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MISCELLANEOUS REPORT NO. 18

✓ COMMODITY DRAIN FROM FORESTS OF THE LAKE STATES ✓

1950 X

✓
By Arthur G. Horn, Forest Economist

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Lake States Forest Experiment Station

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Miscellaneous Report No. 18

COMMODITY DRAIN FROM FORESTS OF THE LAKE STATES - 1950

By Arthur G. Horn, Forest Economist^{1/}
Lake States Forest Experiment Station^{2/}

INTRODUCTION

Industries and public agencies frequently request data on forest products manufacture and timber drain. To meet these demands effectively and to provide estimates for forest surveys, the Station periodically prepares summaries such as presented here for 1950. Similar reports have been prepared each year since 1946.^{3/}

In using the data given in this report, one should keep in mind the standards and definitions used in compiling the information (see definitions).

BASIS FOR PRODUCTION STATISTICS

By means of a sample survey of representative sawmills, the Bureau of the Census collected and published regional lumber production statistics for 1950. For lack of state-wide figures, the Station applied production ratios to the regional figures to obtain a breakdown of the estimated quantity of lumber produced in Minnesota, Wisconsin, and Michigan. The Bureau of the Census state-wide lumber production statistics for 1947 with some adjustments for closure of several large mills during the interim were used to determine production ratios.

Origin by state and county of logs consumed by large mills in 1950 was also collected by the Bureau of the Census. The Station, in turn, obtained similar information from most of the medium-sized mills. From these data interstate log shipments for 1950 were determined.

State-wide lumber production estimates and interstate log shipments for 1950 were used as a basis for determining state-wide sawlog and saw-bolt production estimates.

^{1/} The author gratefully acknowledges the help from many owners and operators of primary wood-using establishments in the region who so kindly cooperated and furnished the basic information so necessary for this report.

^{2/} Maintained by the U. S. Department of Agriculture, Forest Service, in cooperation with the University of Minnesota, University Farm, St. Paul 1, Minnesota.

^{3/} Miscellaneous Report No. 7 (1946), Miscellaneous Report No. 9 (1947), Station Paper No. 20 (1948), and Miscellaneous Report No. 19 (1949).

For veneer, pulp distillation, excelsior, and cooperage industries, a complete canvass was made of all known plants early in 1951. The volume of logs and bolts received at these plants during the calendar year was used as a basis for production estimates.

For such minor items as piling, poles, hewn ties, round and split mine material, etc., production statistics were obtained by using results of a comprehensive survey made in 1947 and comparing with reliable production indexes for 1947-50; i.e., annual underground ore production by states, pole and piling receipts of several large distributors who handle most of the regional output. Because financial limitations precluded making special surveys, estimates for fuel wood, posts, and miscellaneous items were based largely on surveys made during the latter part of World War II. Some adjustments were made on the basis of more recent findings from wholesalers and distributors.

CONVERSION FACTORS

The Station has collected supplemental information on each product as to (1) percent of wood volume obtained from live, dead, and cull trees, and from by-product materials, and (2) proportion of volume cut from saw-timber and pole-timber trees. Gross volumes of individual products were determined from information furnished by industry. For example, stock records for posts, poles, and piling showed the number of pieces by length, top, and butt diameters. Such information made possible calculations of gross volume for each product. By incorporating these findings with data collected during a previous field survey (1936-37), a set of conversion and waste factors were prepared which are closely in line with present utilization standards of wood-using industries.

GENERAL LIMITATIONS OF DATA

The Forest Survey accuracy goal for timber drain estimates is ± 5 percent per billion cubic feet, which would permit a standard error of slightly more than 6 percent on the 1950 estimate for the Lake States. Because of the absence of an accurate survey for fuel wood for that year, the estimates presented here may not be within that limit. We feel, however, that the estimates are the best obtainable at this time and will serve a useful purpose. Figures for most products are within the proposed limits.

SURVEY DEFINITIONS

Commodity Production

The gross volume of a forest product made from any class of material from commercial or noncommercial forest lands. Production has been expressed in the following standard survey units: board-foot log scale, International 1/4-inch rule; cord (4x4x8 feet), rough-wood basis; number of pieces; and number of cubic feet (inside bark).

Cutting Drain

The net volume of timber removed from growing stock on commercial forest lands through commodity production and logging waste during the year, expressed in board feet, International 1/4-inch rule, and cubic feet (i.b.).

Drain from saw-timber trees.--The net volume (board feet, International 1/4-inch) of the log portion in softwood trees 9 inches and larger and hardwood trees 11 inches and larger, d.b.h., removed during logging operations. The cubic-foot volume shown includes both the saw-timber equivalent plus the volume in the tops of softwood trees to a 4-inch minimum.

This report differs slightly from those of 1946-1948 in that tops of hardwood saw-timber trees have not been included as drain for lack of sufficient data. Such material will be included in the future only when adequate data are available to make the calculations.

Drain from pole-timber trees.--The net volume in cubic feet (i.b.) of pole timber removed through cutting during the year. Included in this class are softwood trees from 5.0 to 8.9 inches and hardwood trees from 5.0 to 10.9 inches d.b.h. It includes cubic-foot volume found in the tree stems to a minimum top diameter of 4 inches (i.b.).

CUTTING DRAIN ON PRIMARY GROWING STOCK

1950

Table 1.--Net timber drain resulting from cutting sawlogs and saw bolts in the Lake States - 1950

Species and state	Net timber drain by size classes					Species and state	Net timber drain by size classes				
	M bd.ft.	M cu.ft.	Saw tbr.: l cu.ft.	Pole tbr.: l cu.ft.	Tops M cu.ft.		M bd.ft.	M cu.ft.	Saw tbr.: P cu.ft.	Pole tbr.: A cu.ft.	Tops M cu.ft.
White pine	62,410	14,400	10,000	1,670	2,730	Birch	49,640	10,060	7,700	2,360	--
Minnesota	12,980	3,000	2,080	350	570	Minnesota	2,100	430	330	100	--
Wisconsin	30,590	7,060	4,900	820	1,340	Wisconsin	9,730	1,970	1,510	460	--
Michigan	18,840	4,340	3,020	500	820	Michigan	37,810	7,660	5,860	1,890	--
Red pine	55,130	13,570	8,820	2,340	2,410	Basswood	34,560	6,990	5,350	1,640	--
Minnesota	23,700	5,850	3,800	1,010	1,040	Minnesota	7,960	1,610	1,230	380	--
Wisconsin	23,290	5,740	3,730	990	1,020	Wisconsin	14,150	2,860	2,190	670	--
Michigan	8,040	1,980	1,290	340	350	Michigan	12,450	2,520	1,930	590	--
Jack pine	48,760	16,270	7,820	6,320	2,130	Elm	48,510	9,830	7,520	2,310	--
Minnesota	34,990	11,680	5,610	4,540	1,530	Minnesota	10,310	2,090	1,600	490	--
Wisconsin	5,430	1,810	870	700	240	Wisconsin	17,530	3,560	2,720	840	--
Michigan	8,340	2,780	1,340	1,080	360	Michigan	20,650	4,180	3,200	980	--
Spruce	9,800	3,000	1,570	1,000	430	Beech	15,790	3,200	2,450	750	--
Minnesota	4,020	1,230	640	410	180	Minnesota	--	--	--	--	--
Wisconsin	1,100	340	180	110	50	Wisconsin	640	130	100	30	--
Michigan	4,680	1,430	750	480	200	Michigan	15,150	3,070	2,350	720	--
Balsam	5,590	1,710	890	580	240	Oak	80,810	16,370	12,520	3,850	--
Minnesota	3,070	940	490	320	130	Minnesota	9,400	1,900	1,450	450	--
Wisconsin	1,700	210	110	70	30	Wisconsin	49,120	9,950	7,610	2,340	--
Michigan	1,820	560	290	190	80	Michigan	22,290	4,520	3,460	1,060	--
Tamarack	3,010	920	480	310	130	Aspen	58,730	35,480	9,310	26,170	--
Minnesota	1,780	550	290	180	80	Minnesota	20,870	12,610	3,310	9,300	--
Wisconsin	1,970	290	150	100	40	Wisconsin	24,750	14,950	3,920	11,030	--
Michigan	260	80	40	30	10	Michigan	13,110	7,920	2,080	5,840	--
Cedar	7,180	2,210	1,150	740	320	Cottonwood	9,190	1,870	1,430	440	--
Minnesota	810	250	130	80	40	Minnesota	5,530	1,120	860	260	--
Wisconsin	1,630	500	260	170	70	Wisconsin	1,580	330	250	80	--
Michigan	4,740	1,460	760	490	210	Michigan	2,080	420	320	100	--
Hemlock	181,840	39,390	29,130	2,310	7,950	Miscellaneous	18,960	3,840	2,940	900	--
Minnesota	--	--	--	--	--	Minnesota	3,050	620	470	150	--
Wisconsin	58,320	12,630	9,340	740	2,550	Wisconsin	7,650	1,550	1,190	360	--
Michigan	123,520	26,760	19,790	1,570	5,400	Michigan	8,260	1,670	1,280	390	--
Softwood total	373,620	91,470	59,860	15,270	16,340	Hardwood total	479,750	120,780	74,560	46,220	--
Minnesota	81,350	23,500	13,040	6,890	3,570	Minnesota	61,040	20,750	9,530	11,220	--
Wisconsin	122,030	28,580	19,540	3,700	5,340	Wisconsin	167,460	43,870	26,040	17,830	--
Michigan	170,240	39,390	27,280	4,680	7,430	Michigan	251,250	56,160	38,990	17,170	--
Maple	163,560	33,140	25,340	7,800	--	All species	853,370	212,250	134,420	61,490	16,340
Minnesota	1,820	370	280	90	--	Minnesota	142,390	44,250	22,570	18,110	3,570
Wisconsin	42,290	8,570	6,550	2,020	--	Wisconsin	289,490	72,450	45,580	21,530	5,340
Michigan	119,450	24,200	18,510	5,690	--	Michigan	421,490	95,550	66,270	21,850	7,430

Table 3.--Net timber drain resulting from pulpwood cutting in the Lake States - 1950

Species and state	Net timber drain by size classes						Species and state	Net timber drain by size classes					
	Total			Tops				Total			Tops		
	M bd.ft.	M cu.ft.	N cu.ft.	M cu.ft.	N cu.ft.	M cu.ft.		M bd.ft.	M cu.ft.	N cu.ft.	M cu.ft.	N cu.ft.	
White pine	--	--	--	--	--	--	Birch	1,680	1,390	300	1,090	--	--
Minnesota	--	--	--	--	--	--	Minnesota	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	Wisconsin	1,220	980	220	760	--	--
Michigan	--	--	--	--	--	--	Michigan	460	410	80	330	--	--
Red pine	--	--	--	--	--	--	Basswood	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	Minnesota	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	Wisconsin	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	Michigan	--	--	--	--	--	--
Jack pine	13,100	27,590	2,110	24,960	520	Elm	770	750	130	620	--	--	--
Minnesota	7,320	14,910	1,180	13,440	290	Minnesota	--	--	--	--	--	--	--
Wisconsin	3,470	7,420	560	6,720	140	Wisconsin	310	340	50	290	--	--	--
Michigan	2,310	5,260	370	4,800	90	Michigan	460	410	80	330	--	--	--
Spruce	12,330	25,200	1,990	22,720	490	Beech	--	--	--	--	--	--	--
Minnesota	7,320	14,830	1,180	13,360	290	Minnesota	--	--	--	--	--	--	--
Wisconsin	1,160	2,480	190	2,240	50	Wisconsin	--	--	--	--	--	--	--
Michigan	3,850	7,890	620	7,120	150	Michigan	--	--	--	--	--	--	--
Balsam	12,330	25,350	1,980	22,880	490	Oak	1,530	1,320	270	1,050	--	--	--
Minnesota	5,010	10,050	810	9,040	200	Minnesota	--	--	--	--	--	--	--
Wisconsin	2,700	5,500	430	4,960	110	Wisconsin	310	240	50	190	--	--	--
Michigan	4,620	9,800	740	8,880	180	Michigan	1,220	1,080	220	860	--	--	--
Tamarack	--	80	--	80	--	Aspen	24,860	57,050	4,000	53,050	--	--	--
Minnesota	--	80	--	80	--	Minnesota	8,880	20,390	1,430	18,960	--	--	--
Wisconsin	--	--	--	--	--	Wisconsin	7,100	16,020	1,140	14,880	--	--	--
Michigan	--	--	--	--	--	Michigan	8,880	20,640	1,430	19,210	--	--	--
Cedar	--	--	--	--	--	Cottonwood	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	Minnesota	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	Wisconsin	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	Michigan	--	--	--	--	--	--	--
Hemlock	40,430	10,170	6,510	2,080	1,580	Miscellaneous	620	490	100	390	--	--	--
Minnesota	--	--	--	--	--	Minnesota	--	100	--	100	--	--	--
Wisconsin	14,630	3,650	2,360	720	570	Wisconsin	310	150	50	100	--	--	--
Michigan	25,800	6,520	4,150	1,360	1,010	Michigan	310	240	50	190	--	--	--
Softwood total	78,190	88,390	12,590	72,720	3,080	Hardwood total	30,680	61,980	5,010	56,970	--	--	--
Minnesota	19,650	39,870	3,170	35,920	780	Minnesota	8,880	20,490	1,430	19,060	--	--	--
Wisconsin	21,960	19,050	3,540	14,640	870	Wisconsin	9,860	18,120	1,610	16,510	--	--	--
Michigan	36,580	29,470	5,880	22,160	1,430	Michigan	11,940	23,370	1,970	21,400	--	--	--
Maple	1,220	980	210	770	--	All species	108,870	150,370	17,600	129,690	3,080	780	870
Minnesota	--	--	--	--	--	Minnesota	28,530	60,360	4,600	54,980	1,430	1,430	1,430
Wisconsin	610	390	100	290	--	Wisconsin	31,820	37,170	5,150	31,150	870	870	870
Michigan	610	590	110	480	--	Michigan	48,520	52,840	7,850	43,560	1,430	1,430	1,430

Table 4.--Net timber drain resulting from fuel wood cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	Total	Saw tbr.: M bd.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.		Total	Saw tbr.: M bd.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.
White pine	1,650	1,360	370	900	Birch	7,576	5,810	1,760	4,050
Minnesota	2,210	170	50	110	Minnesota	2,210	1,690	510	1,180
Wisconsin	960	790	210	530	Wisconsin	2,840	2,180	660	1,520
Michigan	480	400	110	260	Michigan	2,520	1,940	590	1,350
Red pine	350	290	70	200	Basswood	3,470	2,650	800	1,850
Minnesota	140	120	30	80	Minnesota	1,890	1,450	440	1,010
Wisconsin	140	120	30	80	Wisconsin	790	600	180	420
Michigan	70	50	10	40	Michigan	790	600	180	420
Jack pine	1,590	1,290	340	870	Elm	10,080	7,770	2,360	5,410
Minnesota	690	570	150	380	Minnesota	3,150	2,430	740	1,690
Wisconsin	830	670	180	450	Wisconsin	2,360	1,820	550	1,270
Michigan	70	50	10	40	Michigan	4,570	3,520	1,070	2,450
Spruce	490	410	100	270	Beech	1,260	970	300	670
Minnesota	280	230	60	150	Minnesota	--	--	--	--
Wisconsin	70	60	10	40	Wisconsin	160	120	40	80
Michigan	140	120	30	80	Michigan	1,100	850	260	590
Balsam	480	410	110	270	Oak	27,090	20,850	6,320	14,530
Minnesota	340	290	80	190	Minnesota	5,510	4,250	1,290	2,960
Wisconsin	70	70	20	40	Wisconsin	13,070	10,060	3,050	7,010
Michigan	70	50	10	40	Michigan	8,510	6,540	1,980	4,560
Tamarack	2,820	2,320	620	1,540	Aspen	20,630	15,880	4,810	11,070
Minnesota	2,130	1,750	470	1,160	Minnesota	9,290	7,160	2,170	4,990
Wisconsin	550	450	120	300	Wisconsin	5,040	3,870	1,170	2,700
Michigan	140	120	30	80	Michigan	6,300	4,850	1,470	3,380
Cedar	550	460	120	310	Ash	1,890	1,450	440	1,010
Minnesota	140	120	30	80	Minnesota	470	360	110	250
Wisconsin	340	290	80	190	Wisconsin	790	600	180	420
Michigan	70	50	10	40	Michigan	630	490	150	340
Hemlock	2,950	2,420	640	1,620	Miscellaneous	4,890	3,760	1,140	2,620
Minnesota	--	--	--	--	Minnesota	2,840	2,180	660	1,520
Wisconsin	1,990	1,630	430	1,090	Wisconsin	1,100	850	260	590
Michigan	960	790	210	530	Michigan	950	730	220	510
Softwood total	10,880	8,960	2,370	5,980	Hardwood total	90,120	69,320	21,010	48,310
Minnesota	3,930	3,250	870	2,150	Minnesota	35,680	19,760	5,990	13,770
Wisconsin	4,950	4,080	1,080	2,720	Wisconsin	31,190	23,970	7,260	16,710
Michigan	2,000	1,630	420	1,110	Michigan	33,250	25,590	7,760	17,830
Maple	13,240	10,180	3,080	7,100	All species	101,000	78,280	23,380	54,290
Minnesota	320	240	70	170	Minnesota	29,610	23,010	6,860	15,920
Wisconsin	5,040	3,870	1,170	2,700	Wisconsin	36,140	28,050	8,340	19,430
Michigan	7,880	6,070	1,840	4,230	Michigan	35,250	27,220	8,180	18,940

Table 5.--Net timber drain resulting from cutting piling in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	Total M bd.ft.	Saw tbr. M cu.ft.	Pole tbr. M cu.ft.	Tops M cu.ft.		Total M bd.ft.	Saw tbr. M cu.ft.	Pole tbr. M cu.ft.	Tops M cu.ft.
White pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	birch Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Red pine Minnesota Wisconsin Michigan	310 170 30 110	55 25 5 25	45 20 5 20	10 5 -- 5	Basswood Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Jack pine Minnesota Wisconsin Michigan	140 140 -- --	25 25 -- --	20 20 -- --	5 5 -- --	Elm Minnesota Wisconsin Michigan	380 -- -- --	55 -- -- --	55 -- -- --	-- -- -- --
Spruce Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Beech Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Balsam Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Oak Minnesota Wisconsin Michigan	140 -- -- --	20 -- -- --	20 -- -- --	-- -- -- --
Tamarack Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Aspen Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Cedar Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Ash Minnesota Wisconsin Michigan	15 -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Hemlock Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Miscellaneous Minnesota Wisconsin Michigan	15 -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Softwood total	450	80	65	15	Hardwood total	580	80	80	--
Minnesota	310	50	40	10	Minnesota	--	--	--	--
Wisconsin	30	5	5	--	Wisconsin	580	80	80	--
Michigan	110	25	20	5	Michigan	--	--	--	--
Maple Minnesota Wisconsin Michigan	30 -- 30 --	5 -- 5 --	5 -- 5 --	-- -- -- --	All species Minnesota Wisconsin Michigan	1,630 310 610 110	160 50 85 25	145 40 85 20	15 10 -- 5

Table 6.--Net timber drain resulting from chemical wood cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	Total		M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	Total
White pine	--	--	--	--	Birch	3,380	940	790	150
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	140	40	30	10
Michigan	--	--	--	--	Michigan	3,240	900	760	140
Red pine	--	--	--	--	Basewood	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Jack pine	--	--	--	--	Elm	140	40	30	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	140	40	30	10
Spruce	--	--	--	--	Beech	1,080	300	250	50
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	1,080	300	250	50
Balsam	--	--	--	--	Oak	140	40	30	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	140	40	30	10
Tamarack	--	--	--	--	Aspen	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Cedar	--	--	--	--	Ash	270	70	60	10
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	270	70	60	10
Hemlock	--	--	--	--	Miscellaneous	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Softwood total	--	--	--	--	Hardwood total	11,360	3,150	2,640	510
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	410	110	90	20
Michigan	--	--	--	--	Michigan	10,950	3,040	2,550	490
Maple	6,350	1,760	1,480	280	All species	11,360	3,150	2,640	510
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	270	70	60	10	Wisconsin	410	110	90	20
Michigan	6,080	1,690	1,420	270	Michigan	10,950	3,040	2,550	490

Table 7.--Net timber drain resulting from cutting excelsior bolts in the Lake States - 1950

Species and state	Net timber drain by size classes			Species and state	Net timber drain by size classes		
	Total M bd.ft. M cu.ft.	Saw tbr.: M cu.ft.	Pole tbr.: M cu.ft.		Total M bd.ft. M cu.ft.	Saw tbr.: M cu.ft.	Pole tbr.: M cu.ft.
White pine	--	--	--	Birch	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Red pine	--	--	--	baswood	40	330	10
Minnesota	--	--	--	Minnesota	--	--	320
Wisconsin	--	--	--	Wisconsin	30	250	10
Michigan	--	--	--	Michigan	10	80	80
Jack pine	--	--	--	Elm	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Spruce	--	--	--	beech	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Balsam	--	--	--	Oak	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Tamarack	--	--	--	Aspen	640	4,970	130
Minnesota	--	--	--	Minnesota	--	--	4,840
Wisconsin	--	--	--	Wisconsin	290	2,240	60
Michigan	--	--	--	Michigan	350	2,730	70
Cedar	--	--	--	Cottonwood	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Hemlock	--	--	--	Miscellaneous	--	--	--
Minnesota	--	--	--	Minnesota	--	--	--
Wisconsin	--	--	--	Wisconsin	--	--	--
Michigan	--	--	--	Michigan	--	--	--
Softwood total	--	--	--	Hardwood total	680	5,300	140
Minnesota	--	--	--	Minnesota	--	--	5,160
Wisconsin	--	--	--	Wisconsin	320	2,490	70
Michigan	--	--	--	Michigan	360	2,810	70
Maple	--	--	--	All species	680	5,300	140
Minnesota	--	--	--	Minnesota	--	--	5,160
Wisconsin	--	--	--	Wisconsin	320	2,490	70
Michigan	--	--	--	Michigan	360	2,810	70

Table 8.--Not timber drain resulting from fence post cutting in the Lake States - 1950

Species and state	Net timber drain by size classes			Net timber drain by size classes		
	Total	Saw tbr.	Pole tbr.	Total	Saw tbr.	Pole tbr.
	M bd.ft.	M cu.ft.	M cu.ft.	M bd.ft.	M cu.ft.	M cu.ft.
White pine	--	--	--	230	200	150
Minnesota	--	--	--	50	40	30
Wisconsin	--	--	--	90	80	60
Michigan	--	--	--	90	80	60
Red pine	450	400	280	--	--	--
Minnesota	360	310	220	--	--	--
Wisconsin	90	90	60	--	--	--
Michigan	--	--	--	--	--	--
Jack pine	860	770	530	410	340	250
Minnesota	630	560	390	50	40	30
Wisconsin	140	120	80	180	150	110
Michigan	90	90	60	180	150	110
Spruce	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--
Michigan	--	--	--	--	--	--
Balsam	90	90	60	12,060	9,810	7,400
Minnesota	90	90	60	2,700	2,200	1,660
Wisconsin	--	--	--	6,390	5,200	3,920
Michigan	--	--	--	2,970	2,410	1,820
Tamarack	640	570	390	1,260	1,030	780
Minnesota	270	240	170	630	520	390
Wisconsin	230	210	140	360	290	220
Michigan	140	120	80	270	220	170
Cedar	6,480	5,710	3,980	--	--	--
Minnesota	1,350	1,190	830	--	--	--
Wisconsin	1,080	950	660	--	--	--
Michigan	4,050	3,570	2,490	--	--	--
Hemlock	140	130	90	540	450	340
Minnesota	--	--	--	90	80	60
Wisconsin	90	90	60	270	220	170
Michigan	50	40	30	180	150	110
Softwood total	8,660	7,670	5,330	14,770	12,070	9,100
Minnesota	2,700	2,390	1,670	3,610	2,960	2,230
Wisconsin	1,630	1,460	1,000	7,380	6,020	4,540
Michigan	4,330	3,820	2,660	3,780	3,090	2,330
Maple	270	240	180	23,430	19,740	14,430
Minnesota	90	80	60	6,310	5,350	3,900
Wisconsin	90	80	60	9,010	7,480	5,540
Michigan	90	80	60	8,110	6,910	4,990

Table 9.--Net timber drain resulting from cutting poles in the Lake States - 1950

Species and state	Net timber drain by size classes				Net timber drain by size classes			
	Total M bd.ft.	Saw tbr.: M cu.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.	Total M bd.ft.	Saw tbr.: M cu.ft.	Pole tbr.: M cu.ft.	Tops M cu.ft.
White pine	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Jack pine	440	155	85	55	15	--	--	--
Minnesota	410	145	80	50	15	--	--	--
Wisconsin	30	10	5	5	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Spruce	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Balsam	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Cedar	2,860	1,040	590	340	110	--	--	--
Minnesota	1,510	550	310	180	60	--	--	--
Wisconsin	250	90	50	30	10	--	--	--
Michigan	1,100	400	230	130	40	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
Softwood total	3,300	1,195	675	395	125	--	--	--
Minnesota	1,920	695	390	230	75	--	--	--
Wisconsin	280	100	55	35	10	--	--	--
Michigan	1,100	400	230	130	40	--	--	--
Maple	--	--	--	--	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	--	--	--	--	--	--	--	--
Michigan	--	--	--	--	--	--	--	--
All species	3,300	1,195	675	395	125	--	--	--
Minnesota	1,920	695	390	230	75	--	--	--
Wisconsin	280	100	55	35	10	--	--	--
Michigan	1,100	400	230	130	40	--	--	--

Table 10.--Net timber drain resulting from hem-tie cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	A cu.ft.	:Saw tbr.: Pole tbr.: Tops		M bd.ft.	M cu.ft.	A cu.ft.	:Saw tbr.: Pole tbr.: Tops
White pine	--	--	--	--	Birch	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Red pine	--	--	--	--	Basswood	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Jack pine	--	--	--	--	Elm	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Spruce	5	--	--	--	Beech	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	5	--	--	--	Michigan	--	--	--	--
Balsam	--	--	--	--	Oak	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Tamarack	5	--	--	--	Aspen	--	--	--	--
Minnesota	5	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	--	--	--	--
Cedar	55	20	10	10	Cottonwood	--	--	--	--
Minnesota	5	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	50	20	10	10	Michigan	--	--	--	--
Hemlock	10	--	--	--	Miscellaneous	--	--	--	--
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	10	--	--	--	Michigan	--	--	--	--
Softwood total	75	20	10	10	Hardwood total	--	--	--	--
Minnesota	10	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	65	20	10	10	Michigan	--	--	--	--
Maple	--	--	--	--	All species	75	20	10	10
Minnesota	--	--	--	--	Minnesota	10	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	--	--	--	--	Michigan	65	20	10	10

Table 11.--Net timber drain resulting from mino timber cutting in the Lake States - 1950

Species and state	Net timber drain by size classes			Species and state	Net timber drain by size classes		
	M bd.ft.	M cu.ft.	:Saw tbr.: Pole tbr.: Tops		M bd.ft.	M cu.ft.	:Saw tbr.: Pole tbr.: Tops
White pine Minnesota Wisconsin Michigan	50 50 -- --	10 10 -- --	-- -- -- --	Birch Minnesota Wisconsin Michigan	2,060 20 200 1,840	490 -- 50 440	340 -- 30 310
Red pine Minnesota Wisconsin Michigan	220 220 -- --	70 70 -- --	10 10 -- --	Basswood Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --
Jack pine Minnesota Wisconsin Michigan	3,270 3,270 -- --	980 980 -- --	100 100 -- --	Elm Minnesota Wisconsin Michigan	520 160 40 320	120 40 10 70	90 30 10 50
Spruce Minnesota Wisconsin Michigan	20 -- -- 20	-- -- -- --	-- -- -- --	Beech Minnesota Wisconsin Michigan	380 -- -- 380	90 -- -- 90	60 -- -- 60
Balsam Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	Oak Minnesota Wisconsin Michigan	60 -- 20 40	10 -- -- 10	-- -- -- 10
Tamarack Minnesota Wisconsin Michigan	6,220 3,020 440 2,760	1,830 890 130 810	180 90 10 80	Aspen Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --
Cedar Minnesota Wisconsin Michigan	5,350 930 270 4,150	1,620 290 90 1,240	160 30 10 120	Ash Minnesota Wisconsin Michigan	290 290 -- --	70 70 -- --	50 50 -- --
Hemlock Minnesota Wisconsin Michigan	1,020 -- 30 990	300 -- -- 300	110 -- -- 30	Miscellaneous Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --
Softwood total	16,150	4,810	480	Hardwood total	10,010	2,380	710
Minnesota	7,490	2,240	230	Minnesota	580	140	40
Wisconsin	740	220	20	Wisconsin	600	140	40
Michigan	7,920	2,350	230	Michigan	8,830	2,100	630
Maple Minnesota Wisconsin Michigan	6,700 110 340 6,250	1,600 30 80 1,490	480 10 20 450	All species Minnesota Wisconsin Michigan	26,160 8,070 1,340 16,750	7,190 2,380 360 4,450	2,420 830 120 1,470

Table 12.--Net timber drain resulting from coopeage log cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.: M cu.ft.		M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.: M cu.ft.
White pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Birch Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Red pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Basswood Minnesota Wisconsin Michigan	140 90 50 --	20 10 10 --	20 10 10 --	-- -- -- --
Jack pine Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Elm Minnesota Wisconsin Michigan	230 230 -- --	40 40 -- --	40 40 -- --	-- -- -- --
Spruce Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Beech Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Balsam Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Oak Minnesota Wisconsin Michigan	1,720 410 1,310 --	260 60 200 --	260 60 200 --	-- -- -- --
Tamarack Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Aspen Minnesota Wisconsin Michigan	80 80 -- --	10 10 -- --	10 10 -- --	-- -- -- --
Cedar Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Cottonwood Minnesota Wisconsin Michigan	220 220 -- --	30 30 -- --	30 30 -- --	-- -- -- --
Hemlock Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Miscellaneous Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --
Softwood total Minnesota Wisconsin Michigan	-- -- -- --	-- -- -- --	-- -- -- --	-- -- -- --	Hardwood total Minnesota Wisconsin Michigan	2,690 1,330 1,360 --	410 200 210 --	410 200 210 --	-- -- -- --
Maple Minnesota Wisconsin Michigan	300 300 --	50 50 --	50 50 --	-- -- --	All species Minnesota Wisconsin Michigan	2,690 1,330 1,360 --	410 200 210 --	410 200 210 --	-- -- -- --

Table 13.--Net timber drain resulting from cutting miscellaneous rough forest products in the Lake States - 1950

Species and state	Net timber drain by size classes					Species and state	Net timber drain by size classes				
	M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.	Tops		M bd.ft.	M cu.ft.	Saw tbr.	Pole tbr.	Tops
White pine	540	210	90	90	30	Birch	970	230	160	70	--
Minnesota	180	70	30	30	10	Minnesota	780	190	130	60	--
Wisconsin	180	70	30	30	10	Wisconsin	140	30	20	10	--
Michigan	180	70	30	30	10	Michigan	50	10	10	--	--
Red pine	320	100	50	50	--	Basswood	600	180	120	60	--
Minnesota	140	40	20	20	--	Minnesota	300	80	50	30	--
Wisconsin	70	20	10	10	--	Wisconsin	270	70	50	20	--
Michigan	110	40	20	20	--	Michigan	90	30	20	10	--
Jack pine	680	230	110	100	20	Elm	300	80	50	30	--
Minnesota	290	100	50	40	10	Minnesota	--	--	--	--	--
Wisconsin	140	40	20	20	--	Wisconsin	--	--	--	--	--
Michigan	250	90	40	40	10	Michigan	300	80	50	30	--
Spruce	170	60	30	30	--	Beech	2,700	690	450	240	--
Minnesota	70	20	10	10	--	Minnesota	--	--	--	--	--
Wisconsin	40	20	10	10	--	Wisconsin	--	--	--	--	--
Michigan	60	20	10	10	--	Michigan	2,700	690	450	240	--
Balsam	440	170	80	70	20	Oak	440	100	70	30	--
Minnesota	180	70	30	30	10	Minnesota	50	10	10	--	--
Wisconsin	40	20	10	10	--	Wisconsin	90	10	10	--	--
Michigan	220	80	40	30	10	Michigan	300	80	50	30	--
Tamarack	170	60	30	30	--	Aspen	6,150	1,570	1,030	540	--
Minnesota	70	20	10	10	--	Minnesota	3,900	990	650	340	--
Wisconsin	40	20	10	10	--	Wisconsin	1,530	400	260	140	--
Michigan	60	20	10	10	--	Michigan	720	180	120	60	--
Cedar	2,230	760	370	310	80	Cottonwood	--	--	--	--	--
Minnesota	290	100	50	40	10	Minnesota	--	--	--	--	--
Wisconsin	500	170	80	70	20	Wisconsin	--	--	--	--	--
Michigan	1,440	490	240	200	50	Michigan	--	--	--	--	--
Hemlock	140	40	20	20	--	Miscellaneous	370	100	70	30	--
Minnesota	--	--	--	--	--	Minnesota	--	--	--	--	--
Wisconsin	70	20	10	10	--	Wisconsin	90	30	20	10	--
Michigan	70	20	10	10	--	Michigan	280	70	50	20	--
Softwood total	4,690	1,630	780	700	150	Hardwood total	14,410	3,670	2,420	1,250	--
Minnesota	1,220	420	200	180	40	Minnesota	5,030	1,270	840	430	--
Wisconsin	1,080	380	180	170	30	Wisconsin	2,480	630	420	210	--
Michigan	2,390	830	400	350	80	Michigan	6,900	1,770	1,160	610	--
Maple	2,820	720	470	250	--	All species	19,100	5,300	3,200	1,950	150
Minnesota	--	--	--	--	--	Minnesota	6,250	1,690	1,040	610	40
Wisconsin	360	90	60	30	--	Wisconsin	3,360	1,010	600	380	30
Michigan	2,460	630	410	220	--	Michigan	9,590	2,600	1,560	960	80

Table 14.--Total net timber drain resulting from cutting in the Lake States - 1950

Species and state	Net timber drain by size classes				Species and state	Net timber drain by size classes			
	M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	M cu.ft.		M bd.ft.	M cu.ft.	Saw tbr.: Pole tbr.: Tops	M cu.ft.
White pine	65,110	16,060	10,540	2,660	Birch	84,060	22,000	13,970	8,030
Minnesota	13,450	3,255	2,175	490	Minnesota	5,300	2,370	1,000	1,370
Wisconsin	32,130	7,990	5,200	1,380	Wisconsin	18,520	5,980	3,130	2,850
Michigan	19,530	4,815	3,165	790	Michigan	60,240	13,650	9,840	3,810
Red pine	56,680	14,485	9,115	2,890	Basswood	51,110	12,300	8,190	4,110
Minnesota	24,730	6,415	3,980	1,350	Minnesota	13,740	3,710	2,270	1,440
Wisconsin	23,620	5,975	3,795	1,140	Wisconsin	20,220	4,720	3,200	1,520
Michigan	8,330	2,095	1,340	400	Michigan	17,150	3,870	2,720	1,150
Jack pine	68,840	47,310	11,195	33,185	Elm	74,270	21,145	12,365	8,780
Minnesota	47,740	28,970	7,750	19,190	Minnesota	15,350	4,860	2,640	2,220
Wisconsin	10,040	10,070	1,665	7,975	Wisconsin	27,520	7,065	4,465	2,600
Michigan	11,060	8,270	1,780	6,020	Michigan	31,400	9,220	5,260	3,960
Spruce	22,815	28,670	3,690	24,020	Beech	27,730	6,260	4,520	1,740
Minnesota	11,690	16,310	1,890	13,930	Minnesota	--	--	--	--
Wisconsin	2,370	2,900	390	2,400	Wisconsin	1,000	280	170	110
Michigan	8,755	9,460	1,410	7,690	Michigan	26,730	5,980	4,350	1,630
Balsam	18,930	27,730	3,080	23,860	Oak	127,780	49,370	22,500	28,870
Minnesota	8,690	11,440	1,430	9,640	Minnesota	18,430	8,480	3,410	5,070
Wisconsin	3,510	5,800	570	5,080	Wisconsin	72,950	26,070	12,610	13,460
Michigan	6,730	10,490	1,080	9,140	Michigan	36,400	14,820	6,480	8,340
Tamarack	12,865	5,780	2,250	3,010	Aspen	112,890	116,670	19,630	97,040
Minnesota	7,275	3,530	1,300	1,920	Minnesota	43,880	41,780	7,740	34,040
Wisconsin	2,230	1,100	400	600	Wisconsin	39,380	38,350	6,670	31,680
Michigan	3,360	1,150	550	490	Michigan	29,630	36,540	5,220	31,320
Cedar	24,705	11,820	4,430	6,260	Ash	11,875	3,490	2,010	1,480
Minnesota	5,035	2,500	950	1,310	Minnesota	6,510	1,580	1,050	530
Wisconsin	4,070	2,090	740	1,150	Wisconsin	2,385	930	430	500
Michigan	15,600	7,230	2,740	3,800	Michigan	2,980	980	530	450
Hemlock	228,300	52,790	36,780	6,230	Miscellaneous	28,120	9,080	4,790	4,290
Minnesota	--	--	--	--	Minnesota	6,460	3,060	1,230	1,830
Wisconsin	75,130	18,020	12,160	2,620	Wisconsin	10,080	2,910	1,670	1,240
Michigan	153,170	34,770	24,620	3,610	Michigan	11,580	3,110	1,890	1,220
Softwood total	498,245	274,645	81,380	102,115	Hardwood total	745,655	294,260	124,950	169,310
Minnesota	118,610	72,420	19,475	47,830	Minnesota	112,920	66,700	19,870	46,830
Wisconsin	153,100	53,945	24,920	22,345	Wisconsin	250,425	100,990	41,820	59,170
Michigan	226,535	78,280	36,685	31,940	Michigan	382,310	126,570	63,260	63,310
Maple	227,820	53,945	36,975	16,970	All species	1,243,900	498,905	206,730	271,425
Minnesota	3,250	660	530	330	Minnesota	231,530	139,120	39,345	94,660
Wisconsin	58,370	14,685	9,475	5,210	Wisconsin	403,525	154,935	66,740	81,515
Michigan	166,200	38,400	26,970	11,430	Michigan	608,845	204,850	99,945	95,250
									21,450
									5,115
									6,680
									9,655

FOREST PRODUCTS HARVESTED

IN THE LAKE STATES

1950

Table 15.--Sawlog and saw-bolt production in the Lake States - 1950

Species: Volume cut and destination and : origin : Total : Minn. : Wis. : Mich.					Species: Volume cut and destination and : origin : Total : Minn. : Wis. : Mich.				
M bd.ft., Int'l. 1/4-inch					M bd.ft., Int'l. 1/4-inch				
W. pine	67,326	13,999	33,582	19,745	Elm	57,067	12,029	21,524	23,514
Minn.	13,999	13,999	--	--	Minn.	12,129	12,029	100	--
Wis.	33,002	--	33,002	--	Wis.	20,644	--	20,644	--
Mich.	20,325	--	580	19,745	Mich.	24,294	--	780	23,514
Red pine	62,843	27,065	26,728	9,050	Beech	18,582	--	956	17,626
Minn.	27,065	27,065	--	--	Minn.	--	--	--	--
Wis.	26,598	--	26,598	--	Wis.	756	--	756	--
Mich.	9,180	--	130	9,050	Mich.	17,826	--	200	17,626
Jack pine	72,829	52,264	8,224	12,341	Oak	95,073	10,753	58,383	25,937
Minn.	52,264	52,264	--	--	Minn.	11,053	10,753	300	--
Wis.	8,104	--	8,104	--	Wis.	57,793	--	57,793	--
Mich.	12,461	--	120	12,341	Mich.	26,227	--	290	25,937
Spruce	13,595	5,575	1,617	6,403	Aspen	145,385	52,668	60,202	32,515
Minn.	5,575	5,575	--	--	Minn.	51,668	51,668	--	--
Wis.	1,527	--	1,527	--	Wis.	61,262	1,000	59,162	1,100
Mich.	6,493	--	90	6,403	Mich.	32,455	--	1,040	31,415
Balsam	7,741	4,252	990	2,499	Ctnwd.	10,819	6,510	1,862	2,447
Minn.	4,252	4,252	--	--	Minn.	6,510	6,510	--	--
Wis.	970	--	970	--	Wis.	1,862	--	1,862	--
Mich.	2,519	--	20	2,499	Mich.	2,447	--	--	2,447
Tamarack	4,166	2,469	1,342	355	Ash	17,272	3,339	7,880	6,053
Minn.	2,469	2,469	--	--	Minn.	3,339	3,339	--	--
Wis.	1,342	--	1,342	--	Wis.	7,645	--	7,620	25
Mich.	355	--	--	355	Mich.	6,288	--	260	6,028
Cedar	9,960	1,120	2,322	6,518	Hickory	673	--	114	559
Minn.	1,120	1,120	--	--	Minn.	--	--	--	--
Wis.	2,262	--	2,262	--	Wis.	114	--	114	--
Mich.	6,578	--	60	6,518	Mich.	559	--	--	559
Hemlock	185,835	--	63,930	121,905	Cherry	854	16	65	773
Minn.	--	--	--	--	Minn.	16	16	--	--
Wis.	59,600	--	59,300	300	Wis.	65	--	65	--
Mich.	126,235	--	4,630	121,605	Mich.	773	--	--	773
Softwd.					Walnut	249	18	24	207
total	424,295	106,744	138,735	178,816	Minn.	18	18	--	--
Minn.	106,744	106,744	--	--	Wis.	24	--	24	--
Wis.	133,405	--	133,105	300	Mich.	207	--	--	207
Mich.	184,146	--	5,630	178,516	Misc.	3,255	219	1,149	1,887
Maple	192,423	1,744	60,802	129,877	Minn.	219	219	--	--
Minn.	2,144	1,744	400	--	Wis.	1,149	--	1,149	--
Wis.	49,752	--	49,502	250	Mich.	1,887	--	--	1,887
Mich.	140,527	--	10,900	129,627	Hardwd.				
Birch	58,404	2,472	17,652	38,280	total	640,715	98,431	248,635	293,649
Minn.	2,472	2,472	--	--	Minn.	98,931	97,431	1,500	--
Wis.	11,452	--	11,452	--	Wis.	229,165	1,000	226,765	1,400
Mich.	44,480	--	6,200	38,280	Mich.	312,619	--	20,370	292,249
Basswood	40,659	8,663	18,022	13,974	All				
Minn.	9,363	8,663	700	--	species	1,065,010	205,175	387,370	472,465
Wis.	16,647	--	16,622	25	Minn.	205,675	204,175	1,500	--
Mich.	14,649	--	700	13,949	Wis.	362,570	1,000	359,870	1,700
					Mich.	496,765	--	26,000	470,765

Table 16.--Production of logs and bolts for veneer industry in the Lake States
1950

Species and origin	Volume cut and destination					Heading stock	Imports	
	Total	Minn.	Wis.	Mich.	Other U. S.		Other U. S.	Foreign Canada
	M bd.ft.,	Int'l 1 1/4-inch rule				Standard cords	M bd.ft.	
							Int'l 1 1/4-inch	
White pine	2,134	28	411	1,695	--	--	--	21
Minnesota	28	28	--	--	--	--	--	--
Wisconsin	379	--	379	--	--	--	--	7
Michigan	1,727	--	32	1,695	--	--	--	14
Maple	31,312	37	17,656	13,603	16	1,847	147	1,661
Minnesota	581	37	544	--	--	--	--	--
Wisconsin	8,677	--	8,653	24	--	1,347	106	621
Michigan	22,054	--	8,459	13,579	16	500	41	1,040
Birch	17,523	53	10,888	6,582	--	80	6	11,740
Minnesota	133	53	58	22	--	--	--	--
Wisconsin	3,931	--	3,378	53	--	80	--	9,918
Michigan	13,459	--	6,952	6,507	--	--	6	1,822
Basswood	11,093	631	8,897	1,565	--	4,134	372	68
Minnesota	3,269	631	2,605	33	--	351	--	--
Wisconsin	4,327	--	4,293	34	--	2,904	344	34
Michigan	3,497	--	1,999	1,498	--	879	28	34
Elm	11,978	198	8,307	3,434	39	2,039	325	262
Minnesota	1,376	198	1,178	--	--	--	--	--
Wisconsin	6,143	--	6,103	40	--	1,539	268	27
Michigan	4,459	--	1,026	3,394	39	500	57	235
Beech	6,160	--	777	5,383	--	--	--	--
Minnesota	--	--	--	--	--	--	--	--
Wisconsin	182	--	182	--	--	--	--	--
Michigan	5,978	--	595	5,383	--	--	--	--
Oak	3,564	--	2,727	717	120	50	334	326
Minnesota	336	--	321	15	--	--	--	--
Wisconsin	2,351	--	2,080	271	--	50	198	196
Michigan	877	--	326	431	120	--	136	130
Aspen	239	190	49	--	--	8,231	--	8
Minnesota	190	190	--	--	--	814	--	--
Wisconsin	48	--	48	--	--	7,417	--	--
Michigan	1	--	1	--	--	--	--	8
Ash	1,168	18	997	148	5	--	3	2
Minnesota	44	18	23	3	--	--	--	--
Wisconsin	451	--	447	4	--	--	3	2
Michigan	673	--	527	141	5	--	--	--
Walnut	391	--	5	--	386	--	--	--
Minnesota	44	--	--	--	44	--	--	--
Wisconsin	5	--	5	--	--	--	--	--
Michigan	342	--	--	--	342	--	--	--
Other 2/	1,025	176	320	525	4	89	247	172
Minnesota	366	176	190	--	--	18	--	--
Wisconsin	158	--	130	28	--	71	5	172
Michigan	501	--	--	497	4	--	242	--
All species	86,587	1,331	51,034	33,652	570	16,470	1,434	14,260
Minnesota	6,367	1,331	4,919	73	44	1,183	--	--
Wisconsin	26,652	--	26,198	454	--	13,408	924	10,977
Michigan	53,568	--	19,917	33,125	526	1,879	510	3,283
1/ Hemlock								
2/ Cottonwood, sycamore, and yellow poplar.								

Table 17.--Pulpwood production and imports in the Lake States - 1950

Species and origin	Volume cut and destination						Imports	
	Total	Minn.	Wis.	Mich.	Other U.S.	Other U.S.	Foreign U.S.	Canada
Thousand standard cords, rough wood basis								
Pine	346	124	166	56	--	49		92
Minnesota	187	124	60	3	--	--		54
Wisconsin	93	--	93	--	--	49		28
Michigan	66	--	13	53	--	--		10
Spruce	316	84	202	30	--	13		322
Minnesota	186	84	102	--	--	--		25
Wisconsin	31	--	31	--	--	13		226
Michigan	99	--	69	30	--	--		71
Balsam	318	41	235	42	--	--		21
Minnesota	126	41	85	--	--	--		--
Wisconsin	69	--	69	--	--	--		3
Michigan	123	--	81	42	--	--		18
Tamarack	1	1	--	--	--	3		--
Minnesota	1	1	--	--	--	--		--
Wisconsin	--	--	--	--	--	3		--
Michigan	--	--	--	--	--	--		--
Hemlock	131	--	91	40	--	--		--
Minnesota	--	--	--	--	--	--		--
Wisconsin	47	--	47	--	--	--		--
Michigan	84	--	44	40	--	--		--
Sfwd. total	1,112	250	694	168	--	65		435
Minnesota	500	250	247	3	--	--		79
Wisconsin	240	--	240	--	--	65		257
Michigan	372	--	207	165	--	--		99
Birch	11	--	10	1	--	--		--
Minnesota	--	--	--	--	--	--		--
Wisconsin	6	--	6	--	--	--		--
Michigan	5	--	4	1	--	--		--
Aspen	694	235	387	65	7	--		55
Minnesota	248	226	22	--	--	--		32
Wisconsin	195	9	186	--	--	--		1
Michigan	251	--	179	65	7	--		22
Misc. hwdws.	49	1	21	27	--	--		--
Minnesota	1	1	--	--	--	--		--
Wisconsin	20	--	20	--	--	--		--
Michigan	28	--	1	27	--	--		--
Hwd. total	754	236	418	93	7	--		55
Minnesota	249	227	22	--	--	--		32
Wisconsin	221	9	212	--	--	--		1
Michigan	284	--	184	93	7	--		22
Slabs, etc.	7	--	7	--	--	--		--
Minnesota	--	--	--	--	--	--		--
Wisconsin	7	--	7	--	--	--		--
Michigan	--	--	--	--	--	--		--
All species	1,873	486	1,119	261	7	65		490
Minnesota	749	477	269	3	--	--		111
Wisconsin	468	9	459	--	--	65		258
Michigan	656	--	391	258	7	--		121

Table 18.—Production fuel wood, chemical wood, excelsior bolts
in the Lake States - 1950

Species and origin	Volume cut <u>1/</u>			Species and origin	Volume cut <u>1/</u>		
	Fuel wood	Chemical wood	Excelsior		Fuel wood	Chemical wood	Excelsior
	M standard cords				M standard cords		
White pine	120	--	--	Birch	240	25	--
Minnesota	15	--	--	Minnesota	70	--	--
Wisconsin	70	--	--	Wisconsin	90	1	--
Michigan	35	--	--	Michigan	80	24	--
Red pine	25	--	--	Basswood	110	--	4
Minnesota	10	--	--	Minnesota	60	--	--
Wisconsin	10	--	--	Wisconsin	25	--	3
Michigan	5	--	--	Michigan	25	--	1
Jack pine	115	--	--	Elm	320	1	--
Minnesota	50	--	--	Minnesota	100	--	--
Wisconsin	60	--	--	Wisconsin	75	--	--
Michigan	5	--	--	Michigan	145	1	--
Spruce	35	--	--	Beech	40	8	--
Minnesota	20	--	--	Minnesota	--	--	--
Wisconsin	5	--	--	Wisconsin	5	--	--
Michigan	10	--	--	Michigan	35	8	--
Balsam	35	--	--	Oak	860	1	--
Minnesota	25	--	--	Minnesota	175	--	--
Wisconsin	5	--	--	Wisconsin	415	--	--
Michigan	5	--	--	Michigan	270	1	--
Tamarack	205	--	--	Aspen	655	--	60
Minnesota	155	--	--	Minnesota	295	--	(2/)
Wisconsin	40	--	--	Wisconsin	160	--	27
Michigan	10	--	--	Michigan	200	--	33
Cedar	40	--	--	Ash	60	2	--
Minnesota	10	--	--	Minnesota	15	--	--
Wisconsin	25	--	--	Wisconsin	25	--	--
Michigan	5	--	--	Michigan	20	2	--
Hemlock	215	--	--	Miscellaneous	155	(2/)	--
Minnesota	--	--	--	Minnesota	90	--	--
Wisconsin	145	--	--	Wisconsin	35	--	--
Michigan	70	--	--	Michigan	30	(2/)	--
Sfwd. total	790	--	--	Hdwd. total	2,860	84	64
Minnesota	285	--	--	Minnesota	815	--	(2/)
Wisconsin	360	--	--	Wisconsin	990	3	30
Michigan	145	--	--	Michigan	1,055	81	34
Maple	420	47	--	All species	3,650	84	64
Minnesota	10	--	--	Minnesota	1,100	--	(2/)
Wisconsin	160	2	--	Wisconsin	1,350	3	30
Michigan	250	45	--	Michigan	1,200	81	34

1/ Excludes slabwood, veneer cores, etc.

2/ Less than 1 M cords.

Table 19.--Production of miscellaneous piece products
in the Lake States - 1950

Species :	:	:	:	:	Species :	:	:	:	:
and :	Piling :	Poles :	Posts :	Hewn :	and :	Piling :	Poles :	Posts :	Hewn :
origin :	:	:	:	ties :	origin :	:	:	:	ties :
Thousand pieces					Thousand pieces				
White pine	--	--	--	--	Maple	.2	--	300	--
Minnesota	--	--	--	--	Minnesota	--	--	100	--
Wisconsin	--	--	--	--	Wisconsin	.2	--	100	--
Michigan	--	--	--	--	Michigan	--	--	100	--
Red pine	1.8	--	500	--	Birch	--	--	250	--
Minnesota	1.0	--	400	--	Minnesota	--	--	50	--
Wisconsin	.2	--	100	--	Wisconsin	--	--	100	--
Michigan	.6	--	--	--	Michigan	--	--	100	--
Jack pine	1.0	16	950	--	Elm	3.0	--	450	--
Minnesota	1.0	15	700	--	Minnesota	--	--	50	--
Wisconsin	--	1	150	--	Wisconsin	3.0	--	200	--
Michigan	--	--	100	--	Michigan	--	--	200	--
Spruce	.1	--	--	1	Oak	1.0	--	13,400	--
Minnesota	--	--	--	--	Minnesota	--	--	3,000	--
Wisconsin	--	--	--	--	Wisconsin	1.0	--	7,100	--
Michigan	.1	--	--	1	Michigan	--	--	3,300	--
Balsam	--	--	100	--	Aspen	--	--	1,400	--
Minnesota	--	--	100	--	Minnesota	--	--	700	--
Wisconsin	--	--	--	--	Wisconsin	--	--	400	--
Michigan	--	--	--	--	Michigan	--	--	300	--
Tamarack	--	--	700	1	Ash	.1	--	--	--
Minnesota	--	--	300	1	Minnesota	--	--	--	--
Wisconsin	--	--	250	--	Wisconsin	.1	--	--	--
Michigan	--	--	150	--	Michigan	--	--	--	--
Cedar	--	104	7,200	15	Miscellaneous	.1	--	600	--
Minnesota	--	55	1,500	1	Minnesota	--	--	100	--
Wisconsin	--	9	1,200	--	Wisconsin	.1	--	300	--
Michigan	--	40	4,500	14	Michigan	--	--	200	--
Henlock	--	--	150	2	Hdwd. total	4.4	--	16,400	--
Minnesota	--	--	--	--	Minnesota	--	--	4,000	--
Wisconsin	--	--	100	--	Wisconsin	4.4	--	8,200	--
Michigan	--	--	50	2	Michigan	--	--	4,200	--
Sftwd. total	2.9	120	9,600	19	All species	7.3	120	26,000	19
Minnesota	2.0	70	3,000	2	Minnesota	2.0	70	7,000	2
Wisconsin	.2	10	1,800	--	Wisconsin	4.6	10	10,000	--
Michigan	.7	40	4,800	17	Michigan	.7	40	9,000	17

Table 20.--Production of mine timbers and other mine products
in the Lake States - 1950

Species : and origin :	Total :	Mine timbers :	Mine lagging : 1/	Other :	Species : and origin :	Total :	Mine timbers :	Mine lagging : 1/	Other :
Thousand cubic feet					Thousand cubic feet				
White pine	20	15	--	5	Maple	1,490	1,130	--	360
Minnesota	15	15	--	--	Minnesota	25	25	--	--
Wisconsin	--	--	--	--	Wisconsin	75	55	--	20
Michigan	5	--	--	5	Michigan	1,390	1,050	--	340
Red pine	75	70	--	5	Birch	460	390	--	70
Minnesota	75	70	--	5	Minnesota	5	5	--	--
Wisconsin	--	--	--	--	Wisconsin	45	30	--	15
Michigan	--	--	--	--	Michigan	410	355	--	55
Jack pine	1,090	790	170	130	Elm	115	105	--	10
Minnesota	1,090	790	170	130	Minnesota	35	35	--	--
Wisconsin	--	--	--	--	Wisconsin	10	10	--	--
Michigan	--	--	--	--	Michigan	70	60	--	10
Spruce	5	--	--	5	Beech	85	80	--	5
Minnesota	--	--	--	--	Minnesota	--	--	--	--
Wisconsin	--	--	--	--	Wisconsin	--	--	--	--
Michigan	5	--	--	5	Michigan	85	80	--	5
Tamarack	2,070	360	230	1,480	Oak	15	15	--	--
Minnesota	1,005	305	--	700	Minnesota	--	--	--	--
Wisconsin	145	10	5	130	Wisconsin	5	5	--	--
Michigan	920	45	225	650	Michigan	10	10	--	--
Cedar	1,785	--	1,770	15	Ash	65	65	--	--
Minnesota	310	--	310	--	Minnesota	65	65	--	--
Wisconsin	90	--	90	--	Wisconsin	--	--	--	--
Michigan	1,385	--	1,370	15	Michigan	--	--	--	--
Hemlock	340	305	5	30	Hdwd. total	2,230	1,785	--	445
Minnesota	--	--	--	--	Minnesota	130	130	--	--
Wisconsin	10	5	--	5	Wisconsin	135	100	--	35
Michigan	330	300	5	25	Michigan	1,965	1,555	--	410
Sftwd. total	5,385	1,540	2,175	1,670	All species	7,615	3,325	2,175	2,115
Minnesota	2,495	1,180	480	835	Minnesota	2,625	1,310	480	835
Wisconsin	245	15	95	135	Wisconsin	380	115	95	170
Michigan	2,645	345	1,600	700	Michigan	4,610	1,900	1,600	1,110

1/ Cribbing, poles, trestle logs, hewed shaft timbers, smelter brands, etc.

Table 21.--Production of cooperage logs and bolts in the Lake States - 1950

Species	Total	Volume cut by states		
		Minnesota	Wisconsin	Michigan
<u>M bd.ft. Int'l 1 1/4-inch rule</u>				
Maple	284	284	--	--
Basswood	136	89	47	--
Elm	219	219	--	--
Oak	1,622	385	1,237	--
Aspen	78	78	--	--
Cottonwood	207	207	--	--
Ash	--	--	--	--
All species	2,546	1,262	1,284	--

Table 22.--Production of miscellaneous products^{1/} in the Lake States - 1950

Species	:	Total	Volume cut by states		
			Minnesota	Wisconsin	Michigan
Thousand cubic feet					
White pine		150	50	50	50
Red pine		90	40	20	30
Jack pine		190	80	40	70
Spruce		50	20	10	20
Balsam		130	50	20	60
Tamarack		50	20	10	20
Cedar		620	80	140	400
Hemlock		40	--	20	20
Softwood total		1,320	340	310	670
Maple		630	--	80	550
Birch		210	170	30	10
Basswood		150	70	60	20
Elm		70	--	--	70
Beech		600	--	--	600
Oak		90	10	10	70
Aspen		1,360	860	340	160
Ash		10	--	--	10
Other		70	--	20	50
Hardwood total		3,190	1,110	540	1,540
ALL SPECIES		4,510	1,450	850	2,210

^{1/} Rough forest products used for manufacture of matches, clothespins, bowling pins, handles, woodenware, rustic furniture and fences, toys, shingles, lath, log cabin material, etc.