	13 741	1 100 606	4 482	14 026 211
1968-69	12 748 810	102 025	-	7 143	83 385	323 275	11 220	587 438	-	13 863 296
1969-70	13 361 378	41 579	-	-	139 315	217 897	15 045	160 865	-	13 936 079
1970-71	9 083 847	5 214	-	-	217 787	155 569	25 160	6 261	-	9 493 838
1971-72	12 269 945	21 902	-	-	1 088	24 727	2 550	77 713	-	12 397 925
1972-73	10 848 118	12 585	-	-	2 890	37 731	2 465	17 512	-	10 921 301

[1] Comprises posts, poles and piling.

[2] Includes shingle and lath bolts, mine ties, etc.

SOURCE: Timber Management Branch, Alberta Forest Service

APPENDIX D

Table 1. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS <2 360 m^3, 1972[1] (Cont.)

Board Lumber Species	2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn m^3	Mfbm	Net Intra-Industry Transfers[3] m^3	Mfbm	Total Final Production m^3	Mfbm	Rough Lumber Marketings Alberta Truck m^3	Mfbm	Planed Lumber Marketings Alberta Truck m^3	Mfbm
Spruce	2.54 x 10.16	1x4	592	251	309	131	283	120	241	102	42	18
	2.54 x 15.24	1x6	634	269	295	125	339	144	238	101	101	43
	2.54 x 20.32 to 30.48	1x8 to 12	646	274	335	142	311	132	269	114	42	18
Pine	2.54 x 10.16	1x4	361	153	-	-	361	153	243	103	118	50
	2.54 x 15.24	1x6	397	168	-	-	397	168	286	121	111	47
	2.54 x 20.32 to 30.48	1x8 to 12	239	101	-	-	239	101	135	57	104	44
Poplar	2.54 x 10.16	1x4	80	34	-	-	80	34	68	29	12	5
	2.54 x 15.24	1x6	293	124	-	-	293	124	281	119	12	5
	2.54 x 20.32 to 30.48	1x8 to 12	319	135	-	-	319	135	307	130	12	5
Balsam Fir	2.54 x 10.16	1x4	5	2	-	-	5	2	5	2	-	-
	2.54 x 15.24	1x6	14	6	-	-	14	6	14	6	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	12	5	-	-	12	5	12	5	-	-
	TOTAL		3 592	1 522	939	398	2 653	1 124	2 099	889	554	235

APPENDIX D

Table 1. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS <2 360 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn m^3	Mfbm	Net Intra-Industry Transfers[3] m^3	Mfbm	Total Final Production m^3	Mfbm	Rough Lumber Marketings Alberta Truck m^3	Mfbm	Planed Lumber Marketings Alberta Truck m^3	Mfbm
Spruce	5.08 x 10.16	2x4	3 058	1 296	2 584	1 095	474	201	99	42	375	159
	5.08 x 15.24	2x6	2 289	970	576	244	1 713	726	1 524	646	189	80
	5.08 x 20.32	2x8	1 340	568	241	102	1 099	466	998	423	101	43
	5.08 x 25.40 to 30.48	2x10 to 12	1 159	491	193	82	966	409	935	396	31	13
Pine	5.08 x 10.16	2x4	1 813	768	-	-	1 813	768	1 159	491	654	277
	5.08 x 15.24	2x6	2 586	1 096	-	-	2 586	1 096	1 616	685	970	411
	5.08 x 20.32	2x8	760	322	-	-	760	322	427	181	333	141
	5.08 x 25.40 to 30.48	2x10 to 12	515	218	-	-	515	218	288	122	227	96
Poplar	5.08 x 10.16	2x4	486	206	353	150	133	56	67	28	66	28
	5.08 x 15.24	2x6	420	178	286	121	134	57	2	1	132	56
	5.08 x 20.32	2x8	248	105	170	72	78	33	28	12	50	21
	5.08 x 25.40 to 30.48	2x10 to 12	128	54	66	28	62	26	12	5	50	21
Balsam Fir	5.08 x 10.16	2x4	38	16	-	-	38	16	38	16	-	-
	5.08 x 15.24	2x6	17	7	-	-	17	7	17	7	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	19	8	-	-	19	8	19	8	-	-
TOTAL			14 876	6 303	4 469	1 894	10 407	4 409	7 229	3 063	3 178	1 346

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Table 1. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS <2 360 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn m^3	Total Rough Lumber Sawn Mfbm	Net Intra-Industry Transfers[3] m^3	Net Intra-Industry Transfers[3] Mfbm	Total Final Production m^3	Total Final Production Mfbm	Rough Lumber Marketings Alberta m^3	Rough Lumber Marketings Alberta Mfbm
Timber 10.16 cm (4"+)	Spruce	10.16 x 10.16 to 15.24	4x4 to 6	614	260	328	139	286	121	286	121
		15.24 x 15.24	6x6	472	200	328	139	144	61	144	61
		20.32 x 15.24 to 20.32	8x6 to 8	897	380	625	265	272	115	272	115
		20.32 x 25.40 & 25.40 x 25.40	8x10 & 10x10	354	150	245	104	109	46	109	46
Ties	Spruce			1 510	640	-	-	1 510	640	1 510	640
	Pine			1 510	640	-	-	1 510	640	1 510	640
Laths	Spruce			637	270	-	-	637	270	637	270
	Pine			1 142	484	-	-	1 142	484	1 142	484
	Poplar			130	55	-	-	130	55	130	55
		TOTAL		7 266	3 079	1 526	647	5 740	2 432	5 740	2 432

[1] Equivalent to <1000 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent in fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 2. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1] (Cont.)

Board Lumber Species	2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	West. Can.[4] Truck	B.C. Rail	U.S.A. Rail
						m^3				
Spruce	2.54 x 10.16	1x4	7 546	3 957	3 589	449	2 777	9	99	255
	2.54 x 15.24	1x6	7 938	3 995	3 943	144	3 407	5	76	311
	2.54 x 20.32 to 30.48	1x8 to 12	2 605	1 451	1 154	201	953	-	-	-
Pine	2.54 x 10.16	1x4	1 899	326	1 573	821	684	2	33	33
	2.54 x 15.24	1x6	2 210	569	1 641	514	1 052	2	26	47
	2.54 x 20.32 to 30.48	1x8 to 12	1 435	609	826	366	460	-	-	-
Poplar	2.54 x 10.16	1x4	205	-	205	205	-	-	-	-
	2.54 x 15.24	1x6	125	-	125	125	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	42	-	42	42	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	31	-	31	-	31	-	-	-
	2.54 x 15.24	1x6	1 114	38	1 076	1 022	54	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	481	42	439	413	26	-	-	-
	TOTAL		25 631	10 987	14 644	4 302	9 444	18	234	646

Table 2. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1] (Cont.)

Species	Dimension Lumber 5.08 cm (2") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	West. Can.[4] Truck	B.C. Rail	U.S.A. Rail
						m^3				
Spruce	5.08 x 10.16	2x4	55 371	23 173	32 198	3 853	24 857	354	1 444	1 690
	5.08 x 15.24	2x6	45 236	22 491	22 745	5 385	15 588	170	125	1 477
	5.08 x 20.32	2x8	35 773	14 949	20 824	8 884	10 808	61	-	1 071
	5.08 x 25.40 to 30.48	2x10 to 12	21 377	9 760	11 617	3 863	7 251	31	-	472
Pine	5.08 x 10.16	2x4	10 131	4 316	5 815	741	4 307	90	481	196
	5.08 x 15.24	2x6	9 254	1 841	7 413	3 971	3 105	94	42	201
	5.08 x 20.32	2x8	7 200	1 527	5 673	3 922	1 581	14	-	156
	5.08 x 25.40 to 30.48	2x10 to 12	3 396	637	2 759	1 650	1 034	14	-	61
Poplar	5.08 x 10.16	2x4	3 023	2 792	231	231	-	-	-	-
	5.08 x 15.24	2x6	425	370	55	55	-	-	-	-
	5.08 x 20.32	2x8	378	340	38	38	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	90	80	10	10	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	85	-	85	-	85	-	-	-
	5.08 x 15.24	2x6	9 222	484	8 738	8 601	137	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	4 747	333	4 414	4 209	205	-	-	-
	TOTAL		205 708	83 093	122 615	45 413	68 958	828	2 092	5 324

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Table 2. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Alberta Rail
				m^3				
Timber 7.62 cm (3"+)	Spruce	7.62 x 15.24	3x6	1 730	-	1 730	1 730	-
		7.62 x 20.32	3x8	1 730	-	1 730	1 730	-
Ties	Spruce			2 671	-	2 671	-	2 671
	Pine			2 671	-	2 671	-	2 671
		TOTAL		8 802	-	8 802	3 460	5 342

[1] Equivalent to 1000-4999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent in fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX D

Table 2A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1] (Cont.)

Board Lumber Species	2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	West. Can.[4] Truck	B.C. Rail	U.S.A. Rail
			Mfbm							
Spruce	2.54 x 10.16	1x4	3 198	1 677	1 521	190	1 177	4	42	108
	2.54 x 15.24	1x6	3 364	1 693	1 671	61	1 444	2	32	132
	2.54 x 20.32 to 30.48	1x8 to 12	1 104	615	489	85	404	-	-	-
Pine	2.54 x 10.16	1x4	805	138	667	348	290	1	14	14
	2.54 x 15.24	1x6	937	241	696	218	446	1	11	20
	2.54 x 20.32 to 30.48	1x8 to 12	608	258	350	155	195	-	-	-
Poplar	2.54 x 10.16	1x4	87	-	87	87	-	-	-	-
	2.54 x 15.24	1x6	53	-	53	53	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	18	-	18	18	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	13	-	13	-	13	-	-	-
	2.54 x 15.24	1x6	472	16	456	433	23	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	204	18	186	175	11	-	-	-
	TOTAL		10 863	4 656	6 207	1 823	4 003	8	99	274

Table 2A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	West. Can.[4] Truck	B.C. Rail	U.S.A. Rail
			Mfbm							
Spruce	5.08 x 10.16	2x4	23 465	9 820	13 645	1 633	10 534	150	612	716
	5.08 x 15.24	2x6	19 170	9 531	9 639	2 282	6 606	72	53	626
	5.08 x 20.32	2x8	15 160	6 335	8 825	3 765	4 580	26	-	454
	5.08 x 25.40 to 30.48	2x10 to 12	9 059	4 136	4 923	1 637	3 073	13	-	200
Pine	5.08 x 10.16	2x4	4 293	1 829	2 464	314	1 825	38	204	83
	5.08 x 15.24	2x6	3 922	780	3 142	1 683	1 316	40	18	85
	5.08 x 20.32	2x8	3 051	647	2 404	1 662	670	6	-	66
	5.08 x 25.40 to 30.48	2x10 to 12	1 439	270	1 169	699	438	6	-	26
Poplar	5.08 x 10.16	2x4	1 281	1 183	98	98	-	-	-	-
	5.08 x 15.24	2x6	180	157	23	23	-	-	-	-
	5.08 x 20.32	2x8	160	144	16	16	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	38	34	4	4	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	36	-	36	-	36	-	-	-
	5.08 x 15.24	2x6	3 908	205	3 703	3 645	58	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	2 012	141	1 871	1 784	87	-	-	-
TOTAL			87 174	35 212	51 962	19 245	29 223	351	887	2 256

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Table 2A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 2 360-11 796 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Rough Lumber Marketings Alberta Rail
				Mfbm				
Timber 7.62 cm (3"+)	Spruce	7.62 x 15.24	3x6	733	-	733	733	-
		7.62 x 20.32	3x8	733	-	733	733	-
Ties	Spruce			1 132	-	1 132	-	1 132
	Pine			1 132	-	1 132	-	1 132
		TOTAL		3 730	-	3 730	1 466	2 264

[1] Equivalent to 1000-4999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan, and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

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Table 3. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3, 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	West. Can.[4] Truck	East. Can. Rail	U.S.A. Rail	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A Rail
			m^3												
Spruce	2.54 x 10.16	1x4	3 965	19	3 946	45	12	12	21	2 367	-	120	-	104	1 26
	2.54 x 15.24	1x6	4 666	12	4 654	26	7	7	12	3 474	17	151	9	61	89
	2.54 x 20.32 to 30.48	1x8 to 12	3 634	9	3 625	17	5	5	9	3 195	-	57	-	42	29
Pine	2.54 x 10.16	1x4	5 373	19	5 354	45	12	12	21	3 761	-	250	-	104	1 14
	2.54 x 15.24	1x6	5 742	12	5 730	26	7	7	12	4 429	12	300	5	61	87
	2.54 x 20.32 to 30.48	1x8 to 12	3 735	9	3 726	17	5	5	9	3 143	-	163	-	42	34
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			27 115	80	27 035	176	48	48	84	20 369	29	1 041	14	414	4 81

Table 3. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	West. Can.[4] Truck	East. Can. Rail	U.S.A. Rail	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			m^3												
Spruce	5.08 x 10.16	2x4	35 367	1 565	33 802	78	38	38	76	26 099	463	2 211	229	363	4 207
	5.08 x 15.24	2x6	19 907	309	19 598	1 270	26	26	54	12 398	262	1 303	127	260	3 872
	5.08 x 20.32	2x8	8 903	139	8 764	1 354	12	12	26	4 425	87	479	42	125	2 202
	5.08 x 25.40 to 30.48	2x10 to 12	6 272	76	6 196	448	9	9	17	3 464	172	767	85	83	1 142
Pine	5.08 x 10.16	2x4	17 044	953	16 091	689	38	38	76	9 054	309	1 619	151	363	3 754
	5.08 x 15.24	2x6	14 651	186	14 465	1 392	26	26	54	7 768	175	984	85	260	3 695
	5.08 x 20.32	2x8	8 470	139	8 331	1 354	12	12	26	4 292	59	401	28	125	2 022
	5.08 x 25.40 to 30.48	2x10 to 12	5 456	76	5 380	448	9	9	17	3 030	113	562	57	83	1 052
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			116 070	3 443	112 627	7 033	170	170	346	70 530	1 640	8 326	804	1 662	21 946

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Table 3. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Rail
						m^3		
Timber 10.16 cm (4"+)	Spruce	10.16 x 10.16 to 20.32	4x4 to 8	76	-	76	-	76
Ties	Spruce			1 883	-	1 883	1 883	-
	Pine			7 074	-	7 074	7 074	-
Other Lumber	Spruce			3 332	-	3 332	-	3 332
		TOTAL		12 365	-	12 365	8 957	3 408

[1] Equivalent to 5000-9999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent in fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 3A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3. 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	West. Can.[4] Truck	East. Can. Rail	U.S.A. Rail	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			Mfbm												
Spruce	2.54 x 10.16	1x4	1 680	8	1 672	19	5	5	9	1 003	-	51	-	44	536
	2.54 x 15.24	1x6	1 977	5	1 972	11	3	3	5	1 472	7	64	4	26	377
	2.54 x 20.32 to 30.48	1x8 to 12	1 540	4	1 536	7	2	2	4	1 354	-	24	-	18	125
Pine	2.54 x 10.16	1x4	2 277	8	2 269	19	5	5	9	1 594	-	106	-	44	487
	2.54 x 15.24	1x6	2 433	5	2 428	11	3	3	5	1 877	5	127	2	26	369
	2.54 x 20.32 to 30.48	1x8 to 12	1 583	4	1 579	7	2	2	4	1 332	-	69	-	18	145
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			11 490	34	11 456	74	20	20	36	8 632	12	441	6	176	2 039

Table 3A. PRODUCTION MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3, 1972[1] (Cont.)

Dimension Lumber Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	West. Can.[4] Truck	East. Can. Rail	U.S.A. Rail	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			Mfbm												
Spruce	5.08 x 10.16	2x4	14 987	663	14 324	33	16	16	32	11 060	196	937	97	154	1 783
	5.08 x 15.24	2x6	8 436	131	8 305	538	11	11	23	5 254	111	552	54	110	1 641
	5.08 x 20.32	2x8	3 773	59	3 714	574	5	5	11	1 875	37	203	18	53	933
	5.08 x 25.40 to 30.48	2x10 to 12	2 658	32	2 626	190	4	4	7	1 468	73	325	36	35	484
Pine	5.08 x 10.16	2x4	7 223	404	6 819	292	16	16	32	3 837	131	686	64	154	1 591
	5.08 x 15.24	2x6	6 209	79	6 130	590	11	11	23	3 292	74	417	36	110	1 566
	5.08 x 20.32	2x8	3 590	59	3 531	574	5	5	11	1 819	25	170	12	53	857
	5.08 x 25.40 to 30.48	2x10 to 12	2 312	32	2 280	190	4	4	7	1 284	48	238	24	35	446
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		49 188	1 459	47 729	2 981	72	72	146	29 889	695	3 528	341	704	9 301

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Table 3A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 11 799-23 595 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Market Alberta Rail
				Mfbm				
Timber 10.16 cm (4"+)	Spruce	10.16 x 10.16 to 20.32	4x4 to 8	32	-	32	-	32
Ties	Spruce			798	-	798	798	-
	Pine			2 998	-	2 998	2 998	-
Other Lumber	Spruce			1 412	-	1 412	-	1 412
		TOTAL		5 240	-	5 240	3 796	1 444

[1] Equivalent to 5000-9999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by the English equivalent. For example a "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 4. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	Rough Lumber Marketings: West. Can.[4] Truck	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			m^3										
Spruce	2.54 x 10.16	1x4	7 635	2 303	5 332	139	328	[1] 229	28	514	130	99	2 865
	2.54 x 15.24	1x6	8 385	1 553	6 832	92	219	887	42	342	42	73	5 135
	2.54 x 20.32 to 30.48	1x8 to 12	8 371	-304	8 675	-	-	175	-	-	-	-	8 500
Pine	2.54 x 10.16	1x4	3 942	-217	4 159	264	231	868	40	361	42	71	2 282
	2.54 x 15.24	1x6	6 600	-420	7 020	245	153	647	59	241	59	104	5 512
	2.54 x 20.32 to 30.48	1x8 to 12	8 057	-618	8 675	-	-	175	-	-	-	-	8 500
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	1 269	137	1 132	116	99	361	12	153	14	21	356
	2.54 x 15.24	1x6	1 256	130	1 126	19	66	245	19	104	19	31	623
	2.54 x 20.32 to 30.48	1x8 to 12	486	-9	495	-	-	9	-	-	-	-	486
TOTAL			46 001[5]	2 555	43 446	875	1 096	[4] 596	200	1 715	306	399	34 259

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Table 4. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	Rough Lumber Marketings: West. Can.[4] Truck	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			m^3										
Spruce	5.08 x 10.16	2x4	43 133	12 358	30 775	66	453	1 553	314	665	2 331	1 560	23 833
	5.08 x 15.24	2x6	25 114	6 385	18 729	606	340	1 166	40	500	1 553	826	13 698
	5.08 x 20.32	2x8	16 314	3 955	12 359	444	227	776	19	333	1 029	538	8 993
	5.08 x 25.40 to 30.48	2x10 to 12	7 377	1 900	5 477	281	113	389	19	168	422	236	3 849
Pine	5.08 x 10.16	2x4	13 040	-611	13 651	45	316	1 088	448	465	503	788	9 998
	5.08 x 15.24	2x6	3 692	455	3 237	33	238	814	57	349	97	118	1 531
	5.08 x 20.32	2x8	1 900	-33	1 933	31	158	543	28	234	54	61	824
	5.08 x 25.40 to 30.48	2x10 to 12	1 128	-186	1 314	40	80	271	28	116	38	54	687
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	6 969	2 256	4 713	9	137	465	135	201	189	262	3 315
	5.08 x 15.24	2x6	1 421	-33	1 454	35	101	349	17	149	57	50	696
	5.08 x 20.32 to 30.48	2x8 to 12	1 396	-31	1 427	35	101	349	17	149	54	47	675
	TOTAL		121 484[5]	26 415	95 069	1 625	2 264	7 763	1 122	3 329	6 327	4 540	68 099

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Table 4. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Rough Lumber Marketings West. Can.[4] Truck
				m^3				
Timber 10.16 cm (4"+)	Spruce	10.16 x 10.16 to 15.24	4x4 to 6	236	-	236	165	71
	Pine	10.16 x 10.16 to 15.24	4x4 to 6	166	-	166	116	50
	Fir	10.16 x 10.16 to 15.24	4x4 to 6	71	-	71	50	21
Ties	Spruce			-	-	-	-	-
	Pine			-	-	-	-	-
Laths	Spruce			-	-	-	-	-
	Pine			-	-	-	-	-
	Poplar			-	-	-	-	-
		TOTAL		473[5]	-	473	331	142

[1] Equivalent to 10 000-14 999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent in fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finish product. This column indicates rough lumber being shipped out (in), if the number for the respective products is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

[5] 14 518 m^3 of this total comes from inventory of rough sawn lumber from previous years. No breakdown as to lumber type or species was given, hence it was impossible to calculate actual 1972 amounts in respective categories.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 4A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Markets: Alberta Truck	Rough Lumber Markets: West. Can.[4] Truck	Planed Lumber Markets: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			Mfbm										
Spruce	2.54 x 10.16	1x4	3 236	976	2 260	59	139	521	12	218	55	42	1 214
	2.54 x 15.24	1x6	3 554	658	2 896	39	93	376	18	145	18	31	2 176
	2.54 x 20.32 to 30.48	1x8 to 12	3 547	-129	3 676	-	-	74	-	-	-	-	3 602
Pine	2.54 x 10.16	1x4	1 671	-92	1 763	112	98	368	17	153	18	30	967
	2.54 x 15.24	1x6	2 802	-178	2 980	109	65	274	25	102	25	44	2 336
	2.54 x 20.32 to 30.48	1x8 to 12	3 414	-262	3 676	-	-	74	-	-	-	-	3 602
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	538	58	480	49	42	153	5	65	6	9	151
	2.54 x 15.24	1x6	532	55	477	8	28	104	8	44	8	13	264
	2.54 x 20.32 to 30.48	1x8 to 12	206	-4	210	-	-	4	-	-	-	-	206
TOTAL			19 500[5]	1 082	18 418	376	465	1 948	85	727	130	169	14 518

Table 4A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	West. Can.[4] Truck	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can.[4] Rail	East. Can. Rail	U.S.A. Rail
			Mfbm										
Spruce	5.08 x 10.16	2x4	18 279	5 237	13 042	28	192	658	133	282	988	661	10 100
	5.08 x 15.24	2x6	10 643	2 706	7 937	257	144	494	17	212	658	350	5 805
	5.08 x 20.32	2x8	6 913	1 676	5 237	188	96	329	8	141	436	228	3 811
	5.08 x 25.40 to 30.48	2x10 to 12	3 126	805	2 321	119	48	165	8	71	179	100	1 631
Pine	5.08 x 10.16	2x4	5 536	-259	5 795	19	134	461	190	197	213	344	4 237
	5.08 x 15.24	2x6	1 565	193	1 372	14	101	345	24	148	41	50	649
	5.08 x 20.32	2x8	805	-14	819	13	67	230	12	99	23	26	349
	5.08 x 25.40 to 30.48	2x10 to 12	478	-79	557	17	34	115	12	49	16	23	291
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32	2x8	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 25.40 to 30.48	2x10 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	2 953	956	1 997	4	58	197	57	85	80	111	1 405
	5.08 x 15.24	2x6	602	-14	616	15	43	148	7	63	24	21	295
	5.08 x 20.32 to 30.48	2x8 to 12	592	-13	605	15	43	148	7	63	23	20	286
TOTAL			51 492[5]	11 194	40 298	689	960	3 290	475	1 410	2 681	1 934	28 859

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Table 4A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 23 597-35 394 m^3, 1972[1]

Other Sawn Products	Species	Size Groups[2] cm	Size Groups[2] inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings: Alberta Truck	Rough Lumber Marketings: West. Can.[4] Truck
				Mfbm				
Timber 10.16 cm (4"+)	Spruce	10.16 x 10.16 to 15.24	4x4 to 6	100	-	100	70	30
	Pine	10.16 x 10.16 to 15.24	4x4 to 6	70	-	70	49	21
	Fir	10.16 x 10.16 to 15.24	4x4 to 6	30	-	30	21	9
Ties	Spruce			-	-	-	-	-
	Pine			-	-	-	-	-
Laths	Spruce			-	-	-	-	-
	Pine			-	-	-	-	-
	Poplar			-	-	-	-	-
		TOTAL		200[5]	-	200	140	60

[1] Equivalent to 10 000-14 999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by the English equivalent. For example a "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Sasktchewan and British Columbia.

[5] 6000 Mfbm of this total comes from inventory of rough sawn lumber from previous years. No breakdown of lumber type or species was given, hence it was impossible to calculate actual 1972 amounts in respective categories.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 5. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1] (Cont.)

Board Lumber Species	2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			m^3											
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	7 992	276	7 716	-	1 810	323	717	120	-	319	382	4 045
	2.54 x 15.24	1x6	1 944	413	1 531	-	340	31	149	31	-	64	76	840
	2.54 x 20.32 to 30.48	1x8 to 12	933	-	933	-	9	219	92	9	-	42	52	510
Pine	2.54 x 5.08 to 10.16	1x2 to 4	478	31	447	-	71	109	26	40	-	-	-	201
	2.54 x 15.24	1x6	129	47	82	-	7	9	7	9	-	-	-	50
	2.54 x 20.32 to 30.48	1x8 to 12	28	-	28	-	2	2	2	5	-	-	-	17
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			11 504	767	10 737	-	2 239	693	993	214	-	425	510	5 663

Table 5. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			m^3											
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	113 589	76 064	37 525	-	6 275	453	2 692	453	-	1 194	1 435	25 023
	5.08 x 15.24	2x6	20 346	14 958	5 388	-	1 244	73	526	73	-	241	288	2 943
	5.08 x 20.32 to 30.48	2x8 to 12	20 732	16 893	3 839	-	850	78	370	78	-	158	191	2 114
Pine	5.08 x 5.08 to 10.16	2x2 to 4	9 907	8 646	1 261	-	101	151	101	151	-	-	-	757
	5.08 x 15.24	2x6	930	728	202	-	17	24	17	24	-	-	-	120
	5.08 x 20.32 to 30.48	2x8 to 12	1 591	1 371	220	-	19	26	17	26	-	-	-	132
Poplar	5.08 x 10.16	2x4	29 556	-	29 556	-	-	-	-	-	-	-	-	29 556
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			196 651	118 660	77 991	-	8 506	805	3 723	805	-	1 593	1 914	60 645

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Table 5. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1]

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		m^3						
Timber 7.62 cm (3"+)	Spruce	2 124	-	2 124	-	2 124	-	-
	Pine	-	-	-	-	-	-	-
	TOTAL	2 124	-	2 124	-	2 124	-	-

[1] Equivalent to 15 000-19 999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 5A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm											
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	3 387	117	3 270	-	767	137	304	51	-	135	162	1 714
	2.54 x 15.24	1x6	823	175	648	-	144	13	63	13	-	27	32	356
	2.54 x 20.32 to 30.48	1x8 to 12	396	-	396	-	4	93	39	4	-	18	22	216
Pine	2.54 x 5.08 to 10.16	1x2 to 4	202	13	189	-	30	46	11	17	-	-	-	85
	2.54 x 15.24	1x6	55	20	35	-	3	4	3	4	-	-	-	21
	2.54 x 20.32 to 30.48	1x8 to 12	12	-	12	-	1	1	1	2	-	-	-	7
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL			4 875	325	4 550	-	949	294	421	91	-	180	216	2 399

Table 5A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1] (Cont.)

Dimension Lumber 5.08 cm (2") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm											
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	48 136	32 234	15 902	-	2 659	192	1 141	192	-	506	608	10 604
	5.08 x 15.24	2x6	8 622	6 339	2 283	-	527	31	223	31	-	102	122	1 247
	5.08 x 20.32 to 30.48	2x8 to 12	8 786	7 159	1 627	-	360	33	157	33	-	67	81	896
Pine	5.08 x 5.08 to 10.16	2x2 to 4	4 199	3 664	535	-	43	64	43	64	-	-	-	321
	5.08 x 15.24	2x6	393	308	85	-	7	10	7	10	-	-	-	51
	5.08 x 20.32 to 30.48	2x8 to 12	674	581	93	-	8	11	7	11	-	-	-	56
Poplar	5.08 x 10.16	2x4	12 525	-	12 525	-	-	-	-	-	-	-	-	12 525
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		83 335	50 285	33 050	-	3 604	341	1 578	341	-	675	811	25 700

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Table 5A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS 35 396-47 192 m^3, 1972[1]

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		Mfbm						
Timber 7.62 cm (3"+)	Spruce	900	-	900	-	900	-	-
	Pine	-	-	-	-	-	-	-
	TOTAL	900	-	900	-	900	-	-

[1] Equivalent to 15 000-19 999 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber being transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 6. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1] (Cont.)

Board Lumber 2.54 cm (1") Species	Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
						m^3								
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	23 944	-1 588	25 332	-	569	1 253	422	986	-	-	248	22 054
	2.54 x 15.24	1x6	6 317	-	6 317	-	101	385	137	701	-	-	248	4 745
	2.54 x 20.32 to 30.48	1x8 to 12	2 835	-5	2 840	-	21	21	21	21	-	-	-	2 756
Pine	2.54 x 5.08 to 10.16	1x2 to 4	9 317	-109	9 425	-	333	234	234	234	-	-	-	8 391
	2.54 x 15.24	1x6	286	-158	444	-	45	45	45	45	-	-	-	264
	2.54 x 20.32 to 30.48	1x8 to 12	143	-	143	-	14	14	14	14	-	-	-	87
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		42 842	-1 860	44 702	-	1 083	1 952	873	2 001	-	-	496	38 297

Table 6. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1] (Cont.)

Species	Dimension Lumber 5.08 cm (2") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			m^3											
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	397 034	-16 955	413 989	-	6 522	12 478	6 116	12 032	274	5 930	3 823	366 814
	5.08 x 15.24	2x6	47 219	-26 939	74 158	-	1 590	691	2 346	1 871	42	394	611	66 613
	5.08 x 20.32 to 30.48	2x8 to 12	44 075	-33 537	77 612	-	1 619	748	2 386	2 027	47	425	663	69 697
Pine	5.08 x 5.08 to 10.16	2x2 to 4	140 313	-8 962	149 275	-	3 830	3 540	1 454	3 188	31	2 143	426	134 663
	5.08 x 15.24	2x6	235	-2 723	2 958	-	203	243	219	373	5	42	68	1 805
	5.08 x 20.32 to 30.48	2x8 to 12	236	-2 971	3 207	-	222	262	236	406	5	47	73	1 956
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		629 112	-92 087	721 199	-	13 986	17 962	12 757	19 897	404	8 981	5 664	641 548

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Table 6. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1]

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		m^3						
Timber 7.62 cm (3"+)	Spruce	5	-	5	-	5	-	-
	Pine	-	-	-	-	-	-	-
	TOTAL	5	-	5	-	5	-	-

[1] Equivalent to > 20 000 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE. N.F.R.C. Wood Industry Survey, 1972

Table 6A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1] (Cont.)

Species	Board Lumber 2.54 cm (1") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm											
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	10 147	-673	10 820	-	241	531	179	418	-	-	105	9 346
	2.54 x 15.24	1x6	2 677	-	2 677	-	43	163	58	297	-	-	105	2 011
	2.54 x 20.32 to 30.48	1x8 to 12	1 202	-2	1 204	-	9	9	9	9	-	-	-	1 168
Pine	2.54 x 5.08 to 10.16	1x2 to 4	3 948	-46	3 994	-	141	99	99	99	-	-	-	3 556
	2.54 x 15.24	1x6	121	-67	188	-	19	19	19	19	-	-	-	112
	2.54 x 20.32 to 30.48	1x8 to 12	61	-	61	-	6	6	6	6	-	-	-	37
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		18 156	-788	18 944	-	459	827	370	848	-	-	210	16 230

Table 6A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1] (Cont.)

Species	Dimension Lumber 5.08 cm (2") Size Groups[2] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Lumber Marketings Alberta Truck	Planed Lumber Marketings Alberta Truck	Alberta Rail	West. Can.[4] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm											
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	168 254	-7 185	175 439	-	2 764	5 288	2 592	5 099	116	2 513	1 620	155 447
	5.08 x 15.24	2x6	20 011	-11 416	31 427	-	674	293	994	793	18	167	259	28 229
	5.08 x 20.32 to 30.48	2x8 to 12	18 678	-14 212	32 890	-	686	317	1 011	859	20	180	281	29 536
Pine	5.08 x 5.08 to 10.16	2x2 to 4	59 460	-3 798	63 258	-	1 623	1 500	616	1 351	13	908	180	57 067
	5.08 x 15.24	2x6	100	-1 154	1 254	-	86	103	93	158	2	18	29	765
	5.08 x 20.32 to 30.48	2x8 to 12	100	-1 259	1 359	-	94	111	100	172	2	20	31	829
Poplar	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 15.24	2x6	-	-	-	-	-	-	-	-	-	-	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL		266 603	-39 024	305 627	-	5 927	7 612	5 406	8 432	171	3 806	2 400	271 873

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Table 6A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA SAWMILLS > 47 195 m^3, 1972[1]

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[3]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		Mfbm						
Timber 7.62 cm (3"+)	Spruce	2	-	2	-	2	-	-
	Pine	-	-	-	-	-	-	-
	TOTAL	2	-	2	-	2	-	-

[1] Equivalent to > 20 000 Mfbm.

[2] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[3] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[4] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

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Table 7. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972 (Cont.)

Species	Board Lumber Size Groups[1] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[3] Truck	West. Can.[3] Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
						m^3							
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	-	-5 277	5 277	1 926	-	-	106	-	795	267	2 183
	2.54 x 15.24	1x6	-	-6 268	6 268	2 159	-	-	137	-	977	267	2 728
	2.54 x 20.32 to 30.48	1x8 to 12	-	-1 486	1 486	691	-	-	45	-	205	-	545
Pine	2.54 x 5.08 to 10.16	1x2 to 4	-	-49	49	9	-	-	-	-	9	31	-
	2.54 x 15.24	1x6	-	-49	49	9	-	-	-	-	9	31	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-137	137	21	-	-	-	-	24	-	92
	2.54 x 15.24	1x6	-	-167	167	26	-	-	-	-	28	-	113
	2.54 x 20.32 to 30.48	1x8 to 12	-	-31	31	2	-	-	-	-	5	-	24
	TOTAL		-	-13 464	13 464	4 843	-	-	288	-	2 052	596	5 685

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Table 7. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972 (Cont.)

Species	Dimension Lumber 5.08 cm (2") Size Groups[1] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[3] Truck	West. Can.[3] Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
						m^3							
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	-	-98 788	98 788	23 715	-	73	392	-	16 792	20 978	36 838
	5.08 x 15.24	2x6	-	-17 780	17 780	4 646	-	217	85	-	2 841	2 624	7 367
	5.08 x 20.32 to 30.48	2x8 to 12	-	-14 570	14 570	4 325	-	399	83	-	2 278	2 624	4 911
Pine	5.08 x 5.08 to 10.16	2x2 to 4	-	-4 341	4 341	1 234	-	-	-	-	776	2 331	-
	5.08 x 15.24	2x6	-	-487	487	97	-	-	-	-	97	293	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-560	560	170	-	-	-	-	97	293	-
Poplar	5.08 x 10.16	2x4	-	-3 145	3 145	2 383	-	-	304	-	458	-	-
	5.08 x 15.24	2x6	-	-656	656	491	-	-	66	-	99	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-656	656	491	-	-	66	-	99	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-2 256	2 256	337	-	-	-	-	385	1 534	-
	5.08 x 15.24	2x6	-	-451	451	68	-	-	-	-	76	307	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-302	302	45	-	-	-	-	52	205	-
	TOTAL		-	-143 992	143 992	38 002	-	689	996	-	24 000	31 189	49 116

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Table 7. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		m^3						
Timber 7.62 cm (3"+)	Spruce	-	-1 526	1 526	-	-	1 526	-
	Pine	-	-	-	-	-	-	-
	TOTAL	-	-1 526	1 526	-	-	1 526	-

[1] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 cm x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent in fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equivalent to 1/12 of a cubic foot.

[2] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[3] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

Table 7A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972 (Cont.)

Board Lumber Species	2.54 cm (1") Size Groups[1] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[3] Truck	West. Can. Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm										
Spruce	2.54 x 5.08 to 10.16	1x2 to 4	-	-2 236	2 236	816	-	-	45	-	337	113	925
	2.54 x 15.24	1x6	-	-2 656	2 656	915	-	-	58	-	414	113	1 156
	2.54 x 20.32 to 30.48	1x8 to 12	-	-630	630	293	-	-	19	-	87	-	231
Pine	2.54 x 5.08 to 10.16	1x2 to 4	-	-21	21	4	-	-	-	-	4	13	-
	2.54 x 15.24	1x6	-	-21	21	4	-	-	-	-	4	13	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Poplar	2.54 x 10.16	1x4	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 15.24	1x6	-	-	-	-	-	-	-	-	-	-	-
	2.54 x 20.32 to 30.48	1x8 to 12	-	-	-	-	-	-	-	-	-	-	-
Balsam Fir	2.54 x 10.16	1x4	-	-58	58	9	-	-	-	-	10	-	39
	2.54 x 15.24	1x6	-	-71	71	11	-	-	-	-	12	-	48
	2.54 x 20.32 to 30.48	1x8 to 12	-	-14	14	2	-	-	-	-	2	-	10
TOTAL			-	-5 707	5 707	2 054	-	-	122	-	870	252	2 409

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Table 7A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972 (Cont.)

Species	Dimension Lumber 5.08 cm (2") Size Groups[1] cm	inches	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Planed Lumber Marketings: Alberta Truck	Alberta Rail	West. Can.[3] Truck	West. Can.[3] Rail	East. Can. Truck	East. Can. Rail	U.S.A. Truck	U.S.A. Rail
			Mfbm										
Spruce	5.08 x 5.08 to 10.16	2x2 to 4	-	-41 864	41 864	10 050	-	31	166	-	7 116	8 890	15 611
	5.08 x 15.24	2x6	-	-7 535	7 535	1 969	-	92	36	-	1 204	1 112	3 122
	5.08 x 20.32 to 30.48	2x8 to 12	-	-6 174	6 174	1 833	-	169	35	-	944	1 112	2 081
Pine	5.08 x 5.08 to 10.16	2x2 to 4	-	-1 840	1 840	523	-	-	-	-	329	988	-
	5.08 x 15.24	2x6	-	-206	206	41	-	-	-	-	41	124	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-237	237	72	-	-	-	-	41	124	-
Poplar	5.08 x 10.16	2x4	-	-1 333	1 333	1 010	-	-	129	-	194	-	-
	5.08 x 15.24	2x6	-	-278	278	208	-	-	28	-	42	-	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-278	278	208	-	-	28	-	42	-	-
Balsam Fir	5.08 x 10.16	2x4	-	-956	956	143	-	-	-	-	163	650	-
	5.08 x 15.24	2x6	-	-191	191	29	-	-	-	-	32	130	-
	5.08 x 20.32 to 30.48	2x8 to 12	-	-128	128	19	-	-	-	-	22	87	-
	TOTAL		-	-61 020	61 020	16 105	-	292	422	-	10 170	13 217	20 814

APPENDIX D

Table 7A. PRODUCTION, MARKETS AND MODE OF TRANSPORTATION FOR ALBERTA INDEPENDENT PLANING MILLS, 1972

Other Sawn Products	Species	Total Rough Lumber Sawn	Net Intra-Industry Transfers[2]	Total Final Production	Rough Timber Marketings			
					Alberta		Rest of Canada	
					Truck	Rail	Truck	Rail
		Mfbm						
Timber 7.62 cm (3"+)	Spruce	-	-647	647	-	-	647	-
	Pine	-	-	-	-	-	-	-
	TOTAL	-	-647	647	-	-	647	-

[1] In line with Canadian Forestry Service Policy on conversion to metric units under the International Metric System (SI) all data are presented in metric units followed by English equivalent. For example a "2x4" stud is 5.08 x 10.16 cm. Nominal lumber sizes are used throughout instead of actual lumber dimensions. Although there is no direct equivalent to fbm in the International Metric System we have used 1 m^3 = 423.775 9 fbm on the assumption that 1 board foot is equal to 1/12 of a cubic foot.

[2] Net Intra-Industry Transfers refers to rough lumber transmitted from one class to another operating in the Alberta industry before being finally marketed as a finished product. This column indicates rough lumber being shipped out (in), if the number for the respective product is positive (negative).

[3] Includes Manitoba, Saskatchewan and British Columbia.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 1. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S PAPER AND ALLIED INDUSTRIES, 1972

Months	Logging[1]		Logging[2]		Mill		
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	Total
	Number Employed[3]						
January	174	77	77	27	611	224	1 190
February	179	76	77	27	612	222	1 193
March	200	80	77	27	612	222	1 218
April	200	83	77	27	611	222	1 220
May	210	81	77	27	613	225	1 233
June	210	84	77	27	624	210	1 232
July	207	84	77	27	627	210	1 232
August	219	87	77	27	638	210	1 258
September	296	102	77	27	630	207	1 339
October	309	100	77	27	622	208	1 343
November	320	104	77	27	622	209	1 359
December	319	106	77	27	613	209	1 351
Total Man-Months	2 843	1 064	924	324	7 435	2 578	15 168
Total Man-Years	237	89	77	27	620	215	1 265
Total Man-Hours	492 692	184 391	160 129	56 149	1 288 486	446 767	2 628 614

[1] Logging employment provided by the firm's own logging division. Includes employment by Procter and Gamble Cellulose Ltd.

[2] Logging employment generated by independent contract loggers and other wood suppliers.

[3] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 2. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S WOOD PRESERVATION INDUSTRY, 1972

Months	Logging[1]		Logging[2]		Plant		
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	Total
	Number Employed[3]						
January	3	-	6	10	95	22	136
February	3	-	6	10	117	27	163
March	3	-	6	10	132	27	178
April	-	-	-	2	139	27	168
May	-	-	-	2	142	27	171
June	-	-	-	2	156	27	185
July	-	-	-	2	159	27	188
August	3	-	-	2	154	28	187
September	3	-	-	2	140	27	172
October	3	-	6	10	142	26	187
November	3	-	6	10	132	26	177
December	3	-	6	10	133	26	178
Total Man-Months	24	-	36	72	1 641	317	2 090
Total Man-Years	2	-	3	6	137	26	174
Total Man-Hours	4 159	-	6 239	12 478	284 385	54 936	362 197

[1] Wood treating industry personnel employed in logging activities.

[2] Employment provided by independent contract loggers and other wood suppliers.

[3] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 3. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S PLYWOOD INDUSTRY, 1972

Months	Logging[1]		Logging[2]		Mill		Total
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	
	Number Employed[3]						
January	-	4	50	5	361	57	477
February	-	4	50	5	364	58	481
March	-	4	50	5	364	59	482
April	-	4	5	1	366	58	434
May	-	4	5	1	373	58	441
June	-	4	5	1	352	59	421
July	-	4	5	1	349	58	417
August	-	4	5	1	352	58	420
September	-	4	5	1	356	59	425
October	-	4	5	1	359	60	429
November	-	4	50	5	350	59	468
December	-	4	50	5	349	60	468
Total Man-Months	-	48	285	32	4 295	703	5 363
Total Man-Years	-	4	24	3	358	58	447
Total Man-Hours	-	8 318	49 390	5 546	744 324	121 830	929 408

[1] Plywood industry personnel employed in logging activity.

[2] Employment generated by independent contract loggers and other wood suppliers.

[3] Full employment equivalent - defined as a person working 8 hours/day,5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 4. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 6 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill		
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	Total
	Number Employed[1]						
January	60	17	563	45	728	65	1 478
February	67	17	558	45	720	64	1 471
March	16	17	527	38	685	62	1 345
April	11	17	91	5	617	61	802
May	19	17	-	1	531	61	629
June	44	19	18	3	645	70	799
July	78	19	64	7	627	72	867
August	52	19	78	8	695	72	924
September	43	21	54	6	652	70	846
October	56	22	88	6	618	70	860
November	116	25	527	45	783	78	1 574
December	114	25	570	45	765	78	1 597
Total Man-Months	676	235	3 138	254	8 066	823	13 192
Total Man-Years	56	20	262	21	672	69	1 100
Total Man-Hours	117 151	40 726	543 815	44 018	1 397 838	142 626	2 286 174

[1] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 5. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 5 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill		
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	Total
	Number Employed[1]						
January	12	-	179	11	151	30	383
February	12	-	179	11	156	30	388
March	12	-	179	11	156	30	388
April	-	-	91	3	303	30	427
May	-	-	39	-	278	30	347
June	-	-	39	-	277	31	347
July	-	-	39	-	255	31	325
August	-	-	39	-	259	28	326
September	-	-	39	-	235	29	303
October	-	-	39	3	269	28	339
November	-	-	179	11	287	31	508
December	12	-	179	11	298	31	531
Total Man-Months	48	-	1 220	61	2 924	359	4 612
Total Man-Years	4	-	101	5	244	30	384
Total Man-Hours	8 318	-	211 426	10 571	506 729	62 215	799 259

[1] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 6. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 4 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill		
	Hourly	Salaried	Hourly	Salaried[1]	Hourly	Salaried	Total
	Number Employed[2]						
January	37	6	182	-	239	32	496
February	39	7	185	-	238	32	501
March	39	8	185	-	237	34	503
April	32	9	44	-	151	33	269
May	23	6	12	-	175	34	250
June	25	6	2	-	214	36	283
July	26	6	11	-	223	36	302
August	26	6	16	-	195	34	277
September	25	7	23	-	141	32	228
October	28	7	65	-	117	33	250
November	35	7	186	-	179	34	441
December	38	7	193	-	222	35	495
Total Man-Months	373	82	1 104	-	2 331	405	4 295
Total Man-Years	31	7	92	-	194	34	358
Total Man-Hours	64 641	14 211	191 323	-	403 962	70 187	744 324

[1] Data not available.

[2] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 7. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 3 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill		
	Hourly	Salaried	Hourly	Salaried[1]	Hourly	Salaried	Total
	Number Employed[2]						
January	107	9	112	-	246	46	520
February	107	9	116	-	266	54	552
March	112	9	113	-	268	50	552
April	20	6	10	-	231	40	307
May	9	5	10	-	221	39	284
June	14	5	9	-	239	42	309
July	20	5	9	-	236	42	312
August	22	5	10	-	225	42	304
September	28	6	10	-	208	42	294
October	34	6	10	-	164	41	255
November	42	7	116	-	206	44	415
December	53	8	114	-	239	53	467
Total Man-Months	568	80	639	-	2 749	535	4 571
Total Man-Years	47	7	53	-	229	45	381
Total Man-Hours	98 434	13 864	110 739	-	476 402	92 715	792 154

[1] Data not available.

[2] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 8. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 2 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill			
	Hourly	Salaried	Hourly	Salaried[1]	Hourly	Salaried	Other[2]	Total
	Number Employed[3]							
January	178	3	162	-	477	63	38	921
February	178	5	177	-	477	63	38	938
March	165	6	177	-	461	60	38	907
April	24	1	58	-	171	26	1	281
May	46	2	58	-	207	26	1	340
June	53	2	63	-	249	28	1	396
July	61	4	25	-	255	32	15	392
August	43	4	25	-	225	30	15	342
September	66	5	22	-	248	35	15	391
October	66	5	22	-	248	35	15	391
November	107	4	61	-	244	36	15	467
December	160	5	134	-	427	58	53	837
Total Man-Months	1 147	46	984	-	3 689	492	245	6 603
Total Man-Years	96	4	82	-	307	41	20	550
Total Man-Hours	198 775	7 971	170 527	-	639 304	85 264	42 459	1 144 300

[1] Data not available.

[2] Unpaid labour equivalent for exchange of work in custom sawing.

[3] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 9. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S CLASS 1 SAWMILLS, 1972

Months	Logging by Sawmill		Logging by Contractors		Mill			
	Hourly	Salaried	Hourly	Salaried[1]	Hourly	Salaried	Other[2]	Total
	Number Employed[3]							
January	46	23	7	-	42	30	7	155
February	46	27	7	-	42	33	7	162
March	36	16	7	-	30	32	7	128
April	17	9	0.5	-	21	18	1	66.50
May	7	3	2	-	4	11	2	29
June	7	2	3	-	3	7	3	25
July	5	6	2	-	10	6	1	30
August	4	2	2	-	5	4	1	18
September	6	3	2	-	8	6	1	26
October	4	4	1	-	5	6	0.5	20.50
November	4	4	0.5	-	5	15	0.5	29
December	9	6	7	-	22	21	7	72
Total Man-Months	191	105	41	-	197	189	38	761
Total Man-Years	16	9	3	-	16	16	3	63
Total Man-Hours	33 100	18 197	7 105	-	34 140	32 754	6 585	131 881

[1] Data not available.

[2] Unpaid labour equivalent for exchange of work in custom sawing.

[3] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX E

Table 10. MONTHLY AND ANNUAL EMPLOYMENT BY ACTIVITY AND JOB LEVEL IN ALBERTA'S INDEPENDENT PLANING MILL INDUSTRY, 1972

Months	Logging[1]		Logging[2]		Mill		
	Hourly	Salaried	Hourly	Salaried	Hourly	Salaried	Total
	Number Employed						
January	-	-	-	-	102	16	118
February	-	-	-	-	88	16	104
March	-	-	-	-	99	16	115
April	-	-	-	-	99	16	115
May	-	-	-	-	124	15	139
June	-	-	-	-	99	16	115
July	-	-	-	-	118	15	133
August	-	-	-	-	108	15	123
September	-	-	-	-	87	14	101
October	-	-	-	-	96	14	110
November	-	-	-	-	49	14	63
December	-	-	-	-	72	14	86
Total Man-Months	-	-	-	-	1 141	181	1 322
Total Man-Years	-	-	-	-	95	15	110
Total Man-Hours	-	-	-	-	197 735	31 367	229 102

[1] No logging activity was associated with the planing mill operations.

[2] Full employment equivalent - defined as a person working 8 hours/day, 5 days/week, 52 weeks/year (2 080 hours/year; 173.3 hours/month).

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX F

Table 1. SELLING VALUE OF SHIPMENTS, COSTS AND VALUE ADDED FOR THE ALBERTA FOREST INDUSTRY[1], 1972

	Paper Allied Industries	Wood Preservation Industry	Sawmills and Planing Mills	Independent Planing Mills	Veneer and Plywood Mills	Total
Number of Firms	4	7	213	9	3	236
Gross Sales	47 862 927	11 086 830	78 681 440	7 712 002	20 537 822	165 881 021
Net Sales (F.O.B. Mill)	39 849 089	10 159 677	73 970 898	7 222 582	18 304 541	149 506 787
Fuel & Electricity	1 768 677	150 454	1 732 908	133 606	296 699	4 082 344
Materials & Supplies (includes maint. & repairs)	5 659 502	1 112 192	4 127 188	260 273	1 654 099	12 813 254
Wood Inputs (roundwood & semi-processed)	9 328 235	4 118 615	33 372 456	4 460 141	9 453 109	60 732 556
Value Added by Manufacturing Activity	23 092 675	4 778 416	34 738 346	2 368 562	6 900 634	71 878 633
Depreciation	3 158 256	236 762	3 220 200	889 354	524 410	8 028 982
Mill Wages Paid	5 416 487	976 735	12 139 037	633 552	2 838 485	22 004 296
Mill Salaries Paid	2 302 152	221 118	3 214 026	143 373	539 976	6 420 645
Company Paid Employee Benefits	1 249 721	177 562	1 161 618	24 838	510 491	3 124 230
Local Municipal Taxes	450 484	43 919	135 696	13 997	84 154	728 250
Insurances	196 349	14 390	439 697	39 211	87 075	776 722
Leasing and Rentals	66 086	9 236	471 332	32 858	3 929	583 441
Other Expenses	793 906	461 278	1 883 139	196 765	875 722	4 210 810
Unallocated Residuals and Profits	9 459 234	2 637 416	12 073 601	394 614	1 436 392	26 001 257

[1] Does not include the logging industry.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX F

Table 2. SELLING VALUE OF SHIPMENTS, COSTS AND VALUE ADDED FOR ALBERTA SAWMILLS AND PLANING MILLS[1], 1972

	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Total
Number of Firms	130	55	9	5	6	8	213
Gross Sales	963 420	8 980 643	7 187 660	7 864 497	8 621 115	45 064 105	78 681 440
Net Sales (F.O.B. Mill)	961 302	8 890 722	7 017 068	7 525 879	8 349 798	41 226 129	73 970 898
Fuel & Electricity	39 440	294 974	181 832	261 620	256 126	698 916	1 732 908
Material & Supplies (includes maint. & repairs)	80 080	903 883	396 801	356 034	387 846	2 002 544	4 127 188
Wood Inputs (roundwood & semi-processed)	428 386	3 562 249	3 594 838	3 199 627	3 969 210	18 618 146	33 372 456
Value Added by Manufacturing Activity	413 396	4 129 616	2 843 597	3 708 598	3 736 616	19 906 523	34 738 346
Depreciation	60 948	595 392	588 967	282 660	599 784	1 092 449	3 220 200
Mill Wages Paid	101 898	1 963 152	1 495 667	1 366 188	1 792 401	5 419 731	12 139 037
Mill Salaries Paid	239 762	1 284 390	355 223	253 707	328 912	752 032	3 214 026
Company Paid Employee Benefits	-	20 418	105 144	194 262	111 874	729 920	1 161 618
Local Municipal Taxes	142	1 027	19 557	22 431	33 506	59 033	135 696
Insurances	9 846	67 652	91 280	65 307	46 920	158 692	439 697
Leasing and Rentals	200	111 368	14 792	89 856	8 375	246 741	471 332
Other Expenses	600	86 217	158 710	302 975	121 341	1 213 296	1 883 139
Unallocated Residuals and Profits	0	0	14 257	1 131 212	693 503	10 234 629	12 073 601

[1] Does not include the logging industry.

SOURCE: N.F.R.C. Wood Industry Survey, 1972

APPENDIX G

STANDARD INDUSTRIAL CLASSIFICATION LISTINGS FOR FOREST INDUSTRIES, 1970

	Industry Number (SIC No.)	
DIVISION 2 - FORESTRY		
Major Group 1 - Logging		
*Logging	031	
Major Group 2 - Forestry Services		
Forestry Services	039	
DIVISION 5 - MANUFACTURING INDUSTRIES		
Major Group 8 - Wood Industries		
Sawmills, Planing Mills and Shingle Mills	251	
a) Shingle Mills		2511
*b) Sawmills and Planing Mills (except Shingle Mills)		2513
*Veneer and Plywood Mills	252	
Sash, Door and Other Millwork Plants	254	
a) Sash, Door and Other Millwork Plants n.e.s.		2541
b) Hardwood Flooring Plants		2542
c) Manufacturers of Pre-fabricated Buildings (Wood Frame Construction)		2543
Wooden Box Factories	256	
Coffin and Casket Industry	258	
Miscellaneous Wood Industries	259	
*a) Wood Preservation Industry		2591
b) Wood Handles and Turning Industry		2592
c) Manufacturers of Particle Board		2593
d) Miscellaneous Wood Industries, n.e.s.		2599
Major Group 10 - Paper and Allied Industries		
*Pulp and Paper Mills	271	
*Asphalt Roofing Manufacturers	272	
Paper Box and Bag Manufacturers	273	
a) Folding Carton and Set-up Box Manufacturers		2731
b) Corrugated Box Manufacturers		2732
c) Paper and Plastic Bag Manufacturers		2733
Miscellaneous Paper Converters	274	

* Those industries included in the N.F.R.C. Alberta Wood Industry Survey, 1972.

SOURCE: Statistics Canada. Standard Industrial Classification Manual - Revised 1970. Information Canada. Ottawa. Cat. No. 12 - 501. Occasional.