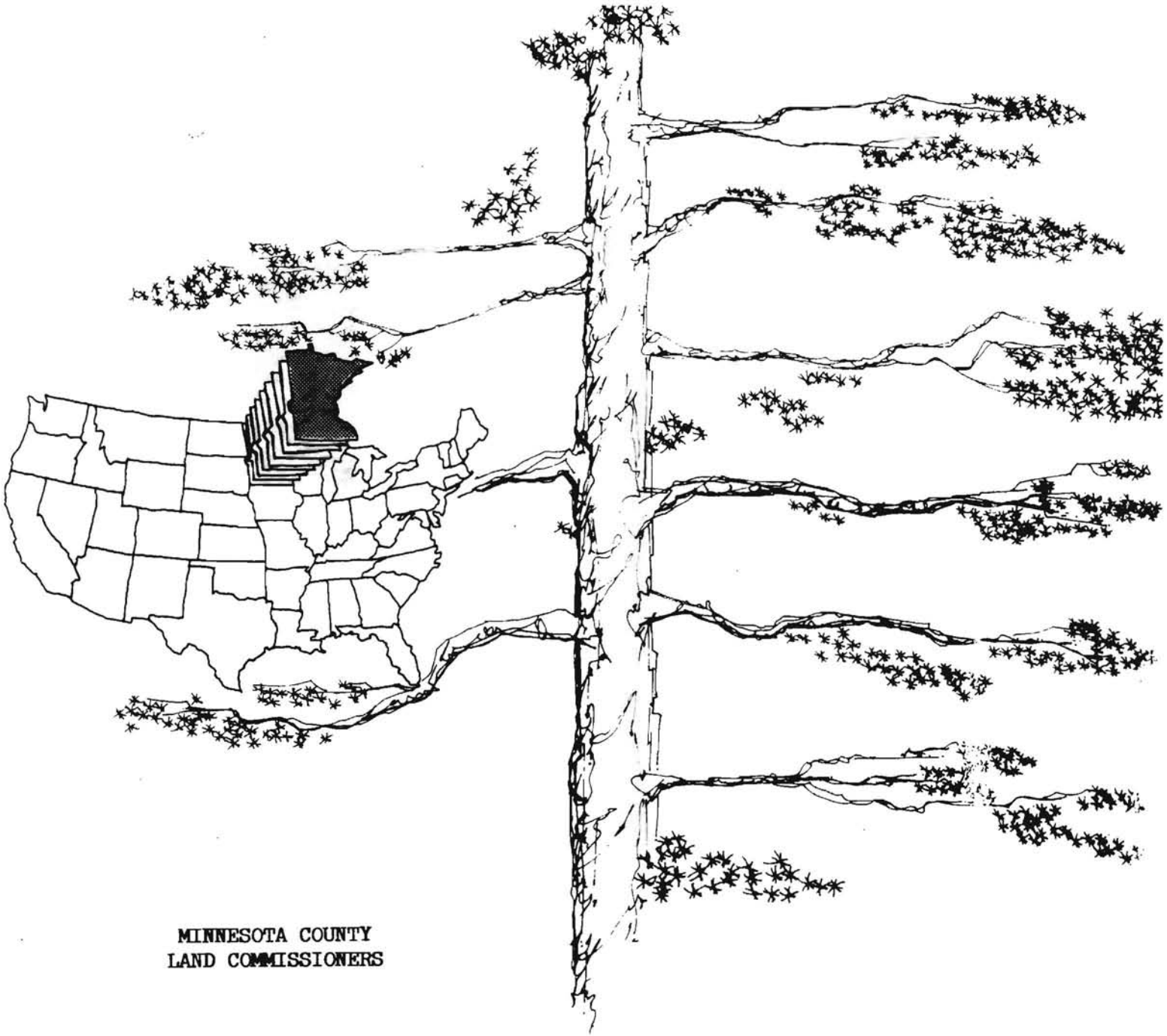


John Krantz

Minnesota's Forest Resources



**MINNESOTA COUNTY
LAND COMMISSIONERS**

Department of Natural Resources
Division of Forestry
June 1988

500 Lafayette Road - Box 44
St. Paul, Minnesota 55155-4044

PRESENTATION OUTLINE

DATA SOURCES

RESOURCE BASE

WOOD HARVEST

WOOD AVAILABILITY

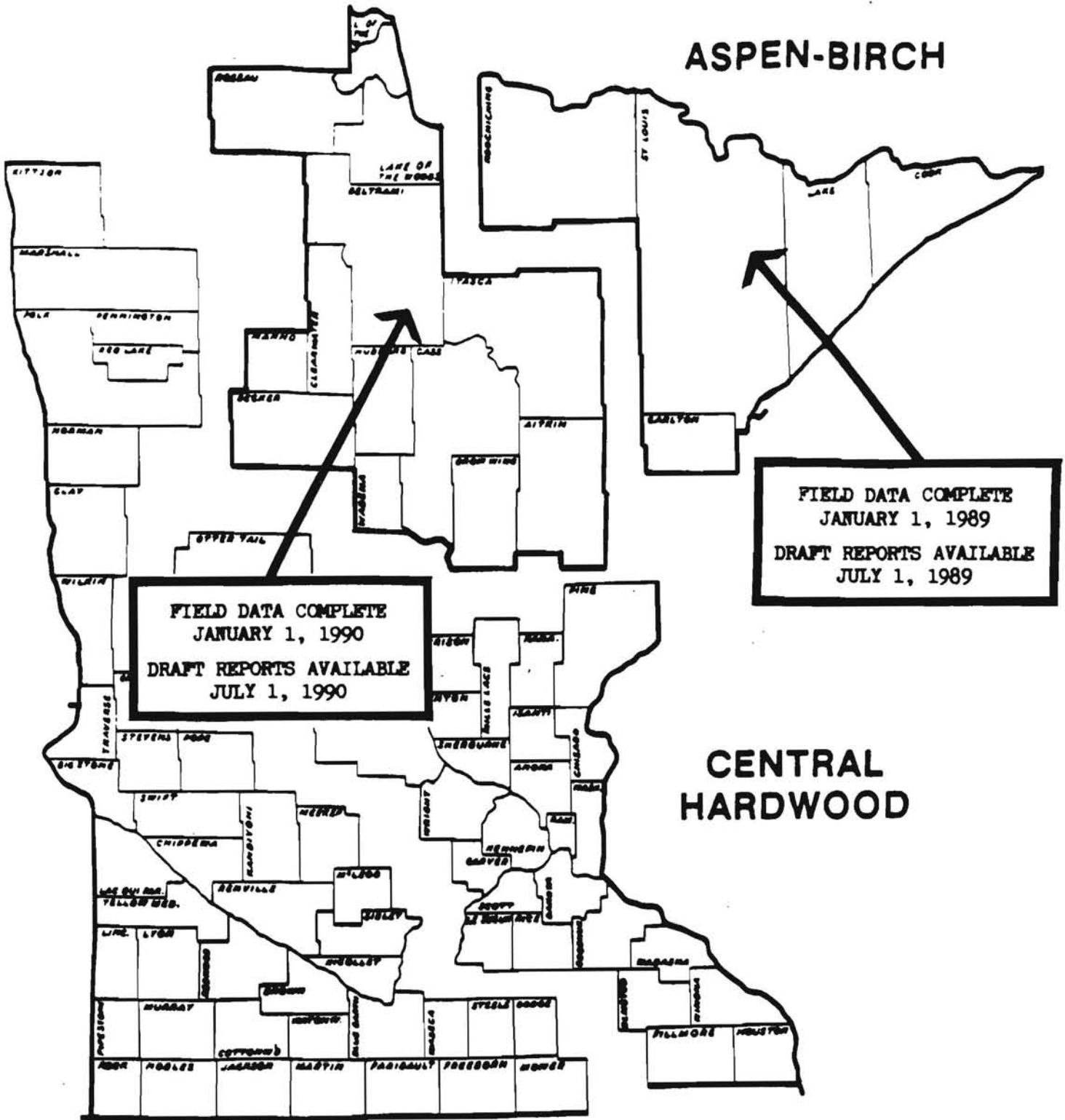
CONCERNS/NEEDS

Data Sources

- 1) Pulpwood**
 - from North Central Forest Experiment Station**
- 2) Sawlog & Other**
 - DNR Forestry survey**
- 3) Fuelwood**
 - DNR Forestry**
- 4) Statewide Forest Inventory (Phase I)**
 - NCFES**
 - DNR Forestry**

NORTHERN PINE

ASPEN-BIRCH



PRAIRIE

Figure 1.—Minnesota's four Forest Survey Units.

RECOMMENDED HARVEST

Method

Area Regulations

10 yr. Cut Determined

Oldest Harvested Forest

Procedure

Type Acres

Type Volume

Type Volume by Species

Total Species Volume (all Types)

Recommended Harvest and Actual Harvest - Minnesota 1987 -

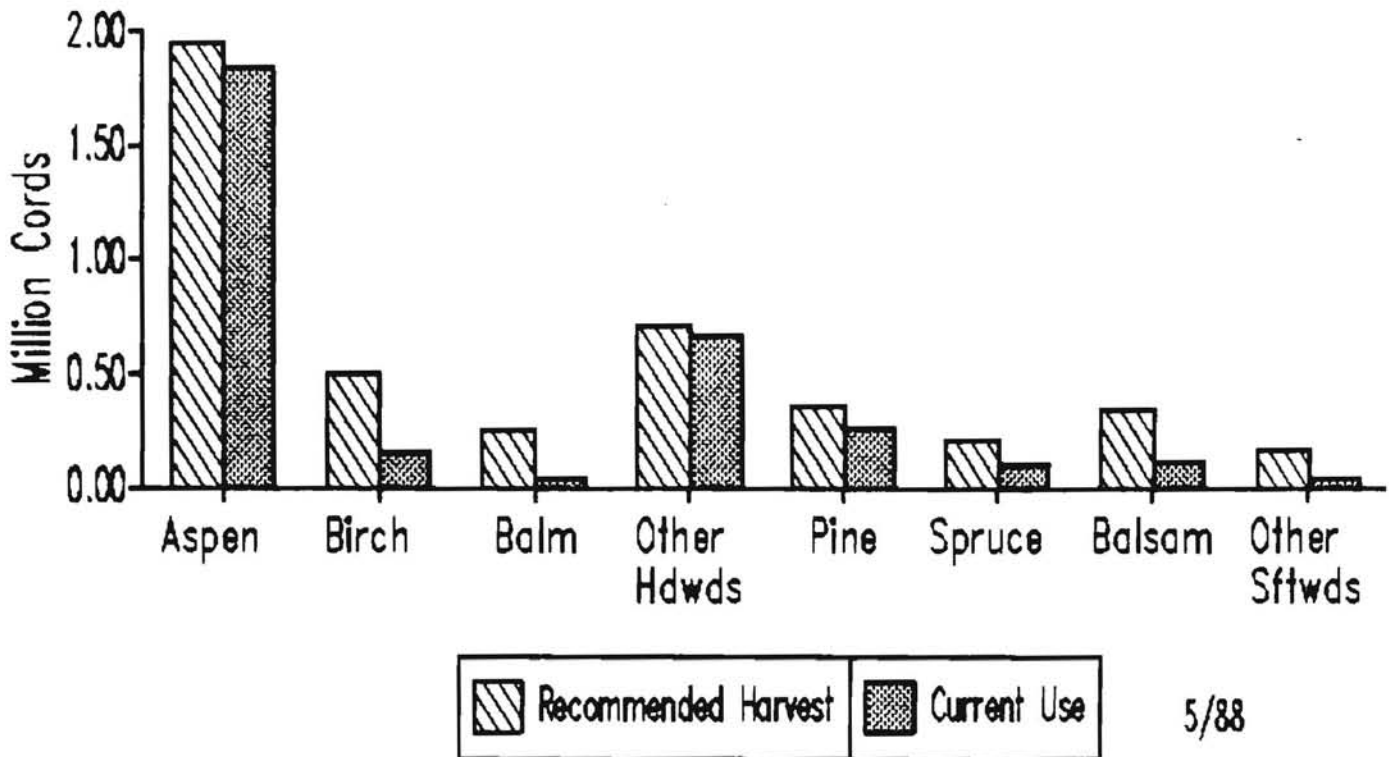
	(thousand cords)	
	Recommended	Actual
	<u>Harvest</u>	<u>Harvest</u>
Aspen	1,970	1,842
Birch	500	161
Balsam Poplar	260	48
Other Hardwoods	700	670
Pine	435	268
Spruce	215	106
Balsam	340	118
Other Softwoods	<u>170</u>	<u>40</u>
TOTAL	4,590	3,254

64705

Minnesota Wood Harvest 1987 Commercial Forest Land

<u>Product</u>	<u>Thousand Cords</u>
Pulp, Paper & Hardboard	986
Waferboard/OSB/Other	880
Lumber	478
Special Products	95
Export	115
Energy	700
TOTAL	<u>3,254</u>

MINNESOTA: RECOMMENDED TIMBER HARVEST and USE 1987



MINNESOTA - NEW AND EXPANDING WOOD USING INDUSTRIES 1979 - 1986

<u>NAME</u>	<u>PRODUCT</u>	<u>INVESTMENT</u>	<u>ADDITIONAL WOOD USE</u>
POTLATCH (CLOQUET)	PAPER	\$100 MILLION	30,000 CDS (ASP,SP,PINE)
POTLATCH (BEMIDJI)	OSB	\$ 40 MILLION	120,000 CDS (ASPEN)
POTLATCH (COOK)	OSB	\$ 40 MILLION	120,000 CDS (ASPEN)
NORTHWOOD PANELBOARD (BEMIDJI)	WAFERBOARD	\$ 45 MILLION	200,000 CDS (ASPEN)
CHAMPION INT'L (SARTELL)	PAPER	\$250 MILLION	60,000 CDS (ASP,SP,BAL)
BLANDIN (GRAND RAPIDS)	OSB	\$ 50 MILLION	150,000 CDS (ASPEN)
LOUISIANA PACIFIC (TWO HARBORS)	WAFERBOARD	\$ 30 MILLION	70,000 CDS (ASPEN)
LAKWOOD IND. (HIBBING)	VENEER FOR CHOPSTICKS	\$ 6 MILLION	18,000 CDS (ASPEN)

MINNESOTA - NEW AND EXPANDING WOOD USING INDUSTRIES 1987 - 1990

<u>NAME</u>	<u>PRODUCT</u>	<u>INVESTMENT</u>	<u>ADDITIONAL WOOD USE</u>
BLANDIN (GRAND RAPIDS)	PAPER	\$350 MILLION	138,000 CDS (ASP,SP,BAL)
POTLATCH (CLOQUET)	PAPER	\$100 MILLION	NO ADDITIONAL WOOD
LAKE SUPERIOR PAPER (PENTAIR/MP&L)	PAPER	\$404 MILLION	115-125,000 CDS (SP,BAL) MINNESOTA SHARE
INT'L BILTRITE (INT'L FALLS)	SHEATHING BOARD	\$ 12 MILLION	55-65,000 CDS (ASP,BALM)
POTLATCH (BEMIDJI)	OSB	\$ 35 MILLION	158,000 CDS (ASP)
MAC MILLAN BLOEDEL (DEERWOOD)	MODIFIED OSB	\$ 70 MILLION	200,000 CDS (ASP)

Major Pulpwood Industry Expansions 1991 - 1996

Announced:

- (1) **Boise Cascade** **340,000 cds.**
 :Paper Machine
 :Aspen, Balm of Gilead

Under Study:

- (2) **Blandin Paper Company** **150,000 cds.**
 :Paper Machine #7
 :Aspen, Spruce, Balsam
- (3) **Lake Superior Paper Industries** **140,000 cds.**
 :Paper Machine
 :Aspen, Spruce, Balsam
- (4) **Potlatch Corporation** **? ?**
 :Paper Pulp
 :Aspen, Pine, Birch, Maple, Basswood

INTERNAL USE ONLY

MINNESOTA PROJECTED HARVEST INCREASES

- 1987 to 1996 -

<u>YEAR</u>	<u>INDUSTRY</u>	<u>(IN THOUSAND CORDS)</u>			
		<u>ASPEN</u>	<u>BALSAM</u>	<u>SPRUCE</u>	<u>BIRCH</u>
<u>1987</u>		-----1840-----	-----118-----	-----106-----	-----161-----
	Lakewood Industries.....	10			
	International Biltrite.....	20			5
	Lake Superior Paper Industries.....		65	40	
	Diamond Brands.....				5
	Export to Wisconsin.....				10
<u>1988</u>		-----1870-----	-----183-----	-----146-----	-----181-----
	Blandin Paper.....	100	22	16	
<u>1989</u>		-----1970-----	-----205-----	-----162-----	-----181-----
	Potlatch.....	50			
	MacMillan Bloedel.....	50			
<u>1990</u>		-----2070-----	-----205-----	-----162-----	-----181-----
	Potlatch.....	110			
	MacMillan Bloedel.....	100			
	Boise Cascade.....	300	(plus 40 Balm of Gilead)		
	Export to Scandinavia.....				80
	Increased Sawlogs.....				20
<u>1991</u>		-----2580-----	-----205-----	-----162-----	-----281-----
	MacMillan Bloedel.....	50			
	Under Consideration (two industries).....	150	60	80	
<u>1992</u>		-----2780-----	-----265-----	-----242-----	-----281-----
	Under Consideration (one industry).....	100			150
	(also pine, maple, basswood)				
<u>1996</u>		-----2880-----	-----265-----	-----242-----	-----431-----

**Current and Projected Wood Harvest
- Minnesota Statewide -
(in thousand cords)**

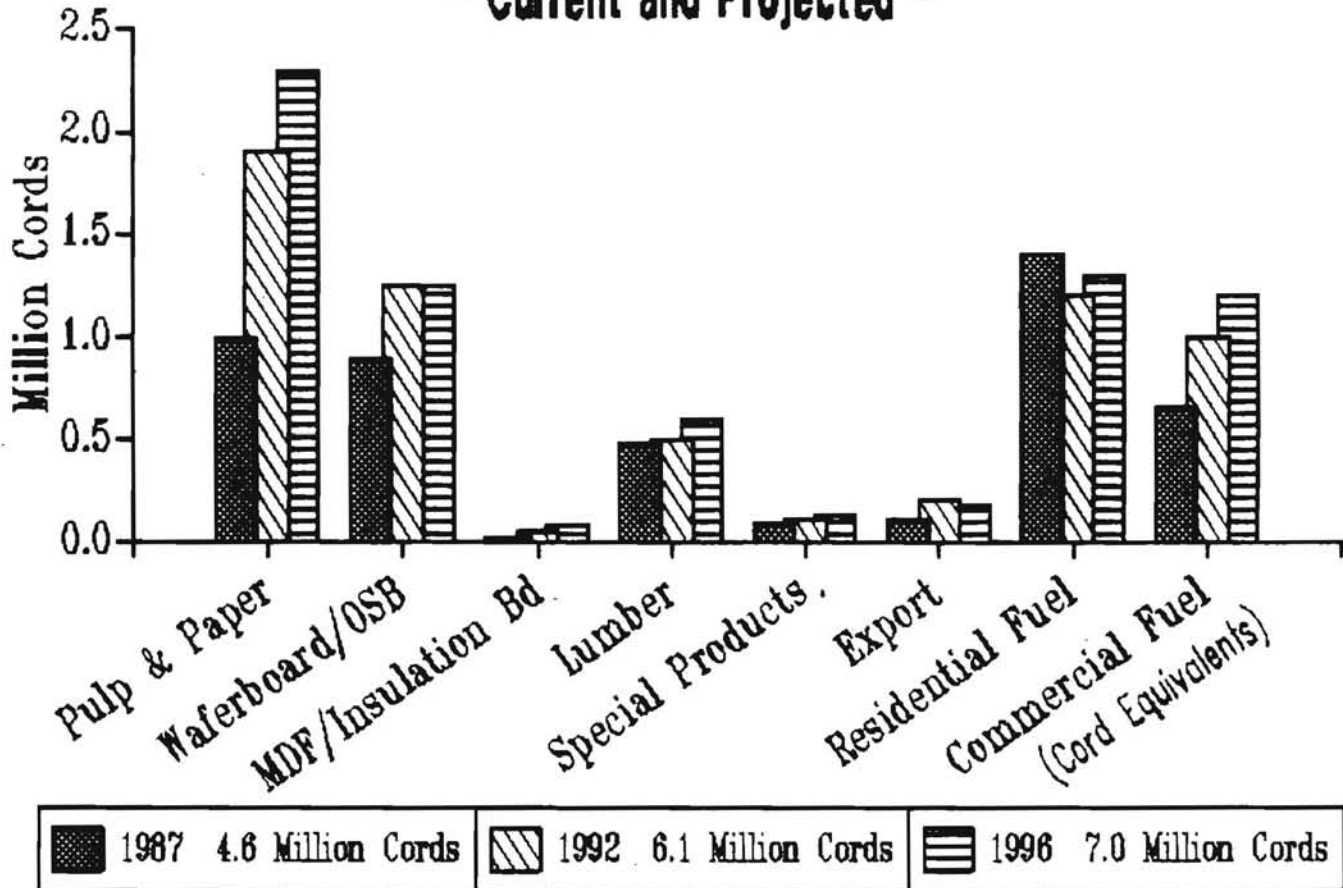
<u>Species</u>	<u>1987</u>	<u>1990</u>	<u>1992</u>	<u>1996</u>
Aspen	1842	2070	2780	2930
Spruce	106	162	242	242
Balsam	118	205	265	265
Balm	48	50	100	100
Birch	161	181	281	461
Pine	268	268	268	343
Tamarack	14	14	14	14

MINNESOTA WOOD HARVEST AND USE - CURRENT AND PROJECTED -

<u>PRODUCT</u>	1987 <u>CURRENT</u> (CORDS)	1992 <u>PROJECTED</u> (CORDS)	1996 <u>PROJECTED</u> (CORDS)
PULP & PAPER, HARDBOARD	986,000	1,860,000	2,285,000
WAFERBOARD/OSB	890,000	1,250,000	1,250,000
MDF/PARTICLEBOARD/ INSULATION BOARD	20,000	45,000	85,000
LUMBER	478,000	500,000	600,000
SPECIAL PRODUCTS	95,000	110,000	130,000
EXPORT	115,000	205,000	170,000
RESIDENTIAL FUEL*	1,400,000	1,200,000	1,300,000
COMMERCIAL FUEL*	<u>650,000</u>	<u>1,000,000</u>	<u>1,200,000</u>
TOTAL	4,634,000	6,170,000	7,020,000

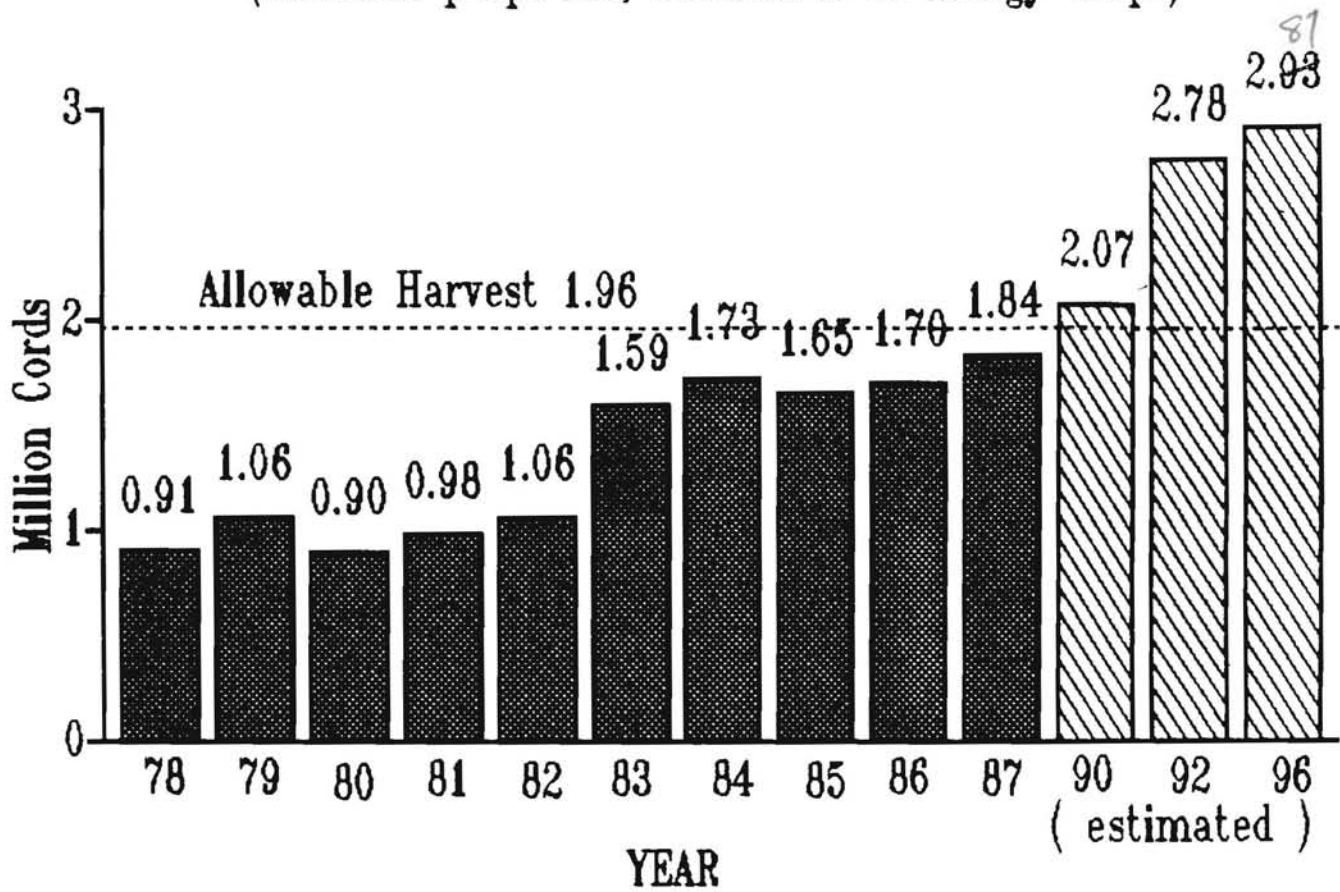
* APPROXIMATELY 1/3 FUEL USE HARVESTED FROM GROWING STOCK.
COMMERCIAL FUEL MEASURED IN CORD EQUIVALENTS.
MINNESOTA'S LARGEST FOREST RESOURCE USERS.

MINNESOTA WOOD HARVEST and USE - Current and Projected -



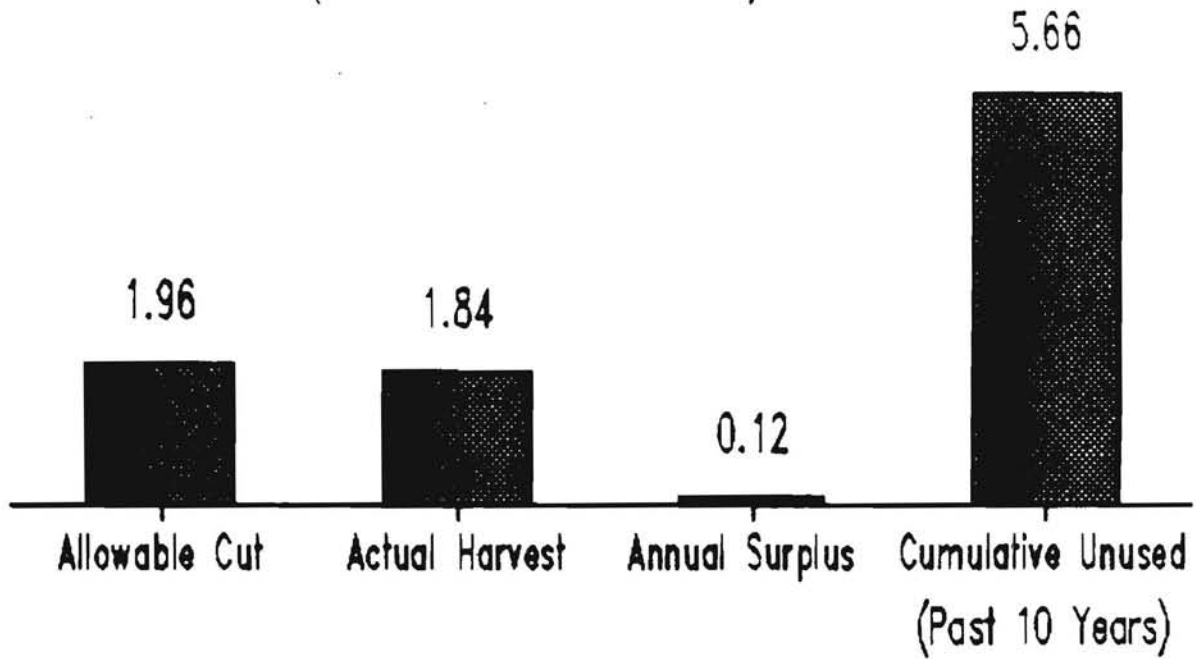
5/1988

ASPEN HARVEST from MINNESOTA
 (includes pulpwood, sawtimber & energy chips)



MINNESOTA ASPEN RESOURCE and USE - 1987

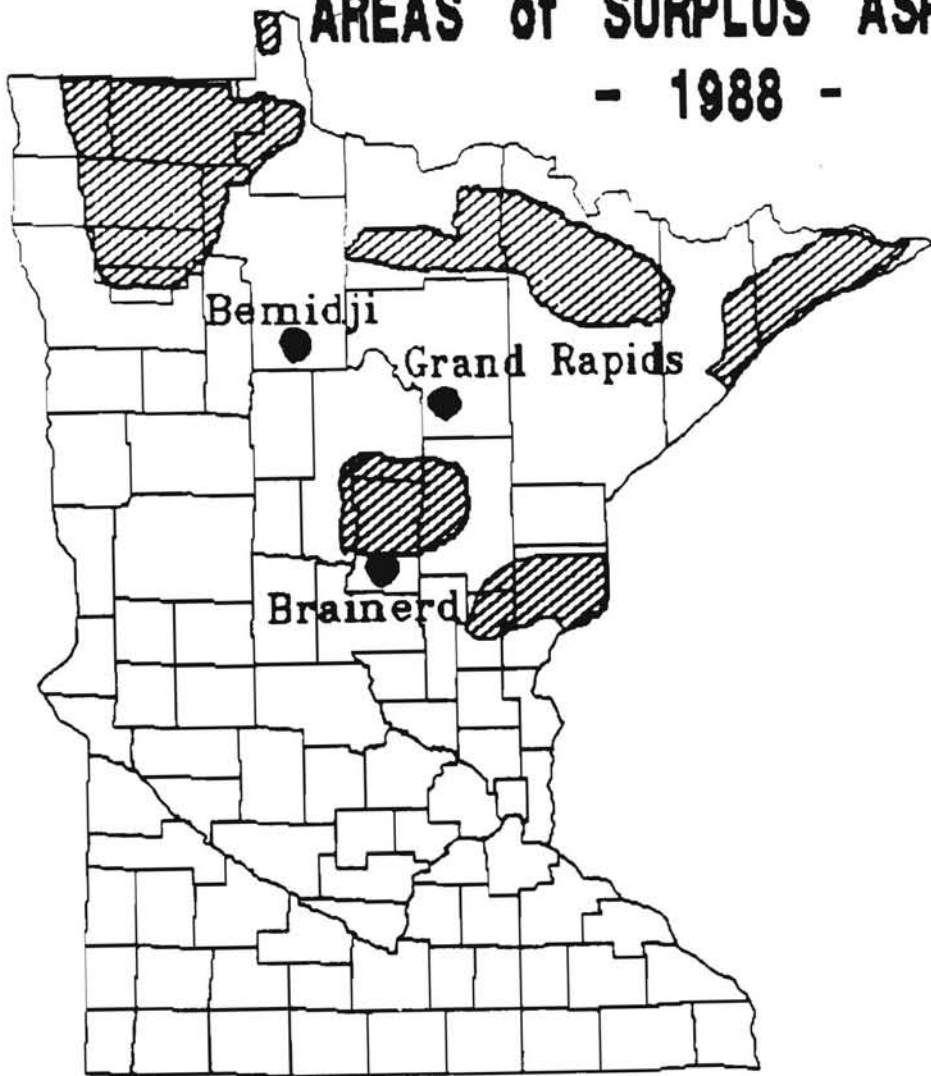
(volume in million cords)



5/1988

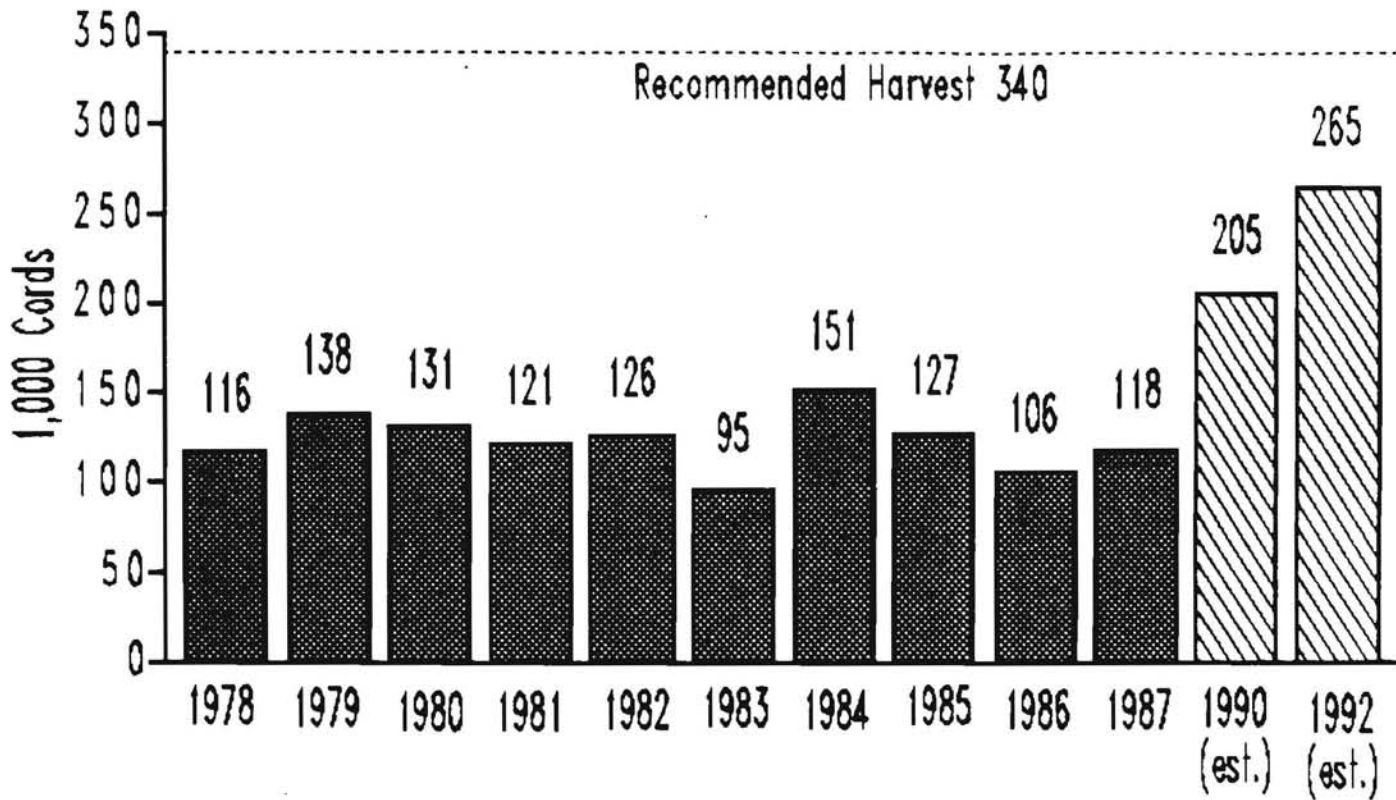
AREAS of SURPLUS ASPEN

- 1988 -



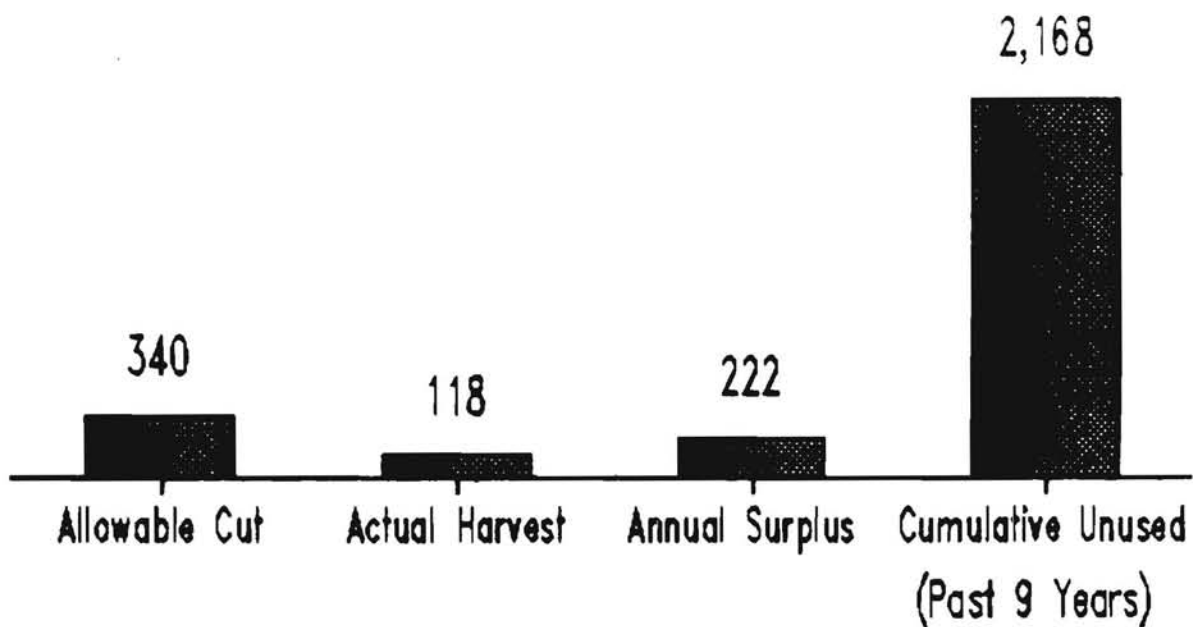
VOLUME of BALSAM FIR HARVEST in MINNESOTA

--- all Ownerships ---
(includes pulpwood & sawtimber)



MINNESOTA BALSAM FIR RESOURCE and USE - 1987

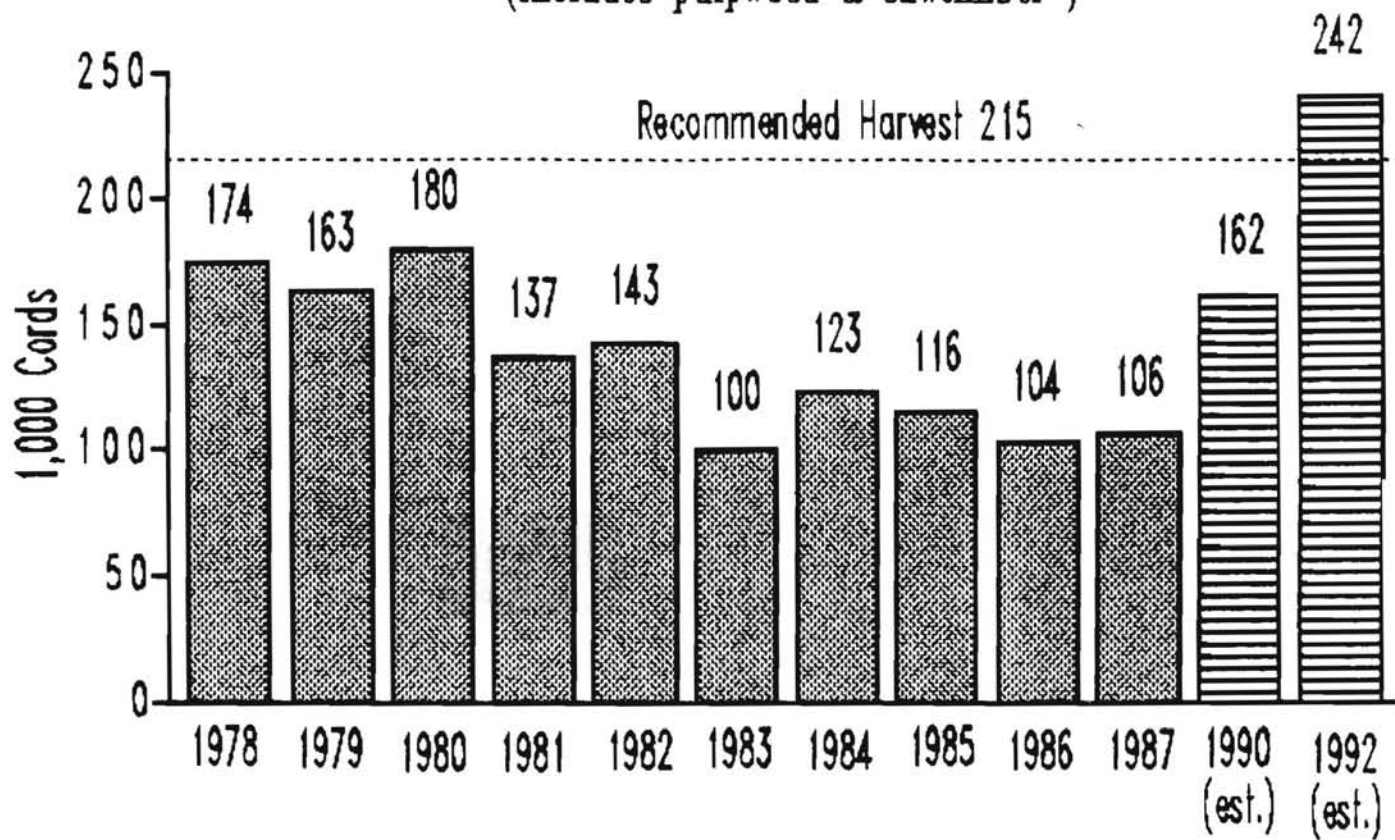
(volume in 1,000 cords)



5/1988

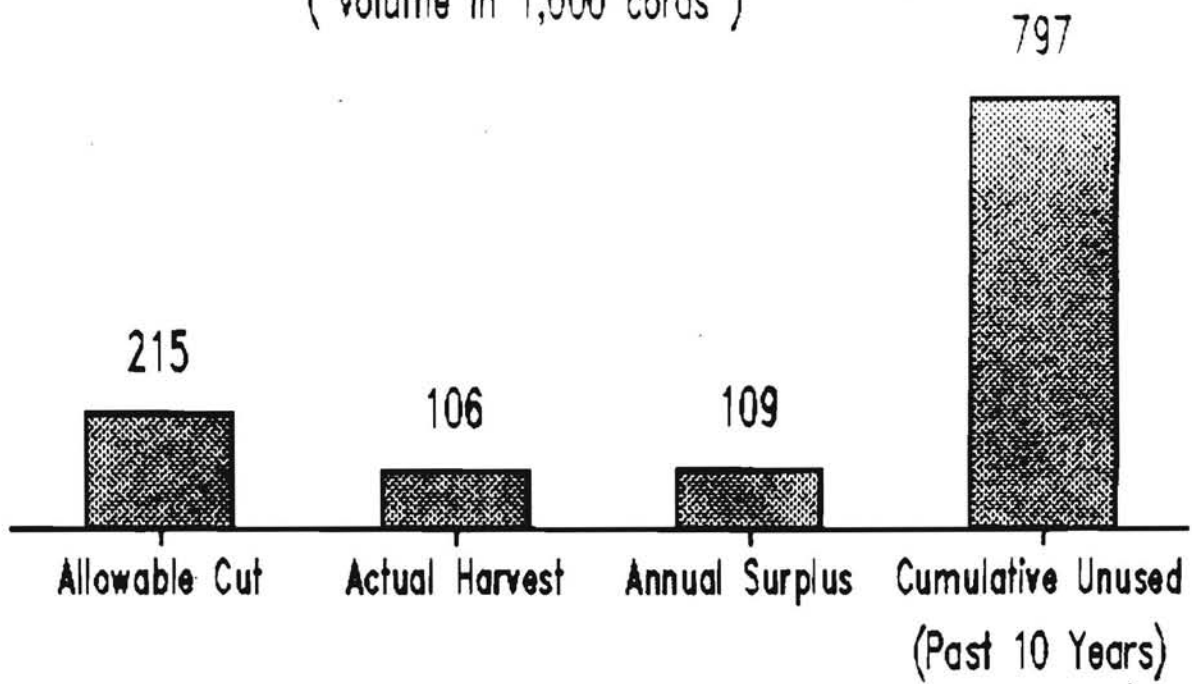
VOLUME of SPRUCE HARVEST in MINNESOTA

--- all Ownerships ---
(includes pulpwood & sawtimber)



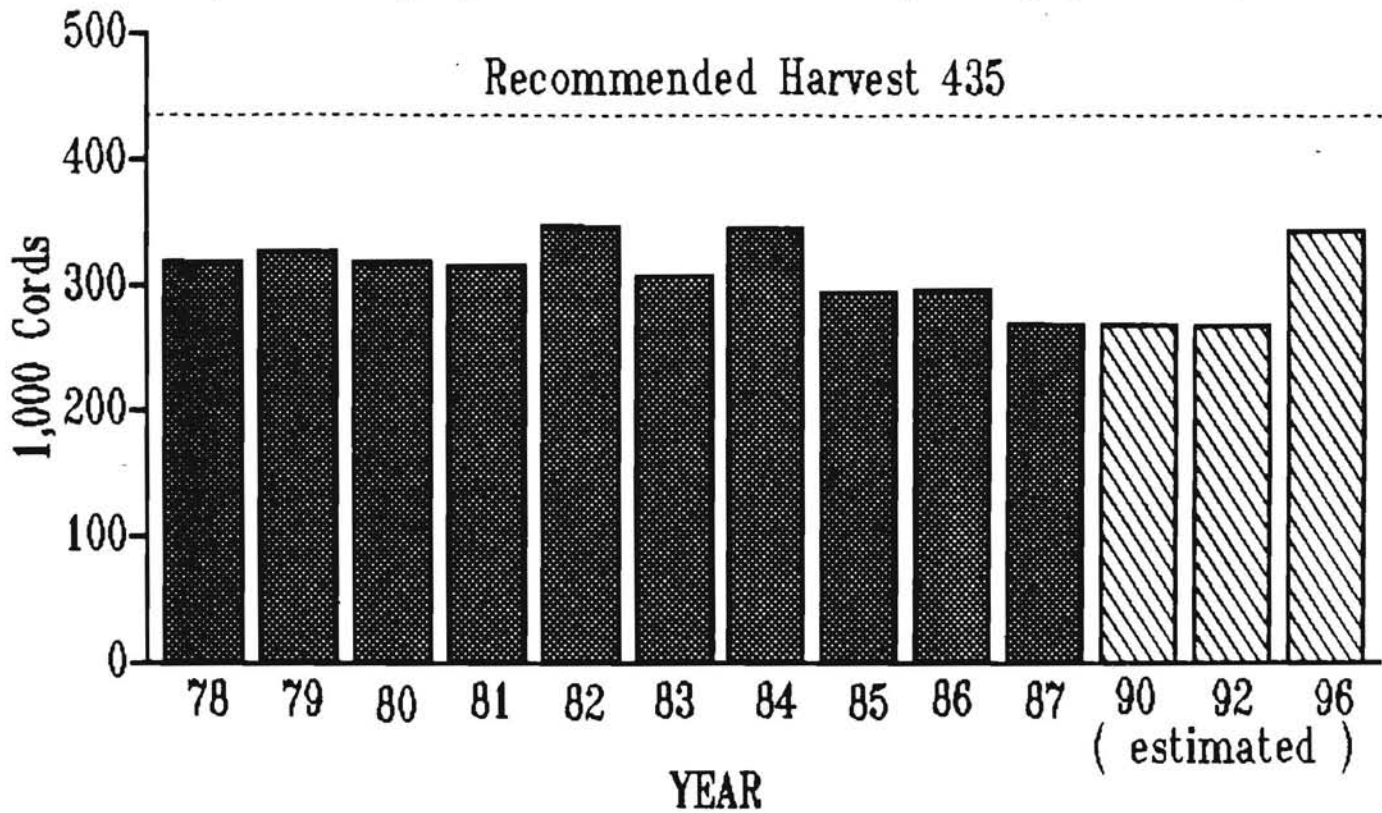
MINNESOTA SPRUCE RESOURCE and USE - 1987

(volume in 1,000 cords)



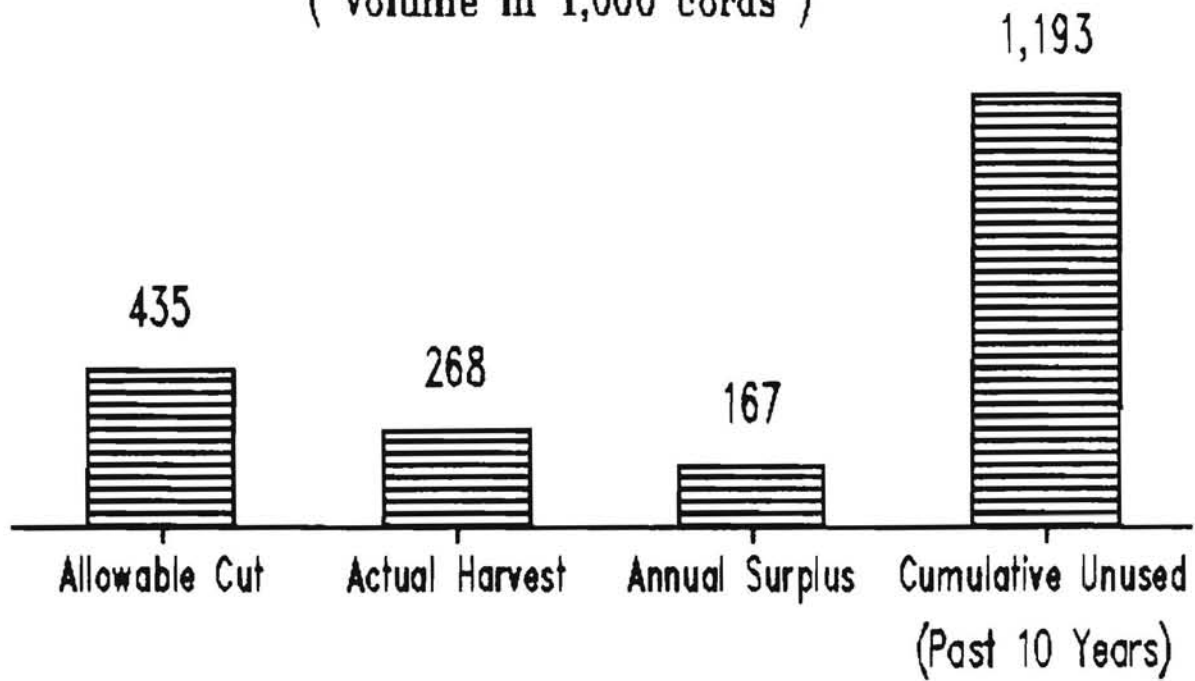
5/1988

VOLUME of PINE HARVEST in MINNESOTA
Jack Pine, White Pine, Red Pine - All Ownerships
 (includes pulpwood, sawtimber & specialty products)



MINNESOTA PINE RESOURCE and USE - 1987

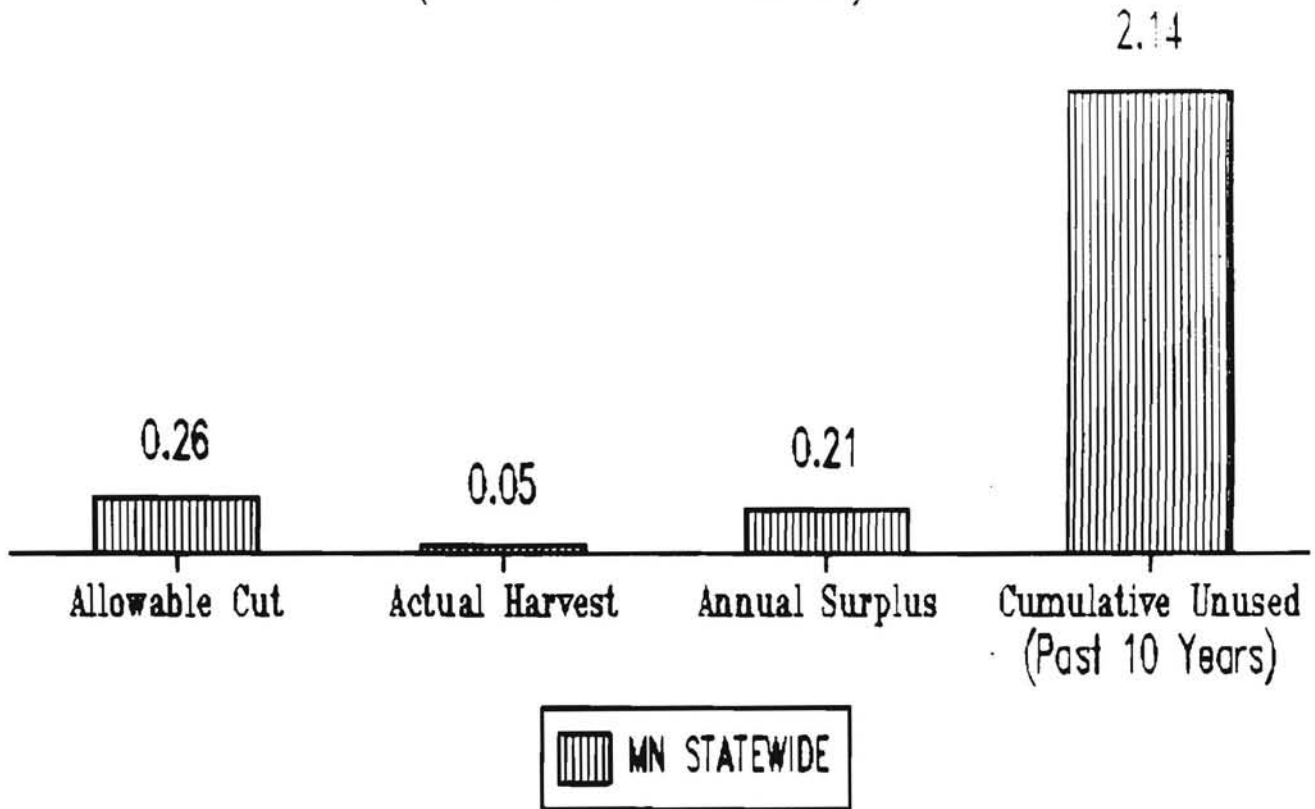
(volume in 1,000 cords)



6/1988

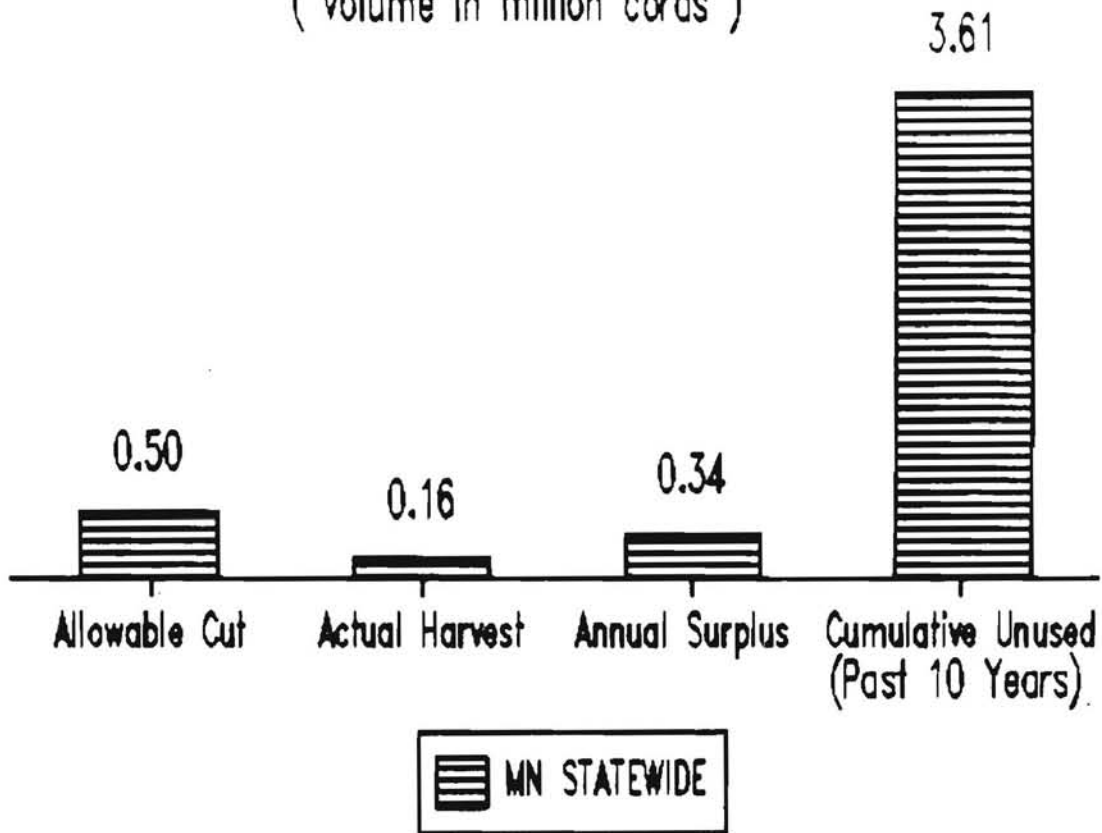
MINNESOTA BALM RESOURCE & USE - 1987

(volume in million cords)



MINNESOTA BIRCH RESOURCE & USE - 1987

(volume in million cords)



Minnesota Projected Wood Availability Statewide - 1992 (in thousand cords)

I. Using Current Recommended Harvest

<u>Species</u>	<u>Recommended Harvest</u>	<u>Actual Harvest</u>	<u>Surplus</u>
Aspen	1963	2780	(817)
Balm of Gilead	261	100	161
Birch	503	281	222
Balsam	340	265	75
Spruce	215	242	(27)
Pine	435	268	167
Tamarack	69	14	55

Minnesota Projected Wood Availability
Statewide - 1992
(in thousand cords)

II. Using Modified Recommended Harvest Which Includes Annual Recommended Harvest Plus the Accumulated Surplus Liquidated Over 15 Years.

<u>Species</u>	<u>Recommended Harvest</u>	<u>Actual Harvest</u>	<u>Annual Surplus</u>
Aspen	2298	2780	(482) *
Balm of Gilead	456	100	356
Birch	823	281	542
Balsam	522	265	257
Spruce	283	242	41
Pine	559	268	291
Tamarack	110	14	96

*Based on this harvest level, the accumulated surplus will be liquidated by approximately 1998.

Resource Concerns/Needs

- 1) Increased Wood Use**
 - pulp & paper
 - other wood industries
- 2) Stumpage Availability**
 - public
 - private
 - environmental concerns
- 3) Price**
- 4) Access**
- 5) Species Concerns**
 - aspen
 - balsam fir
 - spruce
- 6) Increased Availability**
 - increased growth rates
 - availability of other species
 - technological changes

TOTAL AREA and POTENTIAL ANNUAL GROWTH by OWNERSHIP
 (Based on Forest Survey Productivity Classification)

<u>Ownership Class</u>	<u>1,000 Acres</u>	<u>Annual Growth 1,000 Cords</u>	<u>Annual Growth per Acre</u>
National Forest	1,715.1	1,182.9	0.69
Bureau of Land Mgt	43.9	28.7	0.65
Indian	466.8	345.9	0.74
Misc Federal	110.5	72.7	0.66
State	2,650.5	1,810.7	0.68
County/Municipal	2,341.6	1,861.9	0.79
Forest Industry	772.0	596.8	0.77
Farmers	3,403.7	2,416.8	0.71
Other Privates	2,191.0	1,657.2	0.76
<u>TOTAL</u>	<u>13,695.1</u>	<u>9,973.6</u>	<u>0.73</u> (Ave.)