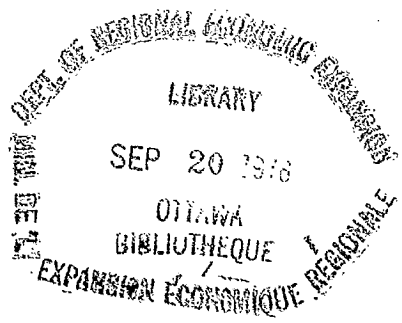
POTENTIAL FOR DEVELOPMENT OF A SECONDARY WOOD PRODUCTS INDUSTRY IN NORTHERN ONTARIO

(Bryan P. Davis)

July 1973



POTENTIAL FOR DEVELOPMENT OF A SECONDARY WOOD PRODUCTS INDUSTRY IN NORTHERN ONTARIO

Prepared by

Bryan P. Davies
School of Public Administration
Queen's University
Kingston, Ontario

for

Planning Division
Department of Regional Economic Expansion
Government of Canada
Ottawa, Canada

July, 1973

PREFACE

Basically, this study was undertaken to collate the rather sparse and widely scattered information available on the forest resources and wood-related industries of northern Ontario. The main objective was to present this data in a more convenient and coherent format, complemented by some preliminary analysis.

A substantial portion of this modest paper is devoted to an examination of the questions of resource availability and utilization patterns, since it is felt that any examination of development potential must be based on a knowledge of these factors. The analysis of the development potential for specific wood industries is admittedly sketchy. The aim of this paper is to provide an overall framework for examining these more specific industries, the scrutiny of which might be assigned to additional studies.

During the course of my research for this paper, I received the assistance of many civil servants who are actively involved in the forestry, wood products and regional development fields.

The Planning Division of the Department of Regional Economic Expansion was extremely helpful in providing

data and answering my frequent inquiries. I would like to extend particular thanks to Dan McDonald and to David Boulter, who helped guide me through the maze of technical jargon.

The Wood Products Branch of the Department of Industry, Trade and Commerce provided a wealth of material and information. I would like to extend a special thank-you to Curtis Copeland of the Research and Planning Unit, who arranged numerous interviews on my behalf.

Mr. C.P. Howard of the Policy Research Branch, Ontario Ministry of Natural Resources was most helpful. Similarly, André Duperron and Alan Moon, Regional Analysts with the Ontario Ministry of Treasury, Economics and Intergovernmental Affairs, gave freely of their time and knowledge. Mr. S. Barros of the Ontario Statistical Centre ran the special tabulations used to prepare the tables in Chapter 3 of this paper.

I would also like to thank J.B. Cannon, Assistant Professor of Geography, Queen's University, for his valuable suggestions and advice.

Special thanks are extended to Mme Francine Boudreault-Sauvageau who skilfully and patiently typed the tables and body of this study.

Finally, while the above persons deserve credit for much that is good in this study, any shortcomings remain my responsibility.

TABLE OF CONTENTS

LIST OF TABLES

ILLUSTRATION

INTRODUCTION

> In the past, northern development has been haphazard and dependent mainly on single resource developments. Many of these have proven to be wasteful, short-lived, and not well integrated into the northern economy. The time has come for total and integrated development based on well prepared, long-range plans.[1]

The wood industries have played a key role in the development of northern Ontario over the past century. It is projected that they will continue to constitute a prime source of employment and income for the region.

The development of these forest-based industries occurred in a rather piece-meal fashion over a long period of years and, as a result, the sector is not without certain "haphazard" and "non-integrated" characteristics.

In particular, timber currently being harvested in northern Ontario is not reaching its highest potential end-use. Secondary processing of primary wood products (i.e. lumber, veneer, pulp, etc.) is quite underdeveloped. More-

[1]Address by Hon. René Brunelle, Ontario Minister of Lands and Forests (now Ministry of Natural Resources) to the Mid-Canada Development Conference, Lakehead University, August, 1969. Reprinted in Mid-Canada Development Foundation, Essays on Mid-Canada, Maclean-Hunter, Toronto, 1970, p. 11.

over, a restructuring of existing primary allocation patterns might well improve the value added contribution of this sector to the northern economy.

While the express topic of this study is an examination of the potential for the development of secondary wood products industries in northern Ontario, we are also concerned with examining other opportunities for the further processing of the forest resources of the region. The availability and current utilization patterns of the region's timber resources are investigated in an attempt to highlight such opportunities.

Chapter 1 provides a brief review of the social and economic characteristics of northern Ontario. Since there are numerous studies[2] covering this background data, only a cursory overview is presented. TABLES 1-1 to 1-3 provide updated population data for the region, and serve to highlight demographic trends since 1966.

A statistical and descriptive review of the forest resources of northern Ontario is presented in Chapter 2. Particular emphasis is placed on identifying the unutilized resource in the region. It should also be noted that there exists an underutilization of current output. For those readers not familiar with the forestry sector, a short glossary of terms and abbreviations is included as Appendix

[2]see the Province of Ontario's "Design for Development" reports and publications on both the Northeastern and Northwestern Ontario economic regions.

I. Appendix II summarizes the characteristics of selected northern Ontario wood species.

Chapter 3 includes an analysis of the principal statistics of the woods-related manufacturing industries in northern Ontario. The significance of these industries to the region is discussed and development trends are identified. The current composition of the three major wood industry groups in northern Ontario is then examined. Appendix III provides a listing of most woods-related manufacturing establishments currently operating in northern Ontario. The potential for further development in these industries is also discussed.

Finally, Chapter 4 examines the importance of governmental assistance in achieving the optimal utilization of Ontario's forest resources.

Northern Ontario--The Setting:

The province of Ontario has created five Development Regions to provide the framework for coordinated analysis and planning of the province's growth. Two of these Regions are located in northern Ontario.

The Northeastern Ontario Region comprises the districts of Algoma, Cochrane, Manitoulin, Nipissing[1], Sudbury and Timiskaming.

The Northwestern Ontario Region comprises the districts of Thunder Bay, Rainy River and Kenora.

Both subregions lie at the northern fringe of the more urbanized Great Lakes - St. Lawrence corridor of North America. Of the two areas, the Northeastern Region has the greater concentration of population. Within these subregions, settlement rapidly diminishes as one moves north.

---

[1]Most of the references to "northern Ontario" in this study refer to the area of the Province lying north and west of the line formed by Lake Nipissing and the French and Mattawa Rivers. However, it should be noted that Nipissing District extends somewhat southward of this boundary to include the greater portion of Algonquin Provincial Park. Data presented in this Chapter and in Chapter 3 are based on this area, whereas most data in Chapter 2 were compiled using the Mattawa River boundary. This discrepancy is not considered significant since the southern portion of Nipissing District is sparsely settled and has little industrial development.

However, resource-based development has led to a rather dispersed pattern of urban communities, with traditional townsites being determined, in the main, on the basis of resource availability. Mining and forestry have been critical to the development of both Northeastern and Northwestern Ontario.

Demographic and Social Characteristics:

An analysis of the demographic and social characteristics of a region is an important part of the preparatory work necessary to the creation of a plan for future development. Population characteristics such as age composition, natural increase and net migration have implications for the stability and growth of the region. Labour force characteristics and education patterns are important considerations in analyzing development potential and industry productivity. The provision of other social services (including housing) is of importance to development as well. Finally, an analysis of income patterns can indicate problem areas.

These and other demographic and social characteristics for northern Ontario have been analyzed in great detail under the Provincial Government's Design for Development program.[2] The reader is referred to the studies

[2]See Ontario, Design for Development: Northeastern Ontario Region, Phase 1: Analysis, January, 1971; The Northwest Ontario Regional Development Program - A Progress Report, October 1969; Design for Development: Northwest-

prepared under this program for an in-depth analysis of northern Ontario development.[3] However, in order to provide a general setting for the specific study of the woods-related industries pursued in the following sections of this paper, a brief summary of northern Ontario's demographic, social and economic characteristics is presented below. Also, TABLES 1-1 to 1-3 provide updated statistics on population trends.

(a) Population Patterns:

The population of northern Ontario grew from 739,712 in 1966 to 776,505 in 1971 (see TABLE 1-2), an increase of 5 per cent. This compares with an average increase for the Province as a whole of 10.7 per cent over the same period. Approximately 10.1 per cent of the Province's total population lives in northern Ontario.

Three quarters of northern Ontario's population is classified as urban, and the trend is towards increasing concentration. However, there is a relatively limited regional population base on which to draw and net outmigration patterns are common to both Northeastern and Northwestern Ontario.

These general population characteristics for northern Ontario can be examined more clearly on a sub-regional basis.

---

ern Ontario Region, Phase 2: Policy Recommendations, October 1970.

[3]The economic bases of the Regions were also analyzed under this program.

TABLE 1-1

NORTHERN ONTARIO
POPULATION BY REGION AND SELECTED CITIES
1966 AND 1971

	1971	1966	% Change 1971/1966
Northeastern Region:			
Total:	552,135	516,228	7.0
Selected Cities:			
North Bay	49,063[a]	23,635	107.6
Sault Ste Marie	78,175	74,594	4.8
Sudbury (metro)	172,456	141,847	21.6
Timmins	28,252[a]	29,303	-3.6
subtotal	327,946	269,379	21.7
% of total	59.4	52.2	
Northwestern Region:			
Total:	224,370	223,484	0.4
Selected Cities:			
Thunder Bay (metro)	111,492	108,035	3.2
% of total	49.7	48.3	
Total, Northern Ontario	776,505	739,712	5.0
Total, Ontario	7,703,106	6,960,870	10.7

Note:

[a]Includes boundary change.

Source: Ontario Statistical Review, 1971.

TABLE 1-2

POPULATION BY CENSUS DIVISIONS--NORTHERN ONTARIO
URBAN, RURAL NON-FARM AND RURAL FARM, 1966 AND 1971

Census division - Division de recensement	1966					1971				
	Total	Urban - Régions urbaines	Rural - Régions rurales			Total	Urban - Régions urbaines	Rural - Régions rurales		
			Total	Non-farm - Non agricoles	Farm - Agricoles			Total	Non-farm - Non agricoles	Farm - Agricoles
Northeast:										
Algoma	113,117	--	--	--	--	121,935	102,235	19,700	18,030	1,670
Cochrane	97,334	67,252	30,082	25,304	4,778	95,835	71,305	24,530	22,990	1,540
Manitoulin	10,544	1,441	9,103	6,355	2,748	10,930	1,565	9,365	7,590	1,775
Nipissing	73,533	46,386	27,147	23,166	3,981	78,865	58,730	20,135	17,870	2,265
Sudbury	174,546	--	--	--	--	198,085	146,100	51,985	49,895	2,090
Timiskaming	47,154	30,369	16,785	12,145	4,640	46,485	31,020	15,465	12,040	3,425
Subtotal, Northeast	516,228	N/A	N/A	N/A	N/A	552,135	410,955	141,180	128,415	12,765
percentage	100.0					100.0	74.4	25.6	23.3	2.3
Northwest:										
Kenora	53,995	26,902	27,093	25,969	1,124	53,230	26,415	26,815	26,175	640
Rainy River	25,816	16,913	8,903	5,617	3,286	25,750	17,125	8,625	6,470	2,155
Thunder Bay	143,673	115,955	27,718	24,766	2,952	145,390	126,155	19,235	17,645	1,590
Subtotal, Northwest	223,484	159,770	63,714	56,352	7,362	224,370	169,695	54,675	50,290	4,385
percentage	100.0	71.5	28.5	25.5	3.3	100.0	75.6	24.4	22.4	2.0
Total, Northern Ontario	739,712	N/A	N/A	N/A	N/A	776,505	580,650	195,855	178,705	17,150

Source: Statistics Canada, 1971 Census, Cat. 92-709.

TABLE 1-3

URBAN POPULATION BY SIZE GROUPS--NORTHERN ONTARIO
1971

Census division - Division de recensement	Total urban - Total Régions urbaines	100,000 to - à 499,999	30,000 to - à 99,999	10,000 to - à 29,999	5,000 to - à 9,999	2,500 to - à 4,999	1,000 to - à 2,499
Northeast:							
Algoma	102,235	-	80,580	-	8,825	7,855	4,975
Cochrane	71,305	-	32,970	12,830	7,270	12,945	5,290
Manitoulin	1,565	-	-	-	-	-	1,565
Nipissing	58,735	-	49,190	-	6,660	2,885	-
Sudbury	146,095	-	94,625	10,190	13,570	24,000	3,710
Timiskaming	31,020	-	-	13,625	12,970	-	4,425
Subtotal, Northeast	410,955	-	257,365	36,645	49,295	47,685	19,965
Northwest:							
Kenora	26,410	-	-	12,705	6,935	2,530	4,240
Rainy River	17,130	-	-	-	15,930	-	1,200
Thunder Bay	126,155	108,410	-	-	-	6,450	11,295
Subtotal, Northwest	169,695	108,410	-	12,705	22,865	8,980	16,735
Total, Northern Ontario	580,650	108,410	257,365	49,350	72,160	56,665	36,700

Source: Statistics Canada, 1971 Census, Cat. 92-709.

The total population of the Northeastern Ontario Region in 1971 was 552,135 or 7.2 per cent of the Provincial total (down from 7.4% in 1966). Population within this region increased by 7 per cent between 1966 and 1971. This growth compares with only 0.4 per cent for Northwestern Ontario.

As indicated on TABLE 1-2, 410,955 or 74.4 per cent of the region's population lived in urban areas in 1971. This urban proportion was up from 71 per cent in 1966.[4] Four major centres (North Bay, Sault Ste Marie, Sudbury and Timmins) accounted for over 59 per cent of the region's total population in 1971. The increase in population for these four centres between 1966 and 1971 was a substantial 21.7 per cent (see TABLE 1-1). Thus, it can be seen that there is an increasing degree of population concentration in the Northeast, particularly in centres lying along Highway 17.

The population growth rate in the Northeastern Ontario Region has improved since 1966, after declining throughout the 1951-1966 period. In the early sixties (with the drop in uranium mining) the area experienced a high rate of net outmigration. This rate has moderated significantly in recent years.

The Northwestern Ontario Region contained only 2.9 per cent of the Province's total population in 1971. This

---

[4]Ontario, Design for Development: Northeastern Ontario Region, Phase 1: Analysis, p. 65.

proportion was 3.2 per cent in 1966 and preliminary population projections indicate that, if current trends continue, the Northwest's share of the total provincial population will decline to less than 2.5 per cent by 1991.[5]

TABLE 1-1 indicate that the population increase for the Northwestern Region between 1966 and 1971 was only 0.4 per cent as compared with 10.7 per cent for the Province and 7.0 per cent for the Northeast.

Nearly all rural areas are losing population and most urban centres are growing only slowly. TABLE 1-2 indicates that, in 1971, 75.6 per cent of Northwestern Ontario's population lived in urban centres, up from 71.5 per cent in 1966. However, given the small rural base, there is a limited population residual which can be drawn from smaller settlements into the larger centres. The area of metropolitan Thunder Bay provides a weak exception to this general pattern of stagnation. It recorded a modest population increase of 3.2 per cent between 1966 and 1971 and now accounts for close to one-half of the total population in the Northwestern Region.

Given falling birthrates and a limited rural population, any significant increases in urban ("growth point") population will depend largely upon immigration from outside the Region. However, the current trend is towards

---

[5] see Ontario Department of Treasury and Economics, Preliminary Population Projections for Ontario, 1971-1991, December, 1968.

net outmigration, due to limited employment opportunities. Moreover those who tend to leave the Region are the younger age groups and those whose education and skills are in greater demand elsewhere. Northern Ontario, and, in particular, the Northwestern Region, are "exporters" of social capital.

It should also be noted that over one-tenth of the population in Northwestern Ontario is of Indian origin. Many of these people live in small, isolated settlements in the northern sections of the region.

(b) Labour Force Patterns:

The labour force structure by industry division, as discussed under the heading "Economic Base" below, highlights the resource orientation of the northern Ontario economy. This fact has several implications in terms of the region's labour force patterns.

Firstly, the labour force participation rates for both northern Regions tend to be lower than for the Province as a whole. In 1961, the participation rate for the Province was 56.6 per cent, whereas the rate in Northeastern Ontario was 53.2 per cent[6], and in Northwestern Ontario 54.5 per cent.[7] This can largely be explained by the fact that there are fewer employment opportunities for women in

---

[6]Design for Development: Northeastern Ontario Region, Phase 1: Analysis, p. 72.

[7]Design for Development: Northwestern Ontario Region, Phase 2: Policy Recommendations, p. 1.

resource-oriented economies.

Secondly, the relatively narrow economic base consisting of resource extraction and processing, with a limited number of other activities, results in a tendency for many of the younger, more highly educated members of the labour force to be drawn away from the region to areas which have a wider range of alternative employment opportunities.

(c) Income Patterns:

As the following table indicates, incomes in northern Ontario tend to be below the provincial average:[8]

1966

	North-Eastern	North-Western	Ontario
Per Capita Income	$1,887	$1,930	$2,117
Average Personal Income	4,533	4,446	4,686
Per Household Income	7,920	7,732	7,970

The above figures reflect both the lower regional participation rate and the proportionally larger numbers dependent on the working population due to selective migration. These aggregate figures mask significant intra-regional variations, however. Urban centres tend to have much higher levels of income than the small isolated settlements which have large numbers of native peoples living

[8] compiled from Design for Development: Northeastern Ontario Region, Phase 1, p. 77; Design for Development Northwestern Ontario Region, Phase 2, p. 32.

on subsistance incomes. Also, due to the dominance of such high-wage, capital intensive industries as mining and pulp and paper, some manufacturing wages and salaries in northern Ontario tend to be higher than the Provincial average. This condition imposes a significant cost constraint on the development of further manufacturing activity in this region.

(d) Educational Levels:

The levels of educational achievement in both Northeastern and Northwestern Ontario are rising, yet they still lag behind the levels existing in most other areas of Ontario. Again, there are substantial intraregional variations, particularly since a major contributing factor to the lack of adequate educational facilities is the existence of a widely dispersed population. As population concentration continues, the educational facilities will improve commensurately. The larger communities in northern Ontario today have schools equal to any in the Province.

(e) Housing:

In many parts of northern Ontario there is an acute shortage of desired and/or adequate housing. Demand pressures are particularly strong for rental units in the rapidly growing urban centres such as North Bay and Thunder Bay. This housing shortage is symptomatic of conditions throughout Canada at the present time, but is especially acute in northern Ontario given the higher building costs incurred because of small scale operations and heavy transportation costs

for building supplies. Many observers have also claimed that the shortage in northern Ontario is exacerbated by a lack of local capital availability for financing.

(f) Other Social Services:

The provision of health services, counselling services, and cultural and recreational facilities in northern Ontario is complicated by the vastness of the physical area involved. The larger urban centres are quite well equipped but must also serve an extensive rural hinterland. Technological developments in the transportation and communications fields have reduced the problems in delivery of these services somewhat, but it must be recognized that the limited accessibility of many social services will continue to impede immigration into the region.

Economic Base:

The mining, forestry, pulp and paper, and tourist industries dominate the economy of northern Ontario. The transportation and communications industries are also a major element in the economic base, reflecting the 'corridor' role played by northern Ontario in Canada's east-west trade.

The regional economy is highly susceptible to changes in external demand, given the importance of the export-oriented or 'basic' industries. Major export markets for northern Ontario's production are the United States (on

average providing over 50% of the total market), the rest of Ontario (about 20% of the total market), and the rest of Canada (about 20% of the total market).

Internal linkages in the regional economy are poorly developed. Except for raw resources, most inputs to the mining and manufacturing industries are imported. Moreover, resources (especially minerals) are often exported in a raw or semi-processed form.

With the exception of tourism, the leading sectors of the economy are becoming increasingly capital intensive. Technological change has allowed for increased production but the demand for labour has remained quite static. In some cases, (e.g. forestry) employment demand has dropped considerably.

Since virtually all leading sectors are dependent on an adequate supply of accessible resources, resource depletion (particularly of minerals, a non-renewable resource) creates considerable uncertainty regarding future growth.

The following table identifies the leading sectors in northern Ontario in terms of the labour force structure by industry group. These approximate percentages were based on 1961 census data, but the general relationships are still valid:[9]

---

[9] compiled from Design for Development: Northeastern Ontario, Phase 1, p. 93; The Northwestern Ontario Regional Development Program: A Progress Report, p. 18.

Industry Division or Group	North-east	North-west
Agriculture	3.1%	2.4%
Forestry	4.8	8.3
Mining	19.0	5.6
Manufacturing	16.3	16.7
(Woods-related Industries)	(12.0)	(11.0)
Transportation and Communications	10.3	16.2
Trade	13.1	13.6
Services	22.4	20.6
(Tourism)	(4.2)	(6.2)
Other	11.0	16.6
	100.0%	100.0%

As is indicated above, the woods-related industries (defined as pulp and paper, furniture and wood industries) account for the major portion of manufacturing activity in both Northeastern and Northwestern Ontario. They are also significant in terms of their overall labour force impact.

Forest Regions and Species:

Three broad forest regions, characterized by a general uniformity in physiognomy and in the composition of the dominant tree species, occur in Ontario.[1]

In southwestern Ontario (between Lakes Huron, Erie and Ontario) the only occurrence of the Deciduous Forest Region in Canada is found. This region is dominated by broad-leaved trees with a number of deciduous species reaching their northern limit here. Owing to heavy settlement, the natural forest vegitation is restricted to farm woodlots and remnant stands on soils too poor to farm.

The two other forest regions are completely or partially located in northern Ontario. The Great Lakes - St. Lawrence Forest Region lies north of the Deciduous Forest, along the Great Lakes - St. Lawrence and Ottawa valleys. It is broken by Lake Superior, starts again west of this lake and, including the Sibley Peninsula, extends west to the Lake-of-the-Woods. This forest has a very mixed composition containing hardwoods common to the Deciduous

[1]For a more complete description of these regions and forests, see R.M. Dixon, The Forest Resources of Ontario, Ontario Department of Lands and Forests, Toronto, 1963.

Forest Region and conifers common to the Boreal Forest Region. The characteristic species include red and white pine, yellow birch, sugar and red maple, trembling aspen, black and white spruce, balsam fir and jack pine.

The greater part of the forested area of northern Ontario lies in the Boreal Forest Region which falls north of the Great Lakes - St. Lawrence Forest. This forest is primarily composed of conifers, with black and white spruce the characteristic species. Balsam fir, jack pine and trembling aspen also occur throughout this forest region. When it passes from the Precambrian Shield to the Palaeozoic sedimentaries of the coastal plain that slopes towards Hudson Bay, this forest becomes transitional in character. Due to increasingly unfavourable climatic and topographical conditions, it is generally conceded that timber stands north of the 52nd. parallel are not commercially operable.

Appendix II provides a brief description of selected northern Ontario species groups and their characteristics.

Forest Area and Composition:

As is indicated on TABLE 2-1, approximately 86 per cent of Ontario's productive forest land is located in northern Ontario. This region harbours approximately 95 per cent of the province's gross volume of growing stock for softwood and 77 per cent for hardwood.

Although based on 1963 data, the ratio of Crown to Patented land indicated on TABLE 2-2 is still generally

TABLE 2-1

ONTARIO
AREA OF PRODUCTIVE CROWN AND PRIVATE FOREST LAND
AND GROSS VOLUME OF GROWING STOCK

Zone No.[a]	Area of Productive Forest Land (Thousands of Acres)	Gross Volume Growing Stock[b] Softwood (Millions of Cubic Feet)	Hardwood (Millions of Cubic Feet)	Mean Annual Increment[c] (c.f./ac./yr.)
1	6,934	6,225	1,211	12
2	9,350	8,394	1,617	12
3	26,832	27,699	13,268	18
4	31,165	33,637	18,790	20
5	11,549	7,188	9,394	19
Northern Ont.	85,830 (86%)	83,143 (95%)	44,280 (77%)	
6	12,871	4,117	13,116	22
Totals	98,701 (100%)	87,260 (100%)	57,396 (100%)	18

Notes:

[a] As per Industrial Zone Map, Figure 2-1.

[b] All timber 3.5 inches and over dbh to the tip of the terminal bud.

[c] All species at rotation age.

Source: F.L.C. Reed & Associates Ltd., Table 10, p. 49.

TABLE 2-2

AREA CLASSIFICATION
BY OWNERSHIP AND REGION
1963
(Thousands of Acres)

Region	Ownership	Forest Land			
		Productive	%	Non-Productive	%
Northern Ontario	Crown	67,030	94	8,216	93
	Patented	4,560	6	643	7
	Total	71,590	100	8,859	100
Southern Ontario	Crown	5,403	48	532	33
	Patented	5,802	52	1,087	67
	Total	11,205	100	1,619	100
Potentially Exploitable Area[a]					
Surveyed		22,469	100	23,099	28
Unsurveyed		-	-	59,796	72
Total, Crown		22,469	100	82,895	100
Total, Ontario		105,264[b]		93,373	

Notes:

[a] i.e. the area north of current forest districts.

[b] Compares to 98,701 in TABLE 2-1. The Difference arises as a result of certain reclassifications since 1963. Basically, the ratio of Crown to Patented lands indicated above still applies, however.

Source: adapted from TABLE I-2, Statistical Appendix to The Ontario Forest Industry: Its Direct and Indirect Contribution to the Economy, Prepared by Hedlin, Menzies and Associates Ltd., Ontario Department of Lands and Forests, Toronto, 1969.

valid. Over 90 per cent of the productive forest land is northern Ontario is Crown land. This proportion would exceed 95 per cent if the "potentially exploitable" area was included.

TABLE 2-3 shows that, of the total gross volume growing stock in northern Ontario, 65 per cent is softwood and 35 per cent is hardwood.

Within the softwood category the incidence of species can be broken down as follows: black spruce (50% of gross volume of softwood); jack pine (23%); balsam fir (10%); white spruce (9%); white pine (3%); and other softwoods (5%).

TABLE 2-3 does not provide a breakdown of the hardwood species. Other studies[2] have indicated that aspen is the predominant hardwood in northern Ontario, with both white and yellow birch also well represented.

Intraregional Distribution of Forest Resources:

In order to present a more relevant picture of the forest resources in northern Ontario it is necessary to disaggregate the regional data into smaller zones. Such zones were established in a recent consultants' report prepared for the federal Department of Industry Trade and Commerce.[3] These are indicated on FIGURE 2-1.

---

[2] Ibid., p. 23.

[3] Canada's Reserve Timber Supply, Prepared for the Department of Industry Trade and Commerce, Ottawa, by

TABLE 2-3

ONTARIO
GROSS[a] VOLUME OF GROWING STOCK
BY REGION AND SPECIES
(Millions of Cubic Feet)

Zone[b] No.	White Pine	Red Pine	Jack Pine	White Spruce	Black Spruce	Balsam Fir	Other Softwood	Total Softwood	Total Hardwood	Total All Species
1	-	-	1,200	133	4,629	263	-	6,225	1,211	7,436
2	-	-	1,009	428	6,356	601	-	8,394	1,617	10,011
3	441	295	9,501	1,763	12,263	3,070	366	27,699	13,268	40,967
4	433	102	6,446	4,091	17,768	3,957	840	33,637	18,790	52,427
5	1,654	468	1,037	1,024	905	678	1,422	7,188	9,394	16,582
Northern Ont.	2,528	865	19,193	7,439	41,921	8,569	2,628	83,143 (65%)	44,280 (35%)	127,423 (100%)
6	1,408	257	127	420	83	645	1,177	4,117	13,116	17,233
Total	3,936	1,122	19,320	7,859	42,004	9,214	3,805	87,260	57,396	144,656

Notes:

[a]All timber 3.5"+, dbh to the tip of the terminal bud.

[b]Including cull.

[c]Per Industrial Zone Map, Figure 2-1.

Source: F.L.C. Reed & Associates Ltd.,
Table A5.

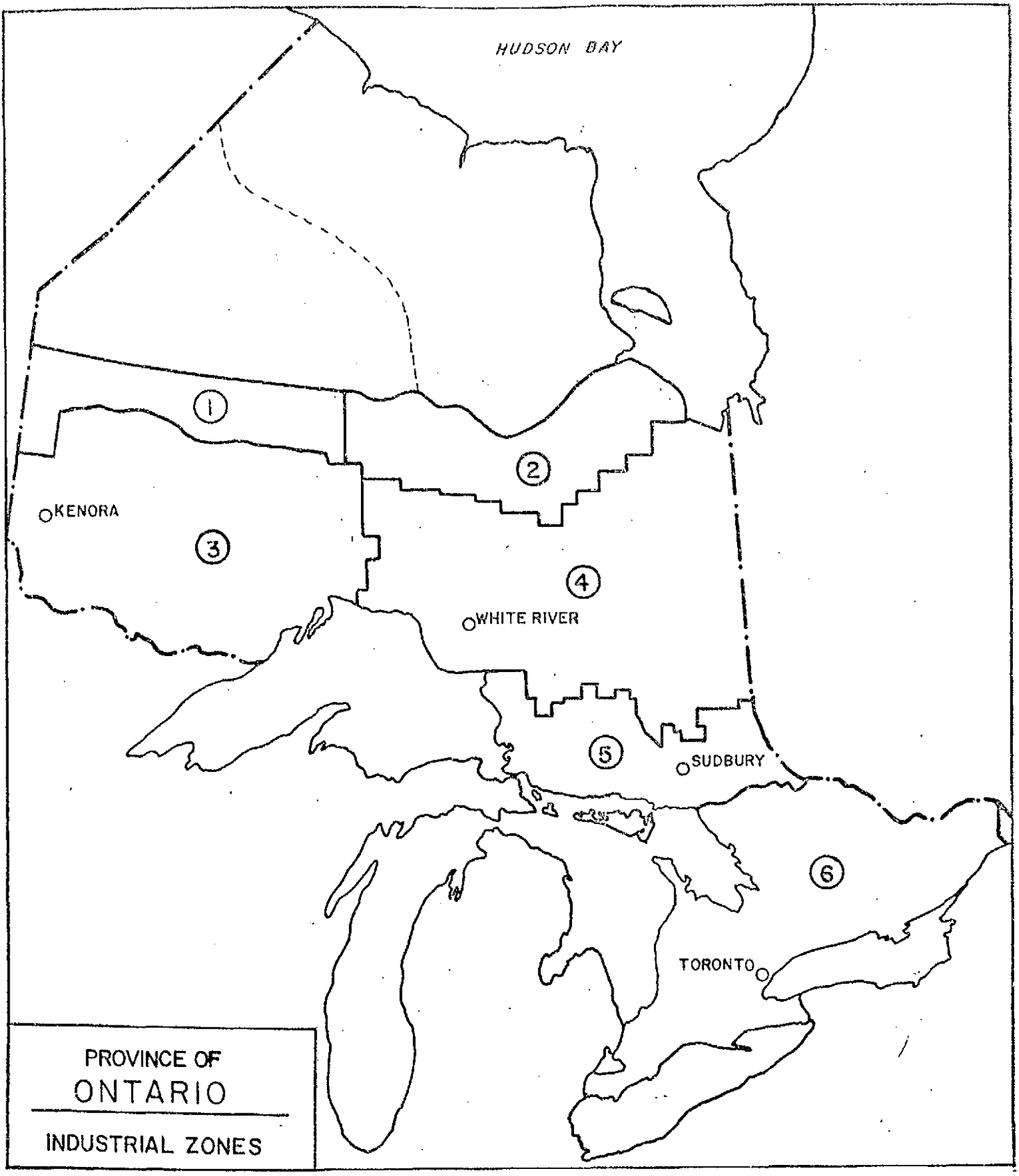


FIGURE 2-1

Source: F.L.C. Reed and Associates Ltd., p. 28.

Lands north of the 52nd. parallel have not been zoned. As noted earlier, timber lying north of this line is not considered to be commercially operable.

Zone 1 runs just above the presently occupied limits and lies completely in northwestern Ontario's Sioux Lookout administrative district. Similarly, zone 2 encompasses potentially exploitable forest land stretching eastward to James Bay. Neither of these zones has forestry activity at present.

Zone 3 covers the heartland of northwestern Ontario, encompassing the Kenora, Fort Frances and Thunder Bay administrative districts plus portions of the Sioux Lookout and Geraldton districts.

Zone 4 takes in the central portion of northeastern Ontario, and, like zone 3, is almost fully developed.

Zone 5 lies between zone 4 and the southern boundary of northern Ontario as defined by the Lake Nipissing - Mattawa River line. Chapleau and Gogama form northern limits to this region.

Central and southern Ontario have been classified

F.L.C. Reed and Associates Ltd., Vancouver, March, 1973 (hereafter cited as F.L.C. Reed and Associates).

The criteria used to establish industrial zones included:

- topographic features
- transportation routes, existing and planned
- conversion centres: mills, etc.
- tenures: public and private
- administrative or management units
- logging costs
- timber types

These criteria were applied selectively, depending on the availability of data and other considerations (see Reed, p. 17-18).

as zone 6. This zone is not examined in this study.

In terms of northern Ontario, zones 3 and 4 are by far the most significant sub-regions. They account for nearly 68 per cent of the area of productive forest land and contain over 73 per cent of the total gross volume of growing stock. These zones have a reasonable species mix with Spruce/Pine/Fir dominating (63% of total gross volume) complemented by significant hardwood stands (34% of total gross volume). The proximity of the Great Lakes - St. Lawrence forest region, particularly in zone 3, is reflected in the traces of red and white pine found in these zones.

Zones 1 and 2 are undeveloped and relatively remote. Timber found in thesezones is generally smaller, scattered and located in more difficult terrain than the stands to the south. These zones contain approximately 14 per cent of northern Ontario's total gross volume of growing stock. Species are extremely limited, with black spruce constituting 63 per cent of the growing stock. This species, together with jack pine (13%) and hardwoods[4] (16%), provides a rather restricted forest base in these northerly zones.

Zone 5 lies in great part in the Great Lakes - St. Lawrence forest region, and thus has a more well-balanced species mix. This zone accounts for approximately 13 per cent of the total gross volume of growing stock in northern

---

[4]mainly aspen.

Ontario. It is particularly strong (relative to the other zones) in sawlog timber. Ten per cent of the growing stock is white pine, and hardwoods (mixed) account for close to 57 per cent of the total gross volume.

Allowable Cut Adjustments:

The derivation of the allowable annual cut (AAC) is central to any discussion of forest resource potential. Basically, the AAC is determined via inventory techniques which are designed to measure the amount of wood that can be removed from a forest while still providing a sustainable resource base. However, the traditional techniques utilized must be critically examined if one is to obtain a realistic measure of the resource potential.

In Ontario, the AAC calculation includes volumes that may be in areas which, at present, are inaccessible to operations. The allowable cut volumes may likewise be in stands which, due to low net yield, are economically inoperable. Moreover, for many species, allowable annual cut estimates soon become meaningless because of these relatively low levels of forest drain. That is, when large portions of the resource are left untouched due to limited or selective harvesting activity, forest age structure and stand composition (factors influencing the AAC calculation) can change dramatically. Thus, calculations of allowable cut are valid only for short periods of up to ten years.

Overall, these factors combine to generate non-sustainable "gross" allowable cuts or depletion rates that must be reduced to merchantable standards[5] if they are to be used for operational planning and control.

In TABLES 2-4 and 2-5 reduction factors of 15 per cent for softwood and 50 per cent for hardwood have been applied to the published allowable cuts to reduce them to net harvestable volumes at the current utilization standard. The indicated timber surplus shown on these tables is arrived at by subtracting the actual cut from these adjusted allowable cuts.

Indicated Timber Surplus:

TABLE 2-4 presents indicated softwood timber surplus data for northern Ontario by zone.[6] The total softwood surplus for northern Ontario is 361 million cubic feet per year, or just over 51 per cent of the adjusted allowable cut. It should be noted that an initial examination of reported Ontario pulp, veneer and sawmill capacity indicated that if these industries were to operate near rated

---

[5] i.e. that reflect practical economic margins.

[6] note that the indicated softwood and hardwood timber surpluses shown in TABLES 2-4 and 2-5 refer to Crown land only. While the statistical data required to determine the zonal timber harvest from private lands do not exist, Reed and Associates (p. 164) estimated that there was no overall surplus of softwood on patented land. However, the patented land hardwood surplus was estimated at 74 million cubic feet per year including zone 6 (Southern Ontario). Given the extent of private lands in zone 6, it can be presumed that much of this surplus lies in southern Ontario.

TABLE 2-4

NORTHERN ONTARIO--SOFTWOOD SUPPLY BY ZONE
AAC, ACTUAL CUT, SURPLUS AND PRODUCT SUITABILITY
CROWN LAND ONLY[a]
(Millions of Cubic Feet)

Zone[b]	Allowable Annual Cut[c]	Actual Cut 1970/71	Indicated Timber Surplus			Product Suitability Surplus			By-Product Chip Potential
			Allocated	Not Allocated	Total	Veneer	Lumber	Pulp	
Softwood (Crown Land)									
1	56	n	n	56	56	3	25	28	8
2	26	n	n	26	26	1	12	13	4
3	294	139	117	38	155	16	77	62	28
4	248	184	50	14	64	13	32	19	14
5	78	18	10	50	60	15	33	12	14
Totals	702	341	177	184	361	48	179	134	68

Notes:

[a] Private land softwood stands in Northern Ontario are insignificant -(AAC, 64 Mil.Cu.Ft.) with no indicated surplus.

[b] Per Industrial Zone Map, Figure 2-1.

[c] Crown land allowable cut has been reduced by 15 percent from indicated allowable to reflect actual utilization.

Sources: F.L.C. Reed & Associates, Tables 5, p. 77, 166.

capacity the softwood surplus derived from 1970-71 cutting would be reduced by 150 million cubic feet.[7]

The bulk of northern Ontario's softwood surplus lies in zone 3. This partially reflects the relatively large stands of jack pine (a hitherto underutilized species) existing in this zone. The comparatively large softwood surplus in zone 5 is explained in part by the traditional emphasis in this area on larger diameter lumber operations to the exclusion of smaller diameter softwoods. Utilization patterns are changing with demand, however, and this surplus should be reduced in the near future.

TABLE 2-5 presents indicated hardwood timber surplus data for northern Ontario by zone. The total hardwood surplus for northern Ontario is 140 million cubic feet per year, or nearly 82 per cent of the adjusted allowable cut. The bulk of this surplus (103 million cubic feet) lies in zones 3 and 4. This surplus is mainly aspen and white birch which have been underutilized in the past, particularly as a pulpwood source, due to technological complications. Recent and continuing developments have made utilization of hardwoods in the pulp and paper industry more feasible and the product suitability distribution on TABLE 2-5 indicates that nearly one-half of this hardwood surplus is suitable for pulp production.

These surplus figures must be interpreted cautious-

---

[7]F.L.C. Reed and Associates, p. 165.

TABLE 2-5

NORTHERN ONTARIO--HARDWOOD SUPPLY BY ZONE
AAC, ACTUAL CUT, SURPLUS AND PRODUCT SUITABILITY
CROWN LAND ONLY[a]
(Millions of Cubic Feet)

Zone[b]	Allowable Annual Cut[c]	Actual Cut 1970/71	Indicated Timber Surplus			Product Suitability Surplus			By-Product Chip Potential
			Allocated	Not Allocated	Total	Veneer	Lumber	Pulp	
Hardwood (Crown Land)									
1	9	n	n	9	9	1	2	6	1
2	n	n	n	n	n	n	n	n	n
3	66	9	41	16	57	6	17	34	7
4	58	12	24	22	46	7	21	18	8
5	38	10	2	26	28	5	14	9	6
Totals	171	31	67	73	140	19	54	67	22

Notes:

[a] No information is available on private land hardwood surpluses. AAC Figures are:

Zone 3	15
4	25
5	16
Total	56 mil. cu. Ft.

[b] Per industrial Zone Map, Figure 2-1.

[c] The allowable cut on Crown and Private land has been reduced by 50 percent From indicated allowable cut to reflect actual utilization.

Sources: F.L.C. Reed & Associates, Tables 6, p. 78, 166.

ly, however. In the words of the F.L.C. Reed and Associates study:

> There is a danger that surplus volumes identified in this study will unintentionally give a false sense of confidence... The softwood lumber industry may be closer to its economic ceiling than anyone suspects. Another danger is that existence of a surplus might divert attention from improving utilization of the existing harvest... It is therefore essential to guard against a pre-occupation with the physical surplus identified in this report.[8]

These cautions were echoed in a recent study conducted at the Great Lakes Forest Research Centre.[9] This study examined forest drainage[10] as a percentage of net merchantable allowable cut on Crown lands in Ontario. It concluded that some species (e.g. white and red pine) have been and are being utilized at a rate well over that considered optimal for a sustained yield.

Spruce (particularly white spruce, which is often located on easily accessible sites and has a dual use as a sawlog and pulpwood species) was found to be subject to a high aggregate drainage approaching 80 per cent. It was further suggested that in some areas spruce is being drained at a rate up to or above the allowable annual cut. The possible existence of such intraregional or intrazonal va-

---

[8] Ibid., p. 194.

[9] Internal study prepared for the Canadian Forestry Service, Department of the Environment, October, 1972.

[10] Defined to include fire, insect and utilization inefficiency losses in addition to the measured industrial removals.

riations in utilization rates should be kept in mind.

Jack pine is the next most important coniferous species in Ontario, with usage continuing to increase. It was noted that the drainage of jack pine is still well below its potential at 57 per cent of the net merchantable annual allowable cut in 1970.

The drainage of hardwoods from Crown lands was found to be particularly low. The large allowable cut for poplar (aspen) and white birch, along with their rather low actual usage, depresses the total drainage figure for all hardwoods. The drainage for these two species was 16 per cent and 4 per cent respectively. The level of drainage of the remaining hardwood species is much higher.

Timber Licensing and Allocation:

Surplus timber volumes have been defined in terms of the difference between allowable annual cuts and actual cuts. In order to determine future utilization options, it is necessary to consider these indicated surpluses in conjunction with licensing and other allocations made to existing industry.

"Allocated" surpluses exist within underutilized[11]

[11]Much of the forest in northern Ontario contains a variety of tree species and sizes suitable to meet a range of industrial needs for roundwood. However, with present licensing practices an industry requiring only one species and one size (e.g. spruce for pulpwood) may aquire the right to cut all species and all sizes and be under no obligation to provide the unused species and sizes to other industries. These practices are discussed further below.

lease and license areas and on private lands. "Unallocated" surpluses may exist within Crown forests where, for reasons such as lack of primary development and lack of markets, etc., the full allowable cut is not being utilized.

The opportunity for the directed utilization of the two types of surplus varies. Governments have full control over unallocated surpluses but less control over allocated surpluses. However, there is a general trend on the part of all provincial governments[12] to loosen tenure systems (which lead to allocated surpluses) with the objet of inducing a larger timber harvest and a higher level of utilization. The Honourable Leo Bernier, Ontario's Minister of Natural Resources, recently stated:

> There are inefficiencies and perhaps inequities in the current pattern of timber allocations in the north. This is a natural result of the historical interaction of wood-using industry development and the Government's past licensing policies... I am becoming more and more convinced that we must ensure that no significant usable wood products are tied up in licenses to the detriment of existing or new industry.[13]

Since 1920 the practice of offering Crown timber for sale has gradually been replaced by the issuance of licenses. The 1967 Report of the Forestry Study Unit[14], indicated that up to 90 per cent of all Crown timber cut in

---

[12]e.g. for a discussion of Saskatchewan's new forest policies, see Financial Post, (June 30, 1973), p. M-3.

[13]Address by Hon. Leo Bernier to Ontario Lumber Manufacturers Association, Toronto, April 12, 1973.

[14]Ontario, Condensation of the Report of the Forestry Study Unit, 1967, Department of Lands and Forests, Toronto, 1968.

Ontario is cut under the authority of negotiated licenses issued pursuant to Section 3 of the Crown Timber Act. The terms and conditions of these licenses may vary from license to license depending on the location, species harvested and products to be manufactured. The size of the license and its duration are dependent on the size of the proposed industry and its stability. Maximum terms are 21 years. About two-thirds of the total cut of Crown timber in Ontario is harvested under the authority of such "long-term" licenses. In 1967, there were approximately forty[15] of these licenses outstanding for 21 year periods, covering sufficient areas to supply the licensees' requirements on a sustained yield management basis.[16] Normally, all species falling in the management area are assigned to the licensee.

In recent years, a number of large companies have obtained Crown timber supplies under what are known as Volume Agreements. There are now twelve to fifteen such Agreements in operation, mostly in northern Ontario. Under this form of tenure the Province guarantees to supply a specified volume of timber to a company from within a certain geographic area. Usually such a company is interested in only a limited range of species.

In these cases, the Government prepares and adminis-

---

[15] Ibid., p. 7.

[16] Recent discussions with the Timber Sales Branch of the Ontario Ministry of Natural Resources confirmed that these figures are still valid.

ters management plans and carrying fees are charged only for the species areas included in the Agreement (i.e. not the whole geographic area as under Section 3 leases). These Agreements have certain merit in that they do not necessarily tie the entire resource in an area to one company.

There is evidence that the present licensing system of tenure in Ontario has impeded the development of sawmill operations and other higher degree utilization patterns in northern Ontario.[17] The pattern of Crown timber licenses in Ontario has developed piece-meal over the years. Manufacturing processes have changed, lumber and plywood have become more important products and sawmill and veneer mill residues have become a significant source of wood fibre for the pulp industry. Yet licensing arrangements have not kept pace with these changes.

The 1947 Ontario Royal Commission on Forestry faced this problem and recommended the creation of "forest operating companies". Under this concept, all woods operations within defined areas would be pooled. Timber allocations would be dependent on shareholding and based on requirement. More recently, it has been suggested that steps be taken to encourage a more rapid expansion of integrated logging whereby timber companies would have access to sawtimber or

---

[17]For a fuller discussion, see Ontario Economic Council, A Forest Policy for Ontario, Queen's Printer, Toronto, February 1970, pp. 14-15.

pulpwood concessions. Volume Agreements are somewhat in this category. Also, the economic forces of profitability have led some licensees to undertake a degree of horizontal integration in their woods operations.

Further steps must be taken to ensure that wood from Crown lands is channelled to its most economic end use. This fact has been recognized by the Ontario government, which is currently formulating policies in this area. The Province commissioned the development of a Timber Resource Allocation Model[18] (based on a linear programming 'transportation' model) to help determine the rationalization of licensing arrangements. Such rationalization could lead to exchanges or significant revisions of present holdings.

Current Timber Allocation:

General market conditions, traditional approaches, and to some extent the existence of licensing restrictions, have shaped the current allocation of Crown timber cut in northern Ontario. TABLE 2-6 indicates that for northern Ontario as a whole 371.9 million cubic feet of timber was cut on Crown land in the year ending March 31, 1971. Of this total volume, 322.6 million cubic feet (or 87% of the total) was allocated to pulpwood usage. This proportion was even higher in the northwestern region where pulpwood

[18] Rationalization of Timber Licenses in Northwestern Ontario, A Project of the Resource Economic Branch, Ontario Department of Lands and Forests, November, 1971.

TABLE 2-6

TIMBER CUT ON CROWN LAND
IN YEAR ENDING MARCH 31, 1971
(in 000's Cubic Ft. and $ 000's)

Forest District	Sawlogs	Long Timber	Pulpwood	Fuel Wood	Misc.	Total Volume	Stumpage Value
							$
Northeastern:							
Chapleau	6,116	36	22,287	20	....	28,460	772
Cochrane	4,664	69	35,045	56	1	39,835	1,370
Kapuskasing	10,414	9	30,048	53	3	40,528	1,092
North Bay	6,252	100	5,600	4	7	12,006	541
Sault Ste. Marie	4,064	....	3,844	49	....	7,957	424
Sudbury	3,142	86	4,943	45	1	8,216	285
Swastika	3,410	7	14,274	89	17	17,807	599
White River	672	0	14,562	5	0	15,240	514
subtotal	38,734	307	130,603	321	29	170,049	5,597
Northwestern:							
Fort Francis	4,129	50	10,829	8	5	15,021	413
Geraldton	1,281	....	59,168	17	1	60,467	1,805
Kenora	863	35	37,699	12	4	38,613	1,186
Sioux Lookout	899	0	30,147	97	0	31,143	971
Thunder Bay	2,323	55	54,175	16	3	56,572	1,815
subtotal	9,495	140	192,018	150	13	201,816	6,190
Total, Northern Ont.	48,229	447	322,621	471	42	371,865	11,787
Total, Ontario	60,520	879	333,565	566	199	395,786	12,829

Note: Division of Forest Districts corresponds roughly to the economic regions.

Source: Ontario, Department of Lands and Forests, Statistics 1972, Supplement, p. 225.

accounted for 95 per cent of the total cut.

The second most significant application of timber cut on Crown land is for sawlogs.[19] They account for 48.2 million cubic feet or 13 per cent of the total northern Ontario cut, but there is significant intraregional variation. In the northeast, sawlogs account for approximately 23 per cent of the total Crown land cut, whereas in the northwest less than 5 per cent of the total cut was attributed to sawlog production.

This can be explained in great part by the species mix in the two regions. TABLE 2-7 indicates that northeastern Ontario supplies 52 per cent of Ontario's total softwood lumber production and 20 per cent of its hardwood production. The northwest supplies 28 per cent of the province's softwood lumber and virtually all of this northwestern Ontario production is in Spruce/Pine/Fir. The northwest supplies only one per cent of the province hardwood lumber.

Potential Timber Allocation:

TABLES 2-4 and 2-5 indicate the 'product suitability' for the surplus of softwood and hardwood respectively. Both wood types hold promise for development as pulp sources and the softwoods in particular are felt to have a significant lumber potential. In terms of veneer suitability, both

[19]Together, sawlogs and pulpwood account for 99 per cent of the total cut.

TABLE 2-7

LUMBER PRODUCTION BY ONTARIO SAWMILLS
BY ADMINISTRATIVE REGION & SPECIES
(all Figures in millions of Foot-board measure)

Administrative Region	Spruce, Balsam and Jack Pine	Red and White Pine	Other Soft-woods	TOTAL SOFT-WOODS	% of Total	Birch	Elm	Maple	Other Hard-woods	TOTAL HARD-WOODS	% of Total	MINING TIMBER TIES, ETC.	% of Total	GRAND TOTAL	% of Total
Northwestern	173.8	2.8	—	176.8	28	1.2	—	—	1.6	2.9	1	18.6	38	198.3	23
Northeastern	274.9	46.4	0.8	322.4	52	19.0	0.6	14.6	5.5	39.5	20	18.6	38	380.6	44
Southern	16.7	83.9	23.8	124.4	20	12.0	23.1	78.4	43.6	156.8	79	11.1	24	292.5	33
TOTAL, 1970	465.5	133.2	24.8	623.6	100	32.2	23.6	93.0	50.0	199.5	100	48.4	100	871.6	100
TOTAL, 1969	462.9	155.1	31.3	649.3	...	42.4	32.8	104.1	49.3	228.6	...	73.9	...	951.8	...
TOTAL, 1968	443.2	176.0	25.4	644.5	...	43.8	23.6	103.3	51.4	222.1	...	54.8	...	922.2	...

Note: Totals may not add due to rounding.
Figures based on calendar year tabulations.

Source: Ontario, Department of Lands and Forests, Annual Report, 1971. p. 117.

categories are proportionally of equal importance. The by-product chip potential is of particular significance given recent developments (such as the refiner groundwood process) which provide a ready market for such chips. The annual growth in the production and utilization of pulp chips in northern Ontario has approached 20 per cent in recent years.

It should be noted that there are certain constraints operating to impede the development of this surplus resource. Accessibility is a major constraint, particularly in the northern zones. Some connecting roads are being planned for the area north and west of Thunder Bay, but zone 2 is not being actively considered for any new provincial highways or rail connections at this time.[20] The relatively high delivered costs of surplus wood[21] (dollars per cunit) for certain zones as indicated on TABLE 2-8 is also a constraint on development.

Any realistic estimate of the end product potential for this surplus volume requires consideration of both the physical potential (species, size, etc.) and the current utilization practice in the forestry sector. The utilization practice is changing over time and this evolution will affect not only the potential timber allocation of the surplus, but

---

[20]Discussed in F.L.C. Reed and Associates Ltd., p. 132.

[21]Note: All logging cost estimates are an average based upon extracting the entire surplus within a given zone.

TABLE 2-8

ONTARIO
DELIVERED COSTS OF SURPLUS WOOD
BY ZONE
(Dollars Per Cunit)

Zone	Basic Cost				Stumpage	
	Extraction	Transportation	Overhead	Total Basic	Pulp	Sawlog
Softwood						
1	29.00	8.50	7.20	44.70	2.50	
2	28.00	9.20	6.30	43.50	2.50	
3	24.10	8.90	6.00	39.00	3.00	
4	24.20	8.50	6.10	38.80	3.50	
5	25.20	8.50	3.30	37.00	6.00	
6	20.30	11.10	1.90	33.30	9.50	
Hardwood						
1	31.60	8.70	6.70	47.00	0.50	
2	29.90	7.50	6.10	43.50	1.00	
3	27.70	10.30	6.70	44.70	1.00	
4	24.80	10.30	6.10	41.20	1.00	
5	29.90	9.70	3.30	42.90	11.50	
6	23.80	13.40	1.90	39.10	14.00	

Source: F.L.C. Reed & Associates Ltd., Table 5, p. 113.

of the current production as well.

As a general trend, the F.L.C. Reed study indicated that:

> In the future, a significant expansion in lumber and possibly plywood production can be expected, along with a move towards greater integration within and between companies, including an increased use of by-product chips. The trend will result in a better utilization of the log.[22]

Technological developments, including pulp processes to better accommodate hardwood input and more efficient sawmill machinery to handle smaller diameter logs, will also influence the future allocation of northern Ontario's wood resources.

As was noted earlier, the forest industry's heavy reliance on the coniferous species in the past may not hold up in the future due to supply constraints. On the other side, demand factors may lead to the diminuation (or expansion) of specific wood using sectors in northern Ontario. Environmental considerations and alternative (recreational) forest usage demands may also influence the allocation of timber production in northern Ontario in the future.

---

[22]F.L.C. Reed and Associates, p. 164.

Wood-Using Industries:

There are a variety of traditional approaches to the categorization of wood-using industries.

One approach involves the division of these industries into "Primary" and "Secondary" classifications. Primary wood-using industries include all of those firms and operations characterized by roundwood input. Secondary wood-using industries are defined as those which remanufacture primary wood products (such as lumber, plywood and veneer, etc.) into finished or semi-finished wood-containing goods.[1]

Another frequent classification identifies the "Forestry Industries" as being composed of the logging sector (included in Statistics Canada's Division 2--Primary Industries) plus two sectors from Division 5--Manufacturing Industries. These two sectors are Group 8--Wood Industries, and Group 10--Paper and Allied Industries.

For the purposes of this paper, the wood-using industries have been defined as those industries falling into

[1]This approach was followed by the Ontario Department of Lands and Forests in compiling its two directories: Primary Wood-Using Industries in Ontario, 1971, and Secondary Wood-Using Industries in Ontario, 1968.

the S.I.C. major manufacturing Groups 8 (Wood Industries), 9 (Furniture and Fixture Industries) and 10 (Paper and Allied Industries). Logging or "woods operations" activity has been excluded from this analysis. Also, while the express topic of this study involves an examination of the potential for the development of a 'secondary' wood products industry in northern Ontario, we are also concerned with investigating other opportunities for increasing the value-added contribution of the forest resources to the economy of this region. Thus, we have included some 'roundwood-input' industries in our analysis.

Group 8 (Wood Industries) includes: sawmills and planing mills (establishments primarily engaged in sawing boards, timbers and dimension stock, and in dressing lumber); veneer and plywood mills; sash, door and other millwork plants (including mouldings, hardwood flooring, pre-fabricated wooden structural assemblies and buildings); wooden box factories; coffin and casket manufacturers; and miscellaneous wood industries (including wood preservation, woodenware and particle board).

Group 9 (Furniture and Fixture Industries) is composed of: household furniture manufacturers; office furniture manufacturers; miscellaneous furniture and fixtures manufacturers (including store fixtures); and electric lamp and shade manufacturers. Substantial material substitution in recent years (particularly the use of plastics and metal) has reduced the significance of wood

input in this sector. For our purposes, we are primarily concerned with wooden household furniture manufacture.

Group 10 (Paper and Allied Industries) includes: pulp and paper mills; paper box and bag manufacturers; and miscellaneous paper converters (including such operations as envelope, wallpaper, crepe paper, wadding, and napkin manufacture). Due to the overwhelming impact of the pulp and paper mill industry, this sector is the most significant wood-using Group in northern Ontario.

Significance of Northern Ontario to the Province's Wood-using Industries:

As a resource supplier northern Ontario is of overwhelming importance to the Province's wood-using industries. The north contains 95 per cent of the Province's softwood and 77 per cent of its hardwood merchantable timber stock, and accounts for 97 per cent of the pulpwood and 67 per cent of the lumber production in the Province.

But, in spite of this, the concentration of secondary wood and paper-using (i.e. converting) plants in southern Ontario leads to the situation whereby only 22 per cent[2] of the Province's woods-related manufacturing-based employment is found in the north. Similarly, the north's proportion of salaries and value added in these

[2]The following percentages were computed from data presented in TABLE 3-1, and were calculated on a 'Total Activities' basis.

TABLE 3-1

SELECTED PRINCIPAL STATISTICS
CENSUS OF MANUFACTURES
NORTHERN ONTARIO AND ONTARIO
1970

Region	Establishments	Manufacturing Activities						Total Activities					
		Production and related workers				Value added-manufacturing	% of total	Employees				Value Added-Total	% of total
		Number	% of total	Wages	% of total			Number	% of total	Salaries & Wages	% of total		
				$'000		$'000				$'000		$'000	
NORTHERN ONTARIO:													
8. Wood Industries	111	4,141	14.9	23,367	11.3	41,493	7.9	4,683	13.2	27,871	10.0	41,492	7.8
9. Furniture & Fixtures	35	112	0.4	484	0.2	1,139	0.2	137	0.4	633	0.2	1,137	0.2
10. Paper & Allied	20	11,081	40.0	90,585	43.8	236,849	45.2	13,109	36.8	110,345	39.6	240,164	45.0
Other Major Groups	363	12,397	44.7	92,418	44.7	244,692	46.7	17,687	49.6	139,753	50.2	251,490	47.0
Total	529	27,731	100.0	206,854	100.0	524,173	100.0	35,616	100.0	278,602	100.0	534,283	100.0
ONTARIO:													
8. Wood Industries	755	13,783	2.4	73,339	2.0	149,616	1.4	16,664	2.1	96,282	1.6	152,246	1.3
9. Furniture & Fixtures	899	16,066	2.9	85,662	2.3	192,308	1.8	19,933	2.5	117,355	2.0	195,739	1.7
10. Paper & Allied	283	33,547	6.0	240,473	6.5	592,793	5.6	44,894	5.5	346,429	5.8	614,505	5.4
Other Major Groups	10,801	499,462	88.7	3,311,694	89.2	9,590,028	91.2	725,090	89.9	5,381,768	90.6	10,496,914	91.6
Total	12,738	562,858	100.0	3,711,168	100.0	10,524,745	100.0	806,581	100.0	5,941,834	100.0	11,459,404	100.0

Sources: Statistics Canada, 1970 Annual Census of Manufactures, Preliminary, Cat. 31-201P, 203P.
1970 Census of Manufactures, Ontario Statistical Centre, (Special Tabulation).

industries is lower than could be expected.

There are significant variations within these industries as to the north's relative importance, however.

In terms of total activity in the Province's manufacturing sector, northern Ontario accounts for approximately 4.4 per cent of the employment provided, 4.7 per cent of the salaries and wages paid, and 4.7 per cent of the value added.

The significance of Group 9 (Furniture and Fixtures) activity in northern Ontario is insignificant at the provincial level.

Northern Ontario's major impact in the woods-related industries lies in the activities of Group 10 (Paper and Allied Products). The northern portion of the Province accounts for 29.2 per cent of the employees, 31.9 per cent of the salaries and wages, and 39.1 per cent of the value added in this sector.

The north's impact in Group 8 (Wood Industries) is also important in terms of employment and wages (28.1 per cent and 28.9 per cent of the Ontario total respectively), but this significance drops when value added is considered. Northern Ontario's share of value added in this sector is only 12 per cent, reflecting the relative capital sophistication of the wood industries located in southern Ontario.

Significance of the Wood-using Industries to Northern Ontario:

Within the manufacturing sector in northern Ontario,[3] the wood-using industries account for over one-half of the total manufacturing employment (see TABLE 3-2). Over 74 per cent of the manufacturing employment in the Northwest and 28 per cent in the Northeast is provided in woods-related industries. These industries account for 49.8 per cent of the total manufacturing salaries and wages for the region and for 53 per cent of the total manufacturing value added.

Of these industries, the Paper and Allied Industries group is the most significant, particularly in the Northwest where, in 1970, 7,663 of the total manufacturing employment of 11,813 (or 64.9 per cent) was contained in this major group. There was a modest downward shift in employment in both the Northeast and Northwest in this industrial group between 1967 and 1970 (-3.5 per cent and -4.2 per cent respectively). This change reflects the fact that pulp and paper markets had slackened by 1970 and also the fact that this industry has been characterized by an increasing substitution of capital for labour.

In terms of salaries and wages the Paper and Allied Industries are even more significant to the region's manufacturing sector, providing 39.6 per cent of the total

[3]As was noted in Chapter 1, manufacturing activities account for approximately seventeen per cent of the total labour force in northern Ontario.

TABLE 3-2

DISTRIBUTION OF EMPLOYMENT[a] BY REGION
MANUFACTURING INDUSTRIES
1967 AND 1970

Region	1967		1970		% Change 1967-1970
	Total Employment	%	Total Employment	%	
Northeastern:					
8. Wood Industries	4,101	12.85	3,575	15.02	-12.82
9. Furniture and Fixtures	89	0.28	130	0.55	46.06
10. Paper & Allied Industries	5,644	17.68	5,446	22.88	- 3.50
Other Manufacturing	22,091	69.19	14,652	61.55	-33.67
	31,925	100.00	23,803	100.00	-25.44
Northwestern:					
8. Wood Industries	928	7.29	1,108	9.38	19.39
9. Furniture & Fixtures	9	0.07	7	0.06	-22.22
10. Paper & Allied Industries	8,002	62.85	7,663	64.87	- 4.23
Other Manufacturing	3,793	29.79	3,035	25.69	-19.98
	12,732	100.00	11,813	100.00	- 7.21
Southern:					
8. Wood Industries	13,728	1.77	11,981	1.56	-12.72
9. Furniture & Fixtures	20,628	2.66	19,796	2.56	- 4.03
10. Paper & Allied Industries	30,778	3.98	31,785	4.12	3.27
Other Manufacturing	708,436	91.59	707,403	91.76	- 0.14
	773,570	100.00	770,965	100.00	- 0.33
Total-Ontario:					
8. Wood Industries	18,757	2.29	16,664	2.06	-11.15
9. Furniture & Fixtures	20,726	2.53	19,933	2.47	- 3.82
10. Paper & Allied Industries	44,424	5.42	44,894	5.57	1.05
Other Manufacturing	734,320	89.76	725,090	89.90	- 1.25
	818,227	100.00	806,581	100.00	- 1.42

Note:

[a]Total Activity Basis

Sources: Statistics Canada, Cat. 31-203 (Annual); Ontario Centre, Special Tabulation.

salaries and wages (as against 37 per cent of the total employment). This reflects the higher wage levels in this high-skill, capital-intensive industry group.

The impact of the high levels of capitalization is further emphasized when one notes that the Paper and Allied Industries account for 45 per cent of the total manufacturing value added in northern Ontario.

Major Group 9 (Furniture and Fixtures) is insignificant in both northern regions at the present time, constituting only four-tenths of a per cent of the total manufacturing employment in northern Ontario. While there has been some growth in this industry between 1967 and 1971, particularly in the Northeast, (see TABLE 3-2), the small absolute base diminishes the significance of the growth pattern indicated.

The Wood Industries sector (Group 8) is a much more significant group in the northern Ontario economy. It provides over 13 per cent of the total manufacturing employment in the region. However, given that wage levels in this group are lower than the regional average, (which is inflated by mining & pulp and paper wage rates), it accounts for only 10 per cent of the salaries and wages paid. Value added in the Wood Industries drops to 7.8 per cent of the regional total, but, as discussed further below, the general trend is towards increasing value added in this sector.

Trends in Wood-Using Industries in Northern Ontario:

TABLES 3-3 to 3-6 present the Principal Statistics (manufacturing operations basis) for northern Ontario's woods-related industries and its total manufacturing sector for the period from 1967 to 1970. This information is disaggregated by region.

When considering the trends indicated in these tables, it should be remembered that the forest products industry is an important, integrated segment of the Canadian economy. Thus, just as the economy of Canada experienced severe pressures in 1970, so too did the provincial forest products industry. Sawmill products face the demand vagaries of the domestic market, particularly residential housing construction, and pulp and paper markets face a highly competitive world supply conditions.

Given this situation, the changes in the absolute values of the selected performance indicators (employees, wages, value added) must be interpretted cautiously. A more significant insight into the trends of these industries can be obtained by examining shifts in their relative importance to the total manufacturing base in the region.

The Wood Industries in northern Ontario are dominated by the sawmilling industry. Group 8 is most significant in the Northeastern Region. This industry's employment impact in the Northeast, in absolute terms, dropped off in 1969 and 1970, reflecting the general recession conditions of the economy as a whole. However, in relative

TABLE 3-3

PRINCIPAL STATISTICS--1967
CENSUS OF MANUFACTURES
SELECTED INDUSTRY GROUPS
NORTHEASTERN AND NORTHWESTERN ONTARIO
(Manufacturing Activities Only)

Region	Establishments	Manufacturing Activities									
		Production and related workers					Cost of fuel and electricity	Cost of materials and supplies	Value of shipments of goods of own manufacture	Value added-manufacturing	% of total
		Number	% of total	Man-hours paid	Wages	% of total					
				'000				$'000			
Northeastern											
8. Wood Industries	89	3,585	14.5	7,805	15,153	10.1	1,718	28,336	59,131	31,067	8.9
9. Furniture & Fixtures	23	69	0.3	143	259	0.2	9	466	1,156	688	0.2
10. Paper & Allied	9	4,704	19.0	10,219	31,086	20.6	9,082	69,240	155,411	77,985	22.4
Other Major Groups	242	16,400	66.2	34,477	104,124	69.1	30,633	178,789	444,966	238,371	68.5
Total	363	24,758	100.0	52,644	150,622	100.0	41,442	276,831	660,664	348,111	100.0
Lakehead--Northwestern											
8. Wood Industries	33	813	8.0	1,741	4,192	6.7	404	9,404	17,102	7,220	4.2
9. Furniture & Fixtures	12	7	0.1	15	28	0.1	2	109	241	130	0.1
10. Paper & Allied	12	6,798	66.4	14,840	45,424	72.3	21,008	128,247	274,277	125,992	74.0
Other Major Groups	133	2,606	25.5	5,478	13,153	20.9	2,195	56,362	93,342	36,814	21.7
Total	190	10,224	100.0	22,074	62,797	100.0	23,609	194,122	384,962	170,156	100.0

Source: 1967 Census of Manufactures, Ontario Statistical Centre (Special Tabulation).

TABLE 3-4

PRINCIPAL STATISTICS--1968
CENSUS OF MANUFACTURES
SELECTED INDUSTRY GROUPS
NORTHEASTERN AND NORTHWESTERN ONTARIO
(Manufacturing Activities Only)

Region	Establishments	Manufacturing Activities									
		Production and related workers					Cost of fuel and electricity	Cost of materials and supplies	Value of shipments of goods of own manufacture	Value added-manufacturing	% of total
		Number	% of total	Man-hours paid	Wages	% of total					
				'000				$'000			
Northeastern											
8. Wood Industries	88	3,749	15.0	8,217	16,887	10.4	2,098	32,782	69,959	36,725	9.7
9. Furniture & Fixtures	28	72	0.3	142	280	0.2	8	495	1,287	819	0.2
10. Paper & Allied	9	4,729	19.0	10,180	34,173	21.0	10,081	78,988	166,407	77,327	20.4
Other Major Groups	240	16,384	65.7	34,530	111,593	68.4	34,948	205,923	493,642	264,351	69.7
Total	365	24,934	100.0	53,069	162,933	100.0	47,135	318,188	731,295	379,222	100.0
Lakehead--Northwestern											
8. Wood Industries	26	734	7.6	1,575	4,138	6.6	408	10,595	20,193	9,058	5.3
9. Furniture & Fixtures	10	6	0.1	13	26	-	2	90	217	126	0.1
10. Paper & Allied	12	6,538	68.1	13,804	45,473	73.1	20,666	128,483	274,482	125,545	72.8
Other Major Groups	134	2,324	24.2	4,921	12,611	20.3	2,579	48,206	89,250	37,705	21.8
Total	182	9,602	100.0	20,313	62,248	100.0	23,655	187,374	384,142	172,434	100.0

Source: 1968 Census Manufactures, Ontario Statistical Centre (Special Tabulation)

TABLE 3-5

PRINCIPAL STATISTICS--1969
CENSUS OF MANUFACTURES
SELECTED INDUSTRY GROUPS
NORTHEASTERN AND NORTHWESTERN ONTARIO
(Manufacturing Activities Only)

Region	Establishments	Manufacturing Activities									
		Production and related workers					Cost of fuel and electricity	Cost of materials and supplies	Value of shipments of goods of own manufacture	Value added-manufac-turing	% of total
		Number	% of total	Man-hours paid	Wages	% of total					
				'000				$'000			
Northeastern											
8. Wood Industries	87	3,672	16.6	7,190	18,254	12.3	2,154	31,252	75,423	42,649	11.8
9. Furniture & Fixtures	31	92	0.4	179	378	0.3	15	850	1,776	927	0.3
10. Paper & Allied	9	4,666	21.1	10,293	37,179	25.1	10,597	82,887	179,768	86,106	24.0
Other Major Groups	239	13,666	61.9	27,209	92,410	62.3	26,085	179,316	444,682	229,798	63.9
Total	366	22,096	100.0	44,871	148,221	100.0	38,851	294,305	701,649	359,480	100.0
Lakehead--Northwestern											
8. Wood Industries	26	944	9.6	1,932	5,739	8.1	504	13,713	23,510	9,566	4.9
9. Furniture & Fixtures	9	6	0.1	10	19	-	2	85	187	100	0.1
10. Paper & Allied	12	6,589	66.6	14,180	50,652	71.7	23,140	138,037	307,866	146,556	74.8
Other Major Groups	126	2,345	23.7	4,925	14,206	20.2	2,733	50,211	93,397	39,555	20.2
Total	173	9,884	100.0	21,047	70,616	100.0	26,379	202,046	424,960	195,777	100.0

Source: 1969 Census of Manufactures, Ontario Statistical Centre (Special Tabulation).

TABLE 3-6

PRINCIPAL STATISTICS--1970
CENSUS OF MANUFACTURES
SELECTED INDUSTRY GROUPS
NORTHEASTERN AND NORTHWESTERN ONTARIO
(Manufacturing Activities Only)

Region	Establishments	Manufacturing Activities									
		Production and related workers					Cost of fuel and electricity	Cost of materials and supplies	Value of shipments of goods of own manufacture	Value added-manufac-turing	% of total
		Number	% of total	Man-hours paid	Wages	% of total					
				'000				$'000			
Northeastern											
8. Wood Industries	79	3,137	17.2	6,774	17,028	12.6	1,670	26,743	60,384	32,050	9.7
9. Furniture & Fixtures	26	105	0.6	230	455	0.3	18	1,182	2,215	1,061	0.3
10. Paper & Allied	9	4,544	24.9	9,771	37,250	27.6	11,465	83,199	181,236	88,122	26.5
Other Major Groups	242	10,430	57.3	22,429	80,289	59.5	13,137	215,514	434,707	210,837	63.5
Total	356	18,216	100.0	39,204	135,022	100.0	26,290	326,638	678,542	332,070	100.0
Lakehead--Northwestern											
8. Wood Industries	32	1,004	10.5	2,091	6,339	8.8	547	15,828	25,345	9,443	4.9
9. Furniture & Fixtures	9	7	0.1	15	29	-	-	165	243	78	0.1
10. Paper & Allied	11	6,537	68.7	14,102	53,335	74.3	25,976	143,499	314,196	148,727	77.4
Other Major Groups	121	1,967	20.7	4,145	12,129	16.9	2,690	42,228	78,649	33,855	17.6
Total	173	9,515	100.0	20,353	71,832	100.0	29,214	201,720	418,433	192,103	100.0

Source: 1970 Census of Manufactures, Ontario Statistics Centre (Special Tabulation).

terms (i.e. as a percentage of total manufacturing employees in the Northeast) the industry's employment pattern has demonstrated a continuing growth, rising from 14.5 per cent of the total in 1967 to 17.2 per cent in 1972. A similar growth in relative terms is indicated in the wage payments which have risen from 10.1 per cent of the total for the Northeast to 12.3 per cent of the total.[4] The general pattern of the increasing importance of these industries to the Northeast is evidenced in value added as well. Value added advanced from 8.9 per cent of the total in 1967 to 11.8 per cent in 1969. This growth was interupted in 1970, reflecting the cutback in output as indicated in TABLE 2-7, combined with cost pressures.

In Northwestern Ontario, the Wood Industries experienced a similar growth pattern. In absolute terms, the number of workers in this group grew from 813 in 1967 to 1,004 in 1970. As a relative source of manufacturing employment in the Northwest, the industry rose from 8.0 per cent of the total to represent 10.5 per cent of the total by 1970. Wages have grown proportionately, but due to the impact of the high wage pulp and paper industry, the wages in Group 8 relative to total manufacturing wages are less significant than their related employment ratio (8.8 per cent in 1970 compared to employment of 10.5 per cent).

[4] In fact, there was a more than proportionate increase in wages relative to workers, reflecting a general upgrading of the labour force requirements in this industry commensurate with higher levels of capital input.

Growth in value added in the ›ods Industries in this region has been rather shakey in the past. As lumber demand strengthens, it should become proportionately more significant.

The Furniture and Fixture Industries (Group 9) have not experienced any significant growth, either in absolute terms or relative to the rest of the manufacturing economy in northern Ontario. There was some slight increase in activity in the Northeast in the 1967 to 1970 period, with value added rising from $688,000 in 1967 to $1,061,000 in 1970, but this modest growth could be attributed to just a few new operations (e.g. Canadian Lundia).

Group 10, the Paper and Allied Industries, have traditionally been most significant in the Northwest. However, while both regions experienced only weak absolute growth in this group (employment actually fell slightly in both regions), it was becoming relatively more important in northern Ontario's manufacturing sector, particularly in the Northeast. There, the Paper and Allied industries accounted for 19 per cent of the total manufacturing employment in 1967. This proportion had grown to almost 25 per cent by 1970. Wages and value added experienced similar growth. The Total value added in Group 10 for the Northeast was $88.1 million in 1970 up from $78 million in 1967.

In the Northwest, the <u>increase</u> in the relative significance of this industry was less pronounced. However,

the relative significance of the industry to the region is overwhelming. In 1970, it accounted for 68.7 per cent of the Northwest's manufacturing employment (up from 66.4 per cent in 1967) and contributed 77.4 per cent of the region's manufacturing value added, or over $148.7 million.

Current Structure and Potential for Future Development:

Presented below is a brief discussion of the current structure of each of the three wood-using manufacturing groups in northern Ontario, along with some preliminary observations on the potential for future development in these industries. As can be seen in this discussion, it is felt that Group 8 (the Wood Industries) holds the greatest promise for generating further employment and value added for the northern Ontario region. Strong competitive pressures act as a constraint on the area's rather high cost pulp and paper industry, and both converted paper products and furniture and fixtures face transportation and related marketing difficulties.

The reader is referred to Appendix III for a fairly complete, up-to-date cataloging of the principal wood-using firms in northern Ontario.

(a) Wood Industries:

The principal component of this industry group in northern Ontario is the sawmill industry. However, plywood, veneer, and, more recently, particle board activities are also significant. 'Secondary' developments have mainly

been restricted to an upgrading of the sawmill activity via the introduction of millwork and dimension stock fabrication.

Lumber production in northern Ontario has followed a long-run upward growth pattern, but this growth has been subject to wide fluctuations from year to year. Due to cost economies, the trend within the sawmill industry has been towards larger and fewer production units (see TABLE 3-7). It is generally agreed that a daily capacity of 50 Mfbm is required for optimal production of softwoods. This optimal size is more than halved for hardwood production, given different technical requirements.[5] The decrease in the number of mills and concurrent increase in output indicates that capital is flowing into this industry.

Approximately fifty-five of the larger mills in northern Ontario are listed in Appendix III. Sixteen of those listed have one hundred or more employees. As is indicated in this listing, these mills tend to be concentrated in the Northeast region, and many of the firms have achieved a high degree of (horizontal) product integration. Chip by-product production is particularly significant. The traditional lack of integration with other forest products industries (notably pulp and paper which is critical because of its control over timber limits) is also changing.

---

[5]hardwood manufacture requires slower speeds, different saw types and special handling equipment for shorter pieces, etc. Also, since hardwoods are normally cut to 1" lumber (dimension stock, etc.) rather than 2" structural lumber there are more cuts and pieces to handle.

TABLE 3-7

ONTARIO--MILLS LICENSED[a]
SELECTED YEARS
(as of March 31)

Year	Sawmills (Daily Capacity in 000's Fbm)			Pulp	Veneer	Specialty	Total
	to 10	10-50	50 up				
1955	1,120	159	58	29	..	..	1,366
1960	646	129	23	24	..	..	822
1965	714	132	50	26	28	97	1,030
1967	655	113	25	26	28	97	944
1968	644	100	28	25	29	96	922
1969	593	101	27	25	29	99	874
1970	596	92	31	24	30	96	869
1971	583	89	30	24[b]	28	104[b]	858

Notes:

[a] i.e. mills licensed under the Crown Timber Act.

[b] Table 10 of the Canadian Pulp and Paper Association, Reference Tables, 1972, indicated the following breakdown of Ontario pulp and paper mills:

Pulp mills	4
Pulp & paper mills	21
Paper mills	11
total	36

Source: Ontario, Department of Lands & Forests, Statistics, 1972, p. 199.

Several of the larger mills now under construction are owned by pulp and paper companies. Pineland Lumber in Espanola (owned by Eddy) and a new stud mill at Kapuskasing (owned by Spruce Falls) are two of these projects that have been established recently.[6] Both these mills received grants under the DREE industrial incentive program (Pineland: $210,000; Spruce Falls: $572,000).[7]

In total, the sawmill industry in northern Ontario has received approximately $2.2 million in aid under the DREE program. The majority of these grants were for relatively modest amounts (under $70,000) although Kokotow Lumber, a highly mechanized, fully diversified operation near Kirkland Lake received over $970,000 in assistance.

In terms of its future potential, the sawmill industry might face a long-run sawlog supply constraint. However, given the significant surpluses of both hardwood and softwood noted in Chapter 2, it is feasible to suggest that this constraint will not become operative in the next two decades or so, providing technological adjustments leading to economical conversion of the surplus timber are achieved. There is a need for continued sawmill rationalization and application of better production methods to

---

[6]Neither is listed in Appendix III.

[7]All figures relating to grants received under the Regional Development Incentives Act are approximate, and are based on a preliminary listing of net accepted offers to December 31, 1972. Source: Internal Study, DREE, Coordination and Liason Division, 1973.

increase the yield of available logs.

Also, since lumber demand is extremely variable, there is a need for diversification of products and market locations, and increased integration. Integration would ensure a better end-use of available logs. Ideally, timber stands and even individual logs would be dissected and directed to their most economical use. Higher quality portions of lower grade logs (especially hardwoods) might be separated for direct manufacture into components, including short veneer bolts, while the rest of the log would be used for the production of lumber, or pulpwood. Vertical integration would tend to lower harvesting costs by making mechanized 'full-tree' logging systems more lucrative.

Product diversification would help eliminate the possibility of northern Ontario's sawmills facing an excess capacity situation similar to that in newsprint in the early seventies. Similarly, market location diversification is desirable. With the full implementation of the Kennedy Round tariffs, all lumber products enter the United States duty free. However, in 1966, Ontario accounted for only six per cent[8] of the exports of Canadian sawmill products. Ontario faces severe competition in the lumber market, particularly from British Columbia. Overall, however, the potential for continued growth in the sawmill industry in

[8]see Ontario, Design for Development: Northeastern Ontario Region, Phase I: Analysis, p. 134.

northern Ontario is reasonable.

Prospects for more significant short-run expansion exist in the millwork and wood components industries. As can be seen from Appendix III there are only a few millwork plants in northern Ontario, and only one of these (Wm. Milne & Sons, North Bay; manufacturers of pine mouldings) provides employment for one hundred workers. The rest of those firms classified under "Millwork Plants" are basically local cabinet-making operations. It should be noted that some of the larger sawmills (e.g. Kakabeka Lumber) have undertaken further processing operations such as dimension stock or rough component fabrication.

A recent consultant's report prepared for the Department of Industry Trade and Commerce concluded that:

> the manufacturing of wood components is the most sophisticated development in the lumber industry in recent years. The further manufacture of lumber into wood components can bring about as much as a five-fold increase in value and a comparable increase in employment.[9]

Wood components can be broken down into three broad classifications: rough; semi-finished; and fully machined. The major market for components is the wooden household furniture industry, which consumes approximately forty per cent of the total output.[10] Other major users are the

---

[9] Dufresne, McLagan, Daignault Inc., Marketing Canadian Hardwood Furniture Components in the United States, prepared for the Wood Products Branch, I.T. & C., Ottawa, May, 1970, p. iv.

[10] Ibid., p. 10. Note: based on U.S. market.

kitchen cabinet industry and numerous other manufacturers ranging from althetic goods to wagon producers.[11]

Product categories include: squares for turnings; turnings; mouldings; drawer sides, backs and fronts; solid and glued up dimension stock; sub-assemblies; etc.

The trend in many manufacturing industries using wood assemblies is to purchase these assemblies in a completed or semi-finished form. Such sub-contracting is characteristic of modern industrial structure (e.g. the automobile industry), and has been adopted to a high degree by American furniture manufacturers in particular. Many U.S. operators in this industry have gone over to "full dimension" and have eliminated their lumber yards, kilns and breakout lines. Due to the traditional posture of the Canadian industry, this alteration in industrial technique has not occurred to the same degree in Canada. However, it is only a matter of time before Canadian furniture manufacturers will be buying components. Already a number of the larger operators have either contracted to purchase components or established their own components plants in areas close to the wood resource (e.g. Sklar at Mattawa).

The consultant's report identified a major market for Canadian hardwood components in the Central United States.[12] Major users in this region include low to medium-

---

[11] Ibid., p. 93 contains a listing of over 75 companies that utilize wood components.

[12] the market within the wooden household furniture industry alone was estimated at over $82 million per year. Ibid., p. 30.

priced furniture manufacturers, the kitchen cabinet industry, and mobile home producers. These industries are all prone to use the softwoods and low density hardwoods (e.g. aspen) that abound in northern Ontario. It should be noted that due to the higher unit value of wood components as compared to rough lumber, components can reach markets beyond the economic range of lumber.

According to the report, the optimum size for a wood components plant to produce semi-finished components (those in highest demand) would require a raw material base of approximately 6 MMfbm/yr. and would produce a sales volume of $3 million. Capital investment would be in the area of $2.2 million (not including working capital requirements) and such a plant would employ approximately sixty people.[13]

In order to minimize transport costs, these plants should be located adjacent to sawmills where lumber can be delivered directly off the green chains. Some situations might lend themselves to a full integration of sawmilling and component activities. Access to a good source of semi-skilled labour, adequate transportation service and available markets for residues are also important prerequisites.

Many locations in northern Ontario amply meet these requirements. Moreover, wood components (in conjunction with other residue usage) may provide the answer to the profitable merchandising of the area's surplus aspen and

---

[13] Ibid., p. vii.

white birch, two species that are difficult to market in a standard lumber form. Some softwood using pulp mills are now being compelled to harvest hardwoods due to supply constraints. The concurrent production of wood components would make this harvesting more profitable.

Similar joint usage of northern Ontario's hardwood reserves could exist between the component industry and third major subgroup in the Woods Industries: the plywood, veneer and particle board industry. Northern Ontario produces a substantial volume of hardwood plywood. The industry began in the post-war period utilizing birch stands, but has since developed other hardwoods. Poplar (aspen) now accounts for approximately one-half of the plywood produced.

From Appendix III it can be seen that there are three very large plywood operations in northern Ontario: two in the Northeast (Levesque at Hearst, and Weyerhauser at Sault Ste Marie) and one in the Northwest (Weldwood at Longlac). Both Levesque and Weldwood also produce particle board. Other particle board mills in northern Ontario include Waferboard Corp. in Timmins (affiliated with Mallette's Lumber), Rexwood Products in New Liskeard, and a new Macmillan Bloedel facility in Thunder Bay. Substantial DREE grants were received by Waferboard ($1.1 million) and Weldwood ($.95 million).

Aspen roundwood is a favoured raw material for particle board since a high degree of rot (aspen has high

cull factors) can be tolerated. Thus, given the rapidly growing market for particle board,[14] there is a good chance that the aspen surplus of northern Ontario will be utilized more fully in the future.[15] This utilization will be even more profitable if chip or particle production is combined with short length veneer retrieval and/or component manufacture.

(b) Furniture and Fixtures:

As was noted in an earlier section of this Chapter, the furniture and fixture industries are quite insignificant in northern Ontario. Excepting local cabinet-making shops, there are only two or three producers of any size in the region, and these are located in the Northeast. The Tritown area contains two fabricators of wood core institutional and component-type furnishings. Canadian Lundia Ltd. of New Liskeard is now quite well established in the shelving industry, specializing in storage and shelving units for schools and other institutions. New Ontario Dynamics (a recipient of a $250,000 RDIA grant) produces shelving and other component furniture parts that have a particle--or chip--board core[16] finished with a vinyl overlay.

---

[14]New forms of 'aspenite' are fully weatherproof and provide high strength, economical sheathing. The products most being displaced by this particle board are western Canadian plywoods.

[15]This market for aspen is much more promising than the pulp market. Compared to other hardwoods, its density is lower and its fibre length is shorter. Thus, it yields an inferior pulp.

[16]Supplier is Rexwood Products.

Another small furniture company (employing less than 25 people at present) is located in Little Current on Manitoulin Island. It is called Manitoulin Rustic Furniture and, as the name implies, produces a unique style of handhewn furniture.

In terms of potential development, it is difficult to conceive of northern Ontario supporting a substantial convential furniture industry. As noted above, the manufacture of furniture components is quite viable and even complete units in knock down (K.D.) form may be feasible for some standard products (e.g. rough sofa frames). However, the lack of a limited local market, combined with extremely high transportation costs[17] relative to other supply sources and the lack of the necessary skilled labour pool, mitigates against the development of many export-oriented or basic furniture operations in this region.

(c) Paper and Allied Industries:

The Paper and Allied sector can be broken down into two sub-groups: pulp and paper mills and the paper using or converting industries. Pulp and paper mills are invariably resource-oriented (requiring wood, power and water) while converting operations tend to be market-oriented. The current structure of the industry in northern Ontario reflects this. Appendix III lists fifteen pulp and paper

[17]Furniture provides a typical example of Weber's weight/bulk thesis, in which an increase in bulk is equated to an increase in weight and thus transport costs.

mills (5 in the Northeast, 10 in the Northwest), and one specialized mill in each of the following categories: paperboard (Abitibi Panel Products, Sturgeon Falls); coated papers (Abitibi Provincial Paper Division, Thunder Bay); and building paper and board (Canadian Johns Manville in North Bay). In all of northern Ontario there is only one significant converting operation, that being Kimberly Clark's creped wadding plant in Kapuskasing.

There have been no new developments in this industry in northern Ontario in recent years. Indeed, a major factor affecting the viability of this industry is its inability to attract and generate sufficient new capital. High wood costs in eastern Canada restrict the conversion of Ontario's mills to growth-oriented kraft pulp production. Wood costs also impede the outlay of capital required to establish refiner groundwood facilities (which can utilize chip residue) at the newsprint mills of the region. The large proportion of "old plant" capital in northern Ontario aggrevates this problem. One alternative for older mills in order to maintain viability in the face of obsolescence is to convert to high value products such as fine paper production. But this too requires capital outlays, and uncertain market conditions have a considerable dampening effect.

A recent newspaper report on a supposed Government study[18] suggested that if current conditions continue it is

[18]"DREE Grants Have Had Little Effect On Economy of

anticipated that at least five mills in northern Ontario will have ceased production by 1975. The article mentioned four Abitibi mills (Sault Ste Marie, Iriquois Falls, Sturgeon Falls, Thunder Bay) and the Dryden Paper Co. Ltd. of Dryden.

While the current high demand for newsprint may alter the 'day of reckoning' in this industry, it would appear that many of the pulp and paper mills in northern Ontario are not economically viable over the long term. This conclusion is conditional on (a) no additional capital outlays (b) little change in other technical or structural relations and (c) no horizontal integration. As for the last point, it should be stressed that integration, while helpful, is hardly a universal panacea. Constraints on the success of any integration move include market conditions, material compatability and scale economies. Overall, given world (and continental) market and competitive conditions it is improbable that we will witness any substantial growth in the pulp and paper industry in northern Ontario. If conditions hold, the industry should be able to continue in its present role however.

Northern Ontario Study Shows", Globe and Mail (June 2, 1973) p. 3.

The Need: Integrated Development of Northern Ontario's Forest Resources:

Leo Bernier, in a recent speech stated: "No matter what portion of the wood-using industry you examine, w'eve reached a point where integration and a closer utilization of our limited wood supplies are essential."[1]

This observation has been confirmed throughout this paper. The need for integrated development extends right back to the critical harvesting phase, to ensure that all available timber is utilized and that planned regeneration procedures are followed. Timber licensing arrangements that allow selective cutting and other forms of underutilization must be eliminated.

Our principal concern is the utilization of the forest resource as a whole to the best advantage of the region, both economically and socially. It is thus necessary to integrate the multiple uses of our forested areas. Commercial exploitation must not arbitrarily override the concerns of recreational usage, nor should economic growth be stymied by irrational emotionalism.

[1]Address by Hon. Leo Bernier to the Ontario Lumber Manufacturers Association, Toronto, April 12, 1973.

Integration is also desirable at the processing stage if the optimal end-use of logs is to be achieved. This should follow from integration at the harvesting stage, for if there is one harvesting operation for all roundwood, it can be expected that manufacturing operations will become concentrated. With such concentration, raw material from the forest will be directed on the basis of species and size to the appropriate industry. By-products of one industry useful to another (e.g. chips) will only have to travel short distances, thus lowering transport costs. There is already evidence of this sort of concentration in northern Ontario, and future developments based on horizontal product integration on the part of major producers (especially pulp and paper companies) is both desirable and necessary.

The Role of Government Assistance:

Governments must play a central role in ensuring the achievement of the efficient use, both long run and short run, of northern Ontario's forest resources. This is particularly true given that over ninety per cent of the gross volume growing stock of the area is located on Provincially-administrated Crown lands.

Government assistance should operate at two levels: programs for resource improvement and development; and programs to encourage industrial rationalization. Both the provincial and federal levels share responsibilities in

these fields.

The Federal Department of Environment, through the Canadian Forestry Service, conducts considerable research into the technical and economic questions relating to resource development. This work is valuable and should be expanded. Under Part V of the Federal-Provincial Rural Development Agreement - Ontario (the ARDA agreement) the Federal government will also share in the costs[2] of forest stand improvement operations on Crown or publicly-owned lands. The ARDA agreement also provides for assistance to programs for the establishment of new processing or manufacturing facilities utilizing renewable natural resources.[3]

The Provincial Ministry of Natural Resources is also engaged in research in the forestry sector. It operates extensive programs of forest management and silviculture. In recognition of the need to improve the province's renewable resource base for future production, the Ontario government recently announced a doubling of its present silvicultural program over the next ten years.

While these programs of assistance to the development of the resource base are important, we must also recognize the significance of government programs aimed at the direct encouragement of resource utilization. The most important industrial assistance program operating currently

---

[2]shareable costs are not to exceed $35 per acre (Section 35).

[3]Section 32 (1)

is the federal Regional Development Incentives Act, administered by the Department of Regional Economic Expansion. This program is designed to encourage the establishment (or expansion) of manufacturing and processing facilities in designated regions of high unemployment and slow economic growth. All of our study area fell within a designated assistance region and up to December 31, 1972, $31.14 million[4] in grants were paid out in this region. Of that total $6.84 million (or 22 per cent) was allocated to the woods-related industries Plywood and board mills received about 40 per cent of the total allocated to the woods industries, followed by sawmills (33 per cent), paper and allied (24 per cent) and furniture (3 per cent).

The Provincial government also has an industrial assistance program that is especially designed for northern Ontario under the title "the Northern Ontario Development Corporation Act". It too is based mainly on capital grants and to date has not been utilized to any extent by the woods-related industries. Both the RDIA and NODC programs are currently under review, and future allotments should reflect more clearly the results of intensive study of industry feasibility.

These direct assistance programs are complemented by extensive governmental services in the areas of trade

[4]All figures relating to grants received under the RDIA are approximate and are based on a preliminary listing of net accepted offers to December 31, 1972. Source: Internal Study, DREE, Coordination and Liason Division, 1973.

and marketing, and the federal Department of Industry Trade and Commerce operates numerous assistance programs for product improvement and productivity enhancement. The only criticism that can be made of these programs is that since they are basically responsive-type programs, many smaller operations fail to avail themselves of them. Efforts must be made to expose all government services to potential industrial developers.

Concluding Comments:

It is the tentative conclusion of this study that the most promising opportunity for potential development in the secondary wood industries in northern Ontario lies in an upgrading of sawmill activity. The furniture and fixtures industry (except for a few specialized firms) is still market rather than resource- oriented. Similarly, converted paper products operations are more suited to a southern location.

The potential for upgrading sawmill activity includes the development of dimension stock lines and the establishment of finished and semi-finished wood components manufacture. Board product expansion (although not technically a 'secondary' product) also holds future promise. As was indicated in Chapter 2, there exists in northern Ontario a vast pool of unutilized resource potential. Development of the above high value products would ensure that this resource contributes effectively to the northern economy.

This brief study did not investigate three fundamental factors that will serve to shape the future development of the secondary wood products industry (and all northern manufacturing): the effect of tariffs and duties; the impact of freight rates; and the availability of an adequate labour pool. Each of these items constitutes the basis for a detailed study in itself.

Also, the analysis in this study was based on highly aggregated data and the conclusions drawn are therefore of a generalized nature. It is suggested that future study be directed to in-depth analyses of specific wood industry potentials in northern Ontario. These sectorally limited analyses could embrace more detailed consideration of all factors affecting future development.

APPENDIX I

GLOSSARY OF TERMS AND ABBREVIATIONS

cord	stock of wood measuring 8 feet long, 4 feet high and 4 feet wide. rough cord: bark on (85 cubic feet of solid wood). peeled cord: bark removed (100 cubic feet of solid wood).
cull	unusable wood, usually because of rot or decay.
cunit	100 cubic feet of solid wood, inside bark.
dimension stock	wood cut from lumber to specified dimensions. Usually with zero defect.
gross total volume	volume of the stem including top and stump but excluding bark and limbs.
gross merchantable volume	volume of the stem excluding top, stump, bark and limbs.
net (as applied to volume)	excluding cull.
CU	cunit
d.b.h.	diameter breast high--diameter outside the bark 4.5 feet from the ground.
Fbm	foot board measure or board foot (1 square foot, 1 inch thick; nominal measurements).
M (as a prefix)	thousand.
MM (as a prefix)	million.

APPENDIX II

NORTHERN ONTARIO LUMBER
SELECTED SPECIES GROUPS AND CHARACTERISTICS[1]

Hardwoods:

Northern Aspen*:

This group contains Trembling aspen (Populus tremuloides), Bigtooth aspen (Populus grandidentata) and Balsam poplar (Populus balsamifera). Light woods of comparatively low strength, they work easily, finish well and hold nails well. They are also utilized in the pulp and paper industry to some degree, and plywood and particleboard applications are becoming increasingly common.

Softwoods:

Eastern White Pine:

This group contains Eastern white pine (Pinus strobus) only. Softest of all the Canadian pines, it works and finished exceptionally well. Although not as strong as most pines, it resists splintering and splitting and has a low shrinkage rate. White pine is in short supply.

Red Pine:

This group contains Red pine (Pinus resinosa) only. Moderately durable, it seasons with little checking or cupping. It is fairly strong, works easily, finishes well and holds nails well.

Spruce/Pine/Fir*:

This is the largest of the commercial groups and includes White spruce (Picea glauca), Black spruce (Picea mariana), Jack pine (Pinus banksiana) and Balsam fir (Abies balsamea), among others. These are highly versatile softwoods of moderate strength with an excellent strength-to-weight ratio. This, plus the ease to which they can be worked to precise sizes, makes this group popular for the fabrication of building components.

This group also provides the bulk of the pulpwood supply in northern Ontario.

---

*Also a pulpwood source.

[1]as classified by the Canadian National Lumber Grades Authority.

APPENDIX III

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
SAWMILLS & PLANING MILLS - GENERAL		
NORTHEASTERN:		
Aikens Bros. Richard's Landing (Algoma Dist.)	Hardwood & Softwood, Posts, Poles Planking, Ties, Dimension Stock (2421, 2411, 2426)	N/A
Arrow Timber Company Ltd. Hearst (Cochrane Dist.)	Lumber and Pulpwood (2421)	130
Austin Lumber (Dalton) Ltd. Sudbury (Sudbury Dist.)	Mining Timber, Pulpwood, Pulpwood Chips, Lumber (2421)	75
Austin Lumber (Dalton) Ltd. Missinaibi (Algoma Dist.)	Lumber, Ties, Mining Timber (2421)	62
Chapleau Lumber Co. Ltd. Chapleau (Sudbury Dist.)	Lumber and Chips (2421)	269
Custom Sawmills (Hearst) Ltd. Hearst (Cochrane Dist.)	Lumber (2421)	208
Benoit D'Amours Lumber Cochrane (Cochrane Dist.)	White spruce lumber (2421)	40
Deep Forest Products Limited Hearst (Cochrane Dist.)	Lumber (2421)	41

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Dubreuil Brothers Ltd. Dubreuilville (Algoma Dist.)	Lumber, Ties, Pilings, Pulpwood, Woodchips (2421)	300
Elk Lake Planing Mill Ltd. Elk Lake (Timiskaming Dist.)	Jack pine and spruce lumber (2421)	47
F. & J. Lumber Co. Hearst (Cochrane Dist.)	Jack pine and spruce lumber (2421)	65
Field Lumber (1956) Ltd. Field (Nipissing Dist.)	Lumber, White and red pine, Yellow birch (2421)	69
Fielding Lumber Co. Ltd. Copper Cliff (Sudbury Dist.)	Lumber timber, Dowelling, Pallets, Taper plugs and pulp chips (2421)	24
Fleron Lumber Co. Ltd. Sault Ste Marie (Algoma Dist.)	Lumber (2421)	25
R. Fryer Forest Products Ltd. Monetville (Sudbury Dist.)	Mining timbers, Softwood and hardwood lumber, Precut studs and pallet stock, post and poles (2421)	20
J. Leo Gauthier Ltd. Sudbury (Sudbury Dist.)	Mining timbers, Lumber, Ties, Pulpwood (2421)	19
James Gilson & Sons Ltd. North Bay (Nipissing Dist.)	Lumber (2421)	27

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Goulard Lumber (1971) Ltd. Sturgeon Falls (Nipissing Dist.)	Red and white pine lumber (2421)	65
Olav Haavaldsrud Timber Co. Ltd. Hornepayne (Algoma Dist.)	Rough and dressed softwood lumber	100 (250)
Island Lake Lumber Company Chapleau (Sudbury Dist.)	Lumber, Railway ties, Mine timbers, Pulpwood, Pulpwood Chips (2421)	118
Kokotow Lumber Limited Kirkland Lake (Timiskaming Dist.)	Jack pine, Spruce and poplar lumber, Chipwood (2421)	156
A. L. Lafreniere Lumber Limited Chapleau (Sudbury Dist.)	Lumber (2421)	62
Levesque Lumber (Hearst) Ltd. Hearst (Cochrane Dist.)	Spruce lumber, wood chips, Pulpwood (2421)	21
Liskeard Lumber Limited New Liskeard (Timiskaming Dist.)	Lumber (2421)	50
C. & R. Mainville Lumber Chelmsford (Sudbury Dist.)	Rough & dressed lumber, Hard and Soft wood and Dimensional (2401, 2426)	11
Malette Lumber 1969 Limited Timmins (Cochrane Dist.)	Lumber, wood chips (2421)	188

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
J.E. Martel & Sons Lumber Ltd. Chapleau (Sudbury Dist.)	Lumber (2421)	117
Rudolph McChesney Lumber Co. Ltd. Timmins (Cochrane Dist.)	Lumber, Ties, Crates, Wooden or wire bound pallets, Bases, Mining timber (2421, 2442, 2449)	78
C.T. McDonald Forest Products Ltd. Kirkland Lake (Timiskaming Dist.)	Dressed & rough lumber, Square timber, Railway ties, Hydro poles (2421)	68
Wm. Milne & Sons Limited Temagami (Nipissing Dist.)	White pine lumber, Red pine lumber (2421)	105
Missinaibie Mills Limited Missinaibie (Algoma Dist.)	Dressed and rough lumber (2421)	52
The Morrison Bros. Ltd. Marten River (Nipissing Dist.)	Lumber and forest products (2421)	20 (30)
Pineland Timber Co. Ltd. Sudbury (Sudbury Dist.)	Mining timber, Lumber, Railway ties (2421)	50
W.B. Plaunt & Son Ltd. Sudbury (Sudbury Dist.)	Mine timber, Lumber, Ties, Woodchips, Poles and piling (2421)	65
Polar Lumber Co. Ltd. Hearst (Cochrane Dist.)	Rough and dressed lumber woodchips (2421)	74

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
W.M. Pollock & Son Ltd. Englehart (Temiskaming Dist.)	Lumber (2421)	55
Portelance Lumber Ltd. Capreol (Sudbury Dist.)	Red and white pine, Rough or dressed (2421)	31
The M.J. Poupore Lumber Co. Ltd. Falconbridge (Sudbury Dist.)	Mine timber (2421)	60
Arthur Roy & Fils Ltd. Timmins (Cochrane Dist.)	Lumber-rough, sawn, or planed (2421)	54
Isidore Roy Ltd. Sturgeon Falls (Nipissing Dist.)	Ties, Lumber, Poles (2421)	21
Sheppard & Morse Ltd. Chapleau (Sudbury Dist.)	White pine lumber (2421)	62
United Sawmill Co. Hearst (Cochrane Dist.)	Custom sawmill and milling (2421)	161
Weldwood of Canada Ltd. Searchmont (Algoma Dist.)	Hardwood and softwood lumber (2421) (2432)	175
Wesmak Lumber Co. Ltd. Sudbury (Sudbury Dist.)	Lumber, Railway ties, Mine timbers, Pulpwood, Pulpwood chips	195

84

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
NORTHWESTERN:		
Amstrong Lumber Company Fort Frances (Rainy River Dist.)	Saw Mill Products (2421)	26
Boreal Timber Ltd. Thunder Bay (Thunder Bay Dist.)	Spruce and jack pine lumber, Jack pine ties, Spruce and jack pine piling and poles (2421)	125
Chukuni Lumber Co. Ltd. Ear Falls (Kenora Dist.)	Pulpwood, Lumber (2411, 2421)	39
Lac Seul Land & Lumber Co. Ltd. Thunder Bay (Thunder Bay Dist.)	Spruce and jack pine studs, Woodchips (2421)	52 (75 logging)
Midway Lumber Mills Ltd. Thessalon (Algoma Dist.)	Lumber and woodchips (2421)	71
Newaygo Timber Co. Ltd. Thunder Bay (Thunder Bay Dist.)	Produce pulpwood (2421)	113
Northern Forest Products Ltd. Thunder Bay (Thunder Bay Dist.)	Poles, Piling, Tie bolts, Sawlogs (2421)	176
Peterson Lumber Co. Ltd. Kenora (Kenora Dist.)	Saw Mill Products (2421)	15
J.F. Thompson Timber Ltd. Thunder Bay (Thunder Bay Dist.)	Pulpwood, Railway ties (2421)	43

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Trilake Timber Co. Ltd. Kenora (Kenora Dist.)	Lumber, treated and untreated, Poles, Piling & timbers (2421)	34
MILLWORK PLANTS		
NORTHEASTERN:		
J.A. Brisson & Sons Ltd. Cochrane (Cochrane Dist.)	Prefabricated houses, Cottages and garages, kitchen cupboards (2431, 2433)	11
Cartwright Builders Supplies Ltd. North Bay (Nipissing Dist.)	Millwork, Cabinets, prefabricated buildings (2431,2433)	29
Evans Lumber & Builders Supply Ltd. Copper Cliff (Sudbury Dist.)	Custom millwork (2431)	14
Laberge Lumber & Supply Co. Ltd. Sudbury (Sudbury Dist.)	Custom mill work (wood), windows (wood) retail sales builders supplies (2431)	62
Wm. Milne & Sons Limited North Bay (Nipissing Dist.)	White and red pine mouldings, pulp chips (2421, 2431)	96
NORTHWESTERN:		
Biltrite Lumber and Supply Ltd. Thunder Bay (Thunder Bay Dist.)	Cabinet work, doors & window frames, pre-fabrication cottages & garages, roof trusses (2431, 2433)	40

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Wanson Millwork Ltd. Thunder Bay (Thunder Bay Dist.)	Sash, doors, frames, cabinets, custom planing of lumber (2431)	10
VENEER AND PLYWOOD PLANTS		
NORTHEASTERN:		
Champlain Forest Products Blind River (Algoma Dist.)	Green veneer (2432)	42
Champlain Forest Products Ltd. North Bay (Nipissing Dist.)	Pine plywood (2432)	60
Cochrane Enterprises Ltd. Cochrane (Cochrane Dist.)	Poplar plywood, spruce plywood (2432)	181
Levesque Plywood Ltd. Hearst (Cochrane Dist.)	Poplar & birch plywood, particle board (2432)	348
Weyerhaeuser (Ontario) Ltd. Sault Ste Marie (Algoma Dist.)	Hardwood veneer, hardwood & softwood lumber, hardwood plywood, hardwood flooring (2421, 2426, 2432)	333
NORTHWESTERN:		
Birchland Veneer Ltd. Thessalon (Algoma Dist.)	Birch and maple face veneers (2432)	53

87

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Multiply Plywoods Ltd. Nipigon (Thunder Bay Dist.)	Construction plywood - aspen & spruce, industrial plywood, birch & aspen, laminated birch (2432)	125
Weldwood of Canada Ltd. Longlac (Thunder Bay Dist.)	Poplar and spruce plywood, hardwoods on particle board, core (2432, 2499)	209
PREFABRICATED WOODEN BUILDINGS AND STRUCTURAL MEMBERS		
NORTHEASTERN:		
Elliott Lumber Co. Ltd. Sault Ste Marie (Algoma Dist.)	Prefab Cottages, Lumber pallets (2499, 2433)	14
NORTHWESTERN:		
John Hagglund Lumber & Fuel Ltd. Thunder Bay (Thunder Bay Dist.)	Pre-cut homes, cottages & garages (2433)	28
Nu-Wood Products Ltd. Emo (Rainy River Dist.)	Pre-fab homes, cabinets (2433, 2431)	18
Unitized Manufacturing Ltd. Thunder Bay (Thunder Bay Dist.)	Relocatable classrooms, churches (2433)	35

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
WOOD PRESERVING		
NORTHWESTERN:		
Northern Wood Preservers Limited Thunder Bay (Thunder Bay Dist.)	Lumber, Railway ties, Poles & Piling, Culverts, Pressure treated wood products, Coal for distilates, creosote	268
WOOD PRODUCTS (n.e.c.)		
NORTHEASTERN:		
Michigan Maple Limited Sault Ste Marie (Algoma Dist.)	Butcher blocks, Laminated maple cutting boards, tables & workbeach tops, Die blocks, Shuffleboard and Laboratory (2499, 2541)	36
Soo Mill and Lumber Co. Ltd. Sault Ste Marie (Algoma Dist.)	Lumber, custom millwork, hardwood tops and butcher blocks, lab tops, shuffleboards and tops, kitchen cupboards, sashless windows (2421, 2431)	77
Rexwood Products Limited New Liskeard (Timiskaming Dist.)	Flakeboard, Fire retardant Particleboard	153
NORTHWESTERN:		
Kakabeka Timber Limited Kakabeka Falls (Thunder Bay Dist.)	Furniture lumber and squares, dowel rods and pins, Fencing lath, lumber (2421, 2426, 2499)	38

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
WOOD HOUSEHOLD FURNITURE (Except Upholstered)		
NORTHEASTERN:		
New Ontario Dynamics Ltd. Haileybury (Timiskaming Dist.)	Furniture components, cupboard doors, Drawer fronts, Shelving, V-Grooved components (all vinyl overlaid and edge-banded) (2511, 2431)	67
Picard Custom Furniture & Fixtures Ltd. North Bay (Nipissing Dist.)	Store fixtures, Church furnishings, Custom furniture, Kitchen cabinets and School furniture (2541, 2531, 2511, 2512)	13
NORTHWESTERN:		
Silver and Kircher Limited Fort Frances (Rainy River Dist.)	Cabinet Makers (2511)	11
PULP MILLS		
NORTHEASTERN:		
Abitibi Paper Co. Ltd. Smooth Rock Falls (Cochrane Dist.)	Kraft pulp (2611)	297
Eddy Forest Products Ltd. Espanola (Sudbury Dist.)	Pulp and paper (2611, 2621)	958
Abitibi Paper Company Ltd. Sault Ste Marie (Algoma Dist.)	Newsprint, Groundwood specialty papers (2621)	523
*Canadian Lundia Ltd. New Liskeard (Timiskaming Dist.)	Storage and library shelving, School cabinets (2531, 2541)	53

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
Abitibi Paper Company Ltd. Iroquois Falls (Cochrane Dist.)	Newsprint, Wrappers (2621)	1,792
Spruce Falls Power & Paper Co. Ltd. Kapuskasing (Cochrane Dist.)	Newsprint, Bleached sulphite (2621, 2819)	2,037
NORTHWESTERN:		
American Can of Canada Ltd. Marathon (Thunder Bay Dist.)	Bleached sulphate pulp (2611)	650
Domtar Packaging Ltd. Red Rock (Thunder Bay Dist.)	Newsprint & liner board (2621, 2611, 2631)	654
Dryden Paper Co. Ltd. Dryden (Kenora Dist.)	Bleached, unbleached and specialty pulps, bleached, unbleached and coloured kraft papers and boards; M.F. wrapping, M.G. wrapping, m.f. bag, m.g. bag, multiwall, crepe, carliners, waxing, waxed, gumming, m.g. envelope, m.f. envelope, mimeo, bond, duplicating foodboard, cupstock and converting stock & building paper (2611, 2621, 2631, 2641)	1,500
Kimberly-Clark Pulp & Paper Co. Ltd. Terrace Bay (Thunder Bay Dist.)	Bleached Sulphate Pulp (2421)	500
The Great Lakes Paper Company Ltd. Thunder Bay (Thunder Bay Dist.)	Newsprint, Kraft (bleached) and (semi-bleached), Sulfite (unbleached) (2611, 2621)	2,500

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
The Ontario-Minnesota Pulp & Paper Company Ltd. Fort Frances (Rainy River Dist.)	Newsprint, Specialty papers, Sulphate pulp (2621, 2611)	745
Abitibi Paper Company Ltd. (Ft. William Mill) Thunder Bay (Thunder Bay Dist.)	Newsprint (2621)	301
Abitibi Paper Company Ltd. (Pt. Arthur Mill) Thunder Bay (Thunder Bay Dist.)	Newsprint (2621)	338
Lakehead Newsprint Ltd. Thunder Bay (Thunder Bay Dist.)	Newsprint in Sheets (2621)	32
The Ontario-Minnesota Pulp & Paper Company Ltd. Kenora (Kenora Dist.)	Newsprint (2621)	912
PAPERBOARD MILLS		
NORTHEASTERN:		
Abitibi Panel Products Ltd. Sturgeon Falls (Nipissing Dist.)	Corrugating board, Hardboard, Platewood (2661, 2631)	269

APPENDIX III-Continued

WOODS RELATED INDUSTRIES IN NORTHERN ONTARIO
(S.I.C. major categories 8, 9, 10)

Company & Location	Products	Employees
PAPER COATING & GLAZING		
NORTHWESTERN:		
Abitibi Provincial Paper Division of Abitibi Forest Products Limited Thunder Bay (Thunder Bay Dist.)	Coated printing papers and coated cover papers (2641)	779
CONVERTED PAPER & PAPERBOARD PRODUCTS (n.e.c.)		
NORTHEASTERN:		
Kimberly-Clark of Canada Ltd. Kapuskasing (Cochrane Dist.)	Creped Wadding (2649)	100
BUILDING PAPER & BUILDING BOARD MILLS		
NORTHEASTERN:		
Canadian Johns-Manville Co. Limited North Bay (Nipissing Dist.)	Wood Fiber & Mineral Fibre, Ceiling tile & panels, Roof insulation (2661, 3296)	264

Source: compiled from Scott's Industrial Directory of Ontario Manufacturers, 8th. ed., 1972-73.

Notes:

[a] Only those companies with ten employees or more were included in the above listing.

[b] Standard Industrial Codes follow the product description.

BIBLIOGRAPHY

BOOKS:

Mid-Canada Development Foundation. Essays on Mid-Canada. Toronto: Maclean-Hunter, 1970.

Smith, David M. Industrial Location. New York: John Wiley and Sons, 1971.

Thoman, R.S. Design for Development in Ontario. Toronto: Allister Typesetting and Graphics, 1971.

DIRECTORIES:

Ontario. Primary Wood-Using Industries in Ontario, 1971. Ontario Department of Lands and Forests, 1971.

————. Secondary Wood-Using Industries in Ontario, 1968. Ontario Department of Lands and Forests. 1968.

Scott's Industrial Directory of Ontario Manufacturers, 8th. edition, 1972-1973. Oakville, Ont.: Penstock Publications Limited.

1973 Pulp and Paper Directory of Canada. Gardenvale, Québec: Pulp and Paper Magazine of Canada.

STUDIES:

Dixon, R.M. The Forest Resources of Ontario. Ontario Department of Lands and Forests, 1963.

Dufresne, McLagan, Daignault Inc. Report of a Study to Determine the Market in the United States for Hardwood Furniture Components. Prepared for the Wood Products Branch, Department of Industry, Trade and Commerce, Ottawa, May 1970.

Ernst & Ernst. Marketing Plan to Increase Exports of Canadian Household Furniture to the United States. Prepared for the Wood Products Branch, Department of Industry, Trade and Commerce, Ottawa (undated).

Leach, H.A. and G.B. Gillies. An Economic Study of the Manufacture of Aspen Lumber for Panels, Dimension Stock and Pallets. Prepared for the Wood Products Branch, Department of Industry, Trade and Commerce, Ottawa, March, 1972.

McKee, A.F. Industrial Incentives for Northeastern Ontario. Prepared for the Regional Development Branch, Ontario Department of Treasury and Economics, Toronto, June, 1970.

Ontario, Department of Lands and Forests. Condensation of the Report of the Forestry Study Unit. Toronto, 1967.

_____. Forest Industry Opportunities in the Sault Ste Marie District. Forests Economics Unit, Department of Lands and Forests, Toronto, (undated).

_____. Pulp Mill Feasibility in the Temiskaming Area. Timber Branch, Ontario Department of Lands and Forests, Toronto, (undated).

Ontario. The Northwestern Ontario Regional Development Program: A Progress Report. Regional Development Branch, Department of Treasury and Economics, Toronto, October, 1969.

_____. Design for Development: Northwestern Ontario Region, Phase 2: Policy Recommendations. Department of Treasury and Economics, Toronto, October, 1970.

_____. Design for Development: Northeastern Ontario Region, Phase 1: Analysis. Department of Treasury and Economics, Toronto, January, 1971.

_____. The Honourable W. Darcy McKeough. Design for Development: A Policy Statement on the Northwestern Ontario Region. Toronto, August, 1971.

Ontario Economic Council. A Forest Policy for Ontario: A Report of the Ontario Economic Council. Toronto: Queen's Printer, February, 1970.

Reed, F.L.C. and Associates Ltd. Canada's Reserve Timber Supply: The Location, Delivered Cost and Product Suitability of Canada's Surplus Timber. Prepared for the Department of Industry, Trade and Commerce, Ottawa, March, 1973.

Science Council of Canada. Seeing the Forest and the Trees: A Report on Forest Resources Research. Ottawa: Queen's Printer, 1970.