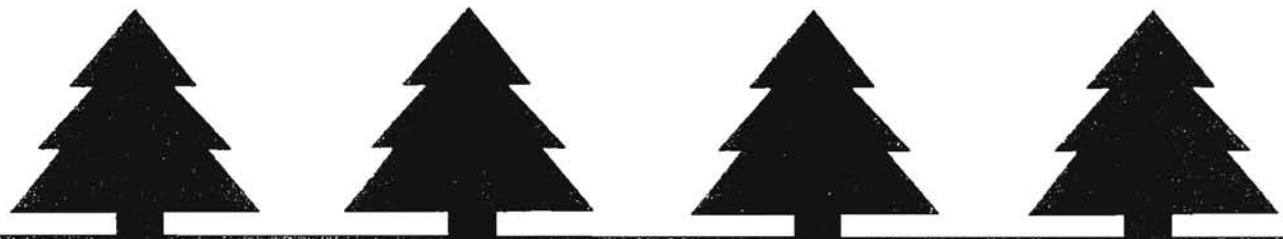


OHARA

# MINNESOTA'S FOREST RESOURCES

Department of Natural Resources  
Division of Forestry  
500 Lafayette Road  
St. Paul, MN 55155-4044

August 1993



# 1990 Inventory Highlights

	1977	1990
Forest Acres	16.7 million	16.7 million
Timberland	13.7 million	14.8 million
Total Volume	145.0 million cds.	190.0 million cds.
Sawlog Volume	50.0 million cds.	70.0 million cds.

## Growth:

Average Annual (1977-1989) 4.6 million cds.  
Current Annual (1990) 5.7 million cds.

## Mortality:

Average Annual (1977-1989) 2.8 million cds.  
Current Annual (1990) 2.6 million cds.

## Removals:

Average Annual (1977-1989) 2.6 million cds.  
Current Annual (1990) 3.4 million cds.

# Summary of Minnesota's Forest Industry—1990

## Total Acres in Minnesota: 54 Million

Total Forest Acres = 16.7 Million = 31%

Timberland Acres (available for harvest) = 14.8 Million = 27%

## Volume of Timber Harvested:

Total = 3,448,600 cords\*

Sawlogs = 254 million board feet

Veneer Logs (exported) = 4.4 million board feet

Chips (fuel & mulch) = 46,000 cords

Fuelwood = 535,200 cords from roundwood  
(an equal volume of fuelwood was salvaged from  
wood residues such as mill waste, dead trees,  
logging slash)

Veneer = 10.2 million board feet

Posts & Poles = 16,090 cords

Shavings (animal bedding) = 55,200 cords

Pulpwood = 2,277,000 cords

## Value of Timber Harvest:

Stumpage (value to landowner) = \$36,208,480<sup>#</sup>

At the Mill (value to logger) = \$193,178,806<sup>#</sup>

## Christmas Trees, Wreaths, & Associated Products:

12 Million Trees/year

Estimated Total Sales (trees, wreaths, & other products) = \$25 Million

## Gross Sales of the Industry: \$6.2 Billion

## Total Payroll: \$2.2 Billion

## Total Employment: 58,900

Secondary manufacturing = 31,900

Primary processing = 27,000

The pulp and paper industry is the largest consumer of wood in Minnesota (29%).

Window manufacturing generates the most dollars in sales (nearly 20%).

\* Includes all timber products converted to cords.

# These values do not include salvaged wood residues.

# Minnesota Wood Industry - 1992

## Economic Impact:

- ☆ Value of Forest Products Manufactured = \$7 Billion
- ☆ 4th Largest Manufacturing Industry in Minnesota
- ☆ Generates 16% of Dollars of all Manufacturing

## Employment:

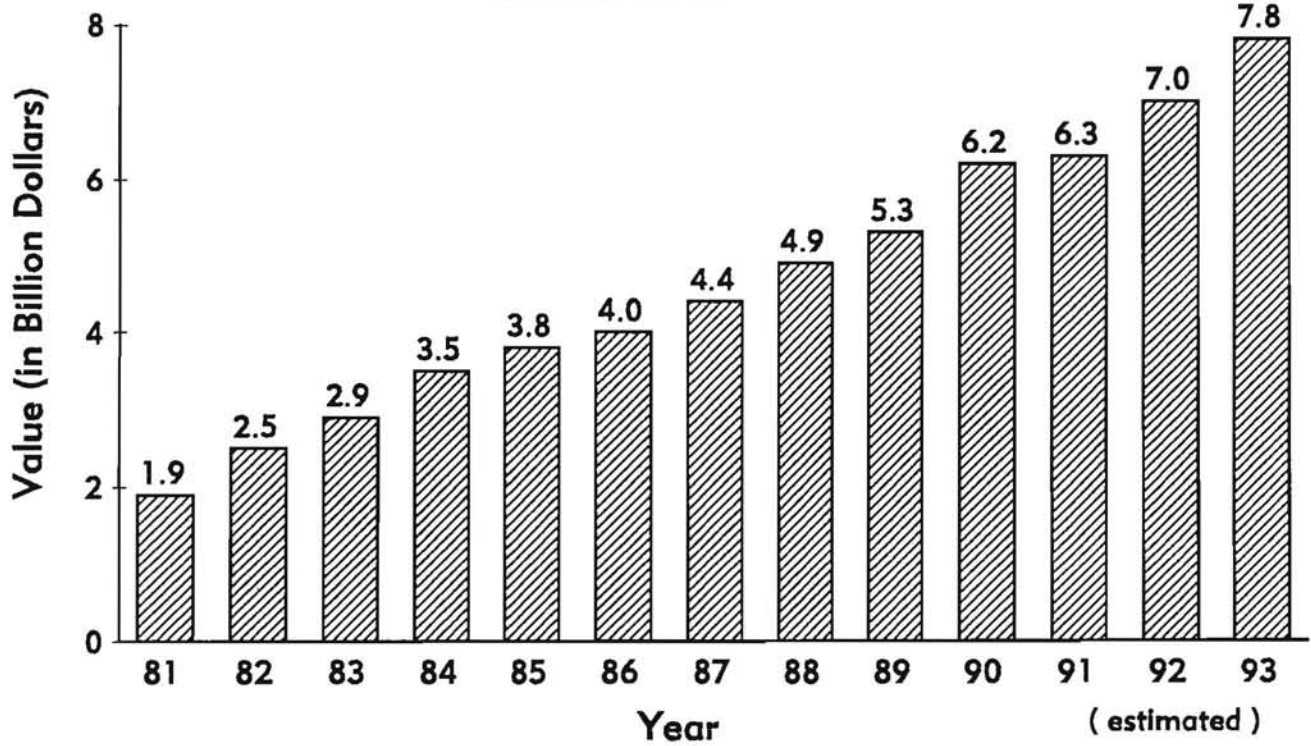
- ☆ 55,000 Employees
- ☆ \$2.1 Billion Payroll

## Industry:

- ☆ 8 Pulp & Paper
- ☆ 4 Hardboard & Specialty
- ☆ 6 Oriented Strand Board
- ☆ 800 Sawmills
- ☆ 150 Associated Industries
- ☆ Over 850 Secondary

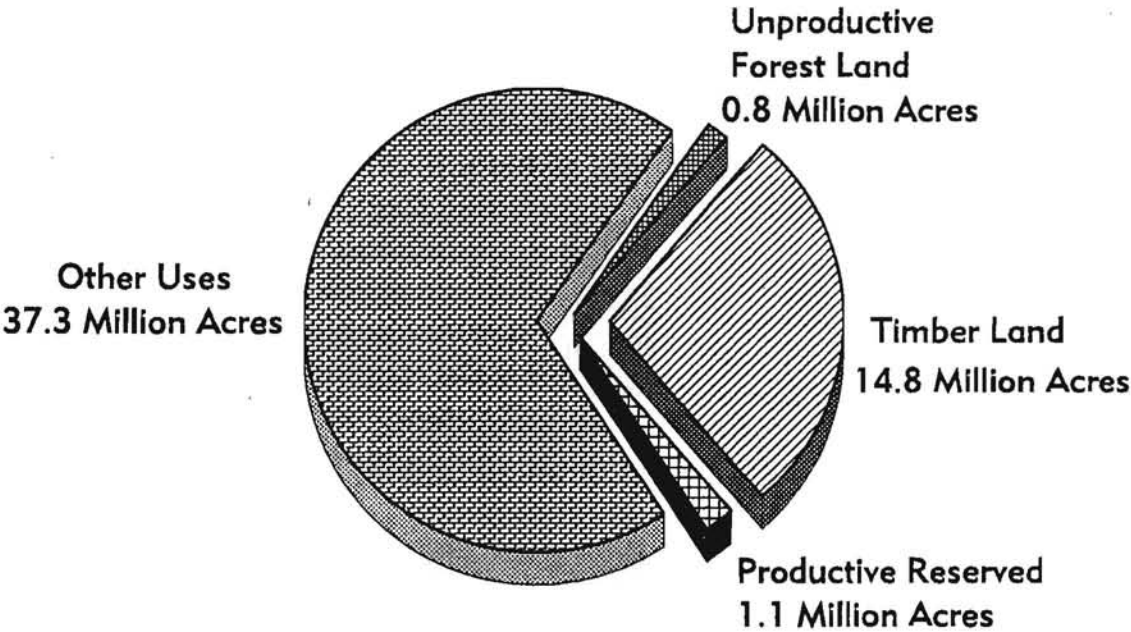
## Value of Forest Products Manufactured

in Minnesota



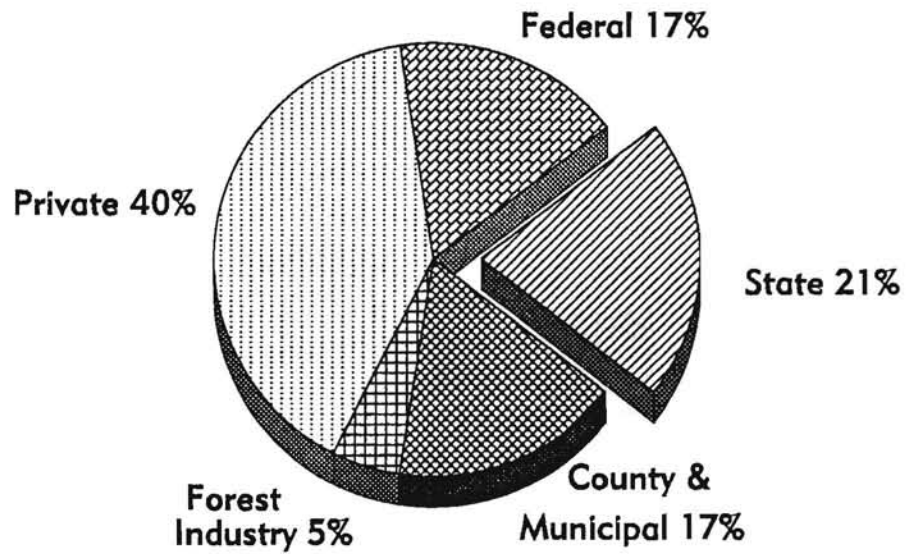
# MINNESOTA LAND USE

- Total of 54 Million Acres -



# MINNESOTA TIMBERLAND by OWNERSHIP

- 14.8 Million Acres -



# Area of Timberland in Minnesota by Forest Type —1990—

Forest Type	Acres (000's)
Jack Pine	447.5
Red Pine	301.6
White Pine	63.2
Balsam Fir	734.3
White Spruce	93.8
Black Spruce	1,322.1
Cedar	680.5
Tamarack	705.1
Oak	1,184.3
Elm - Ash	1,291.5
Maple - Basswood	1,402.9
Aspen	5,114.2
Birch	835.8
Balm of Gilead	427.7
Non-Forest	168.9
Total All Types	14,773.4

*Sup. chip*  


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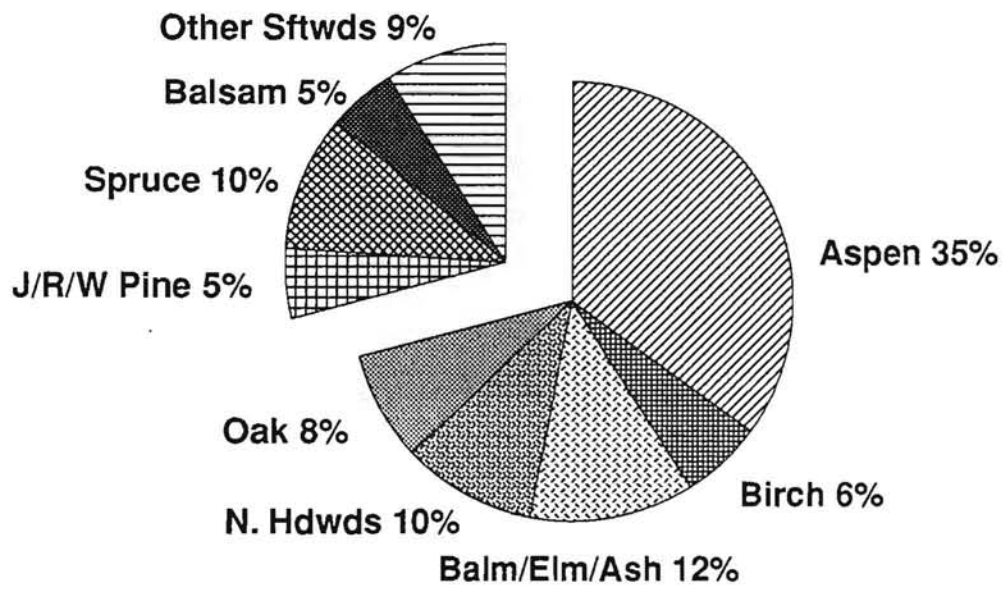
*(2006)*  
*60.6*  


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*11.3*



**% of TIMBERLAND by COVER TYPE**  
**- State of Minnesota -**  
**14.8 Million Acres**

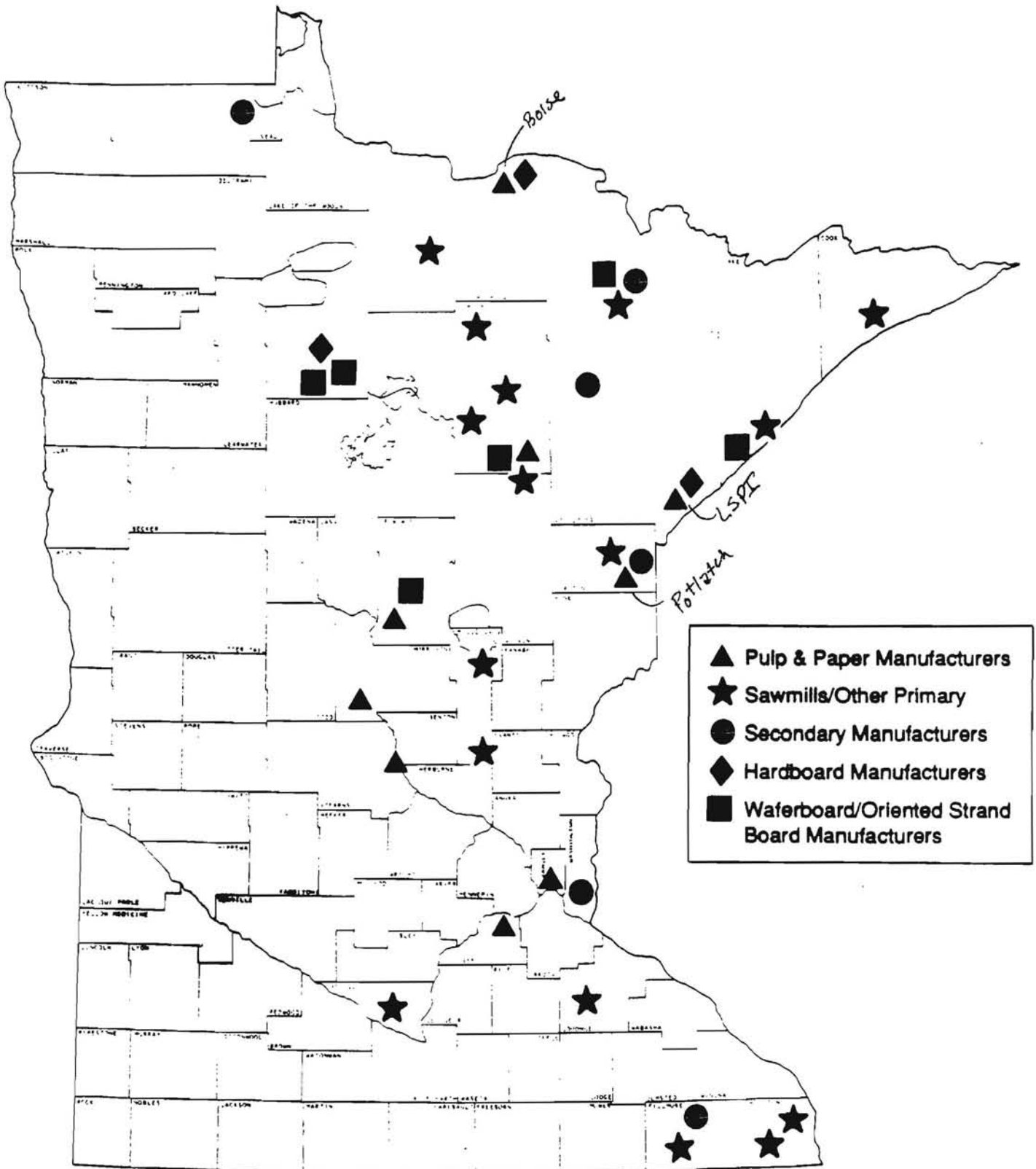


**Total Wood Harvest in Minnesota by Species  
- Timberland -  
1992  
(in thousand cords)**

Species	Pulpwood	Sawlogs & Other	Fuel		Total
			Residential *	Commercial	
Aspen	1,984.8	224.8	46.0	9.6	2,265.2
Birch	25.0	55.0	79.4	2.7	162.1
Balm of Gilead	85.5	.4	—	—	85.9
Ash	3.1	18.5	52.9	—	74.5
Oak	—	89.8	191.4	.8	282.0
Elm	—	6.1	81.7	—	87.8
Basswood	3.7	34.0	2.2	—	39.9
Maple	11.7	6.5	47.1	.2	65.5
Cottonwood	—	7.6	—	—	7.6
Other Hardwoods	—	2.8	—	—	2.8
<b>Sub-Total Hardwood</b>	<b>2,113.8</b>	<b>445.5</b>	<b>500.7</b>	<b>13.3</b>	<b>3,073.3</b>
Pine					
Red Pine	22.4 <small>41.2 MMBFC</small>	107.0	4.4	.2	134.0
White Pine	4.8	29.3	2.0	—	36.1
Jack Pine	109.3	117.4	6.4	2.0	235.1
Spruce	146.3	16.6	2.0	—	164.9
Balsam	187.0	7.6	2.6	.4	197.6
Tamarack	1.4	.4	.5	—	2.3
Cedar	—	6.8	.7	—	7.5
<b>Sub-Total Softwood</b>	<b>471.2</b>	<b>258.1</b>	<b>18.6</b>	<b>2.6</b>	<b>777.5</b>
<b>Total</b>	<b>2,585.0</b>	<b>730.6</b>	<b>519.3</b>	<b>15.9</b>	<b>3,850.8</b>

\* This is 50% of the total fuelwood burned and considered removed from growing stock trees.

# Minnesota's Largest Forest Products Producers

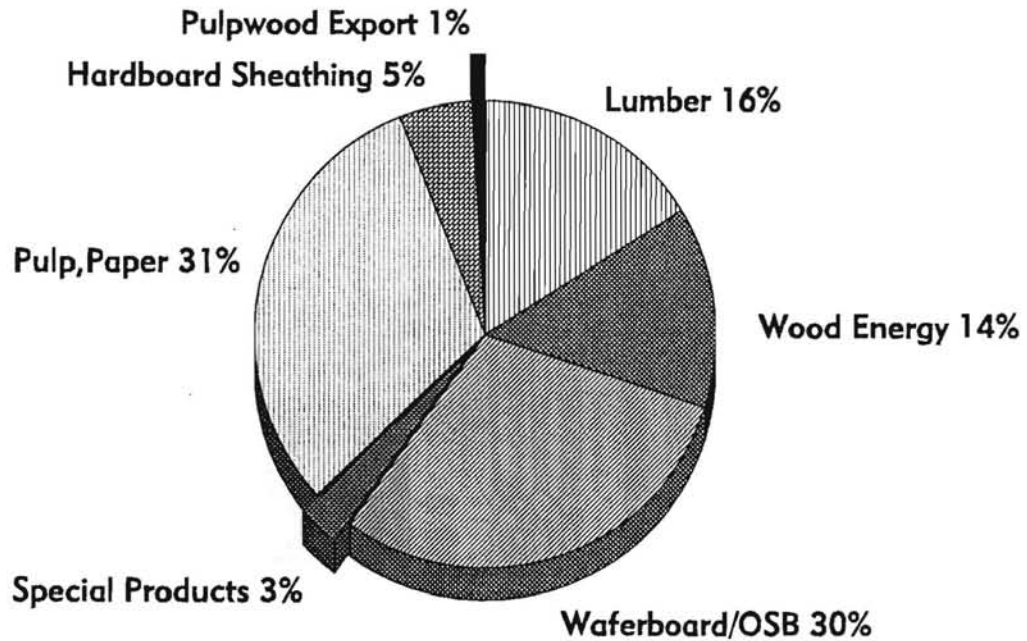


Source: DNR, Division of Forestry, 1988

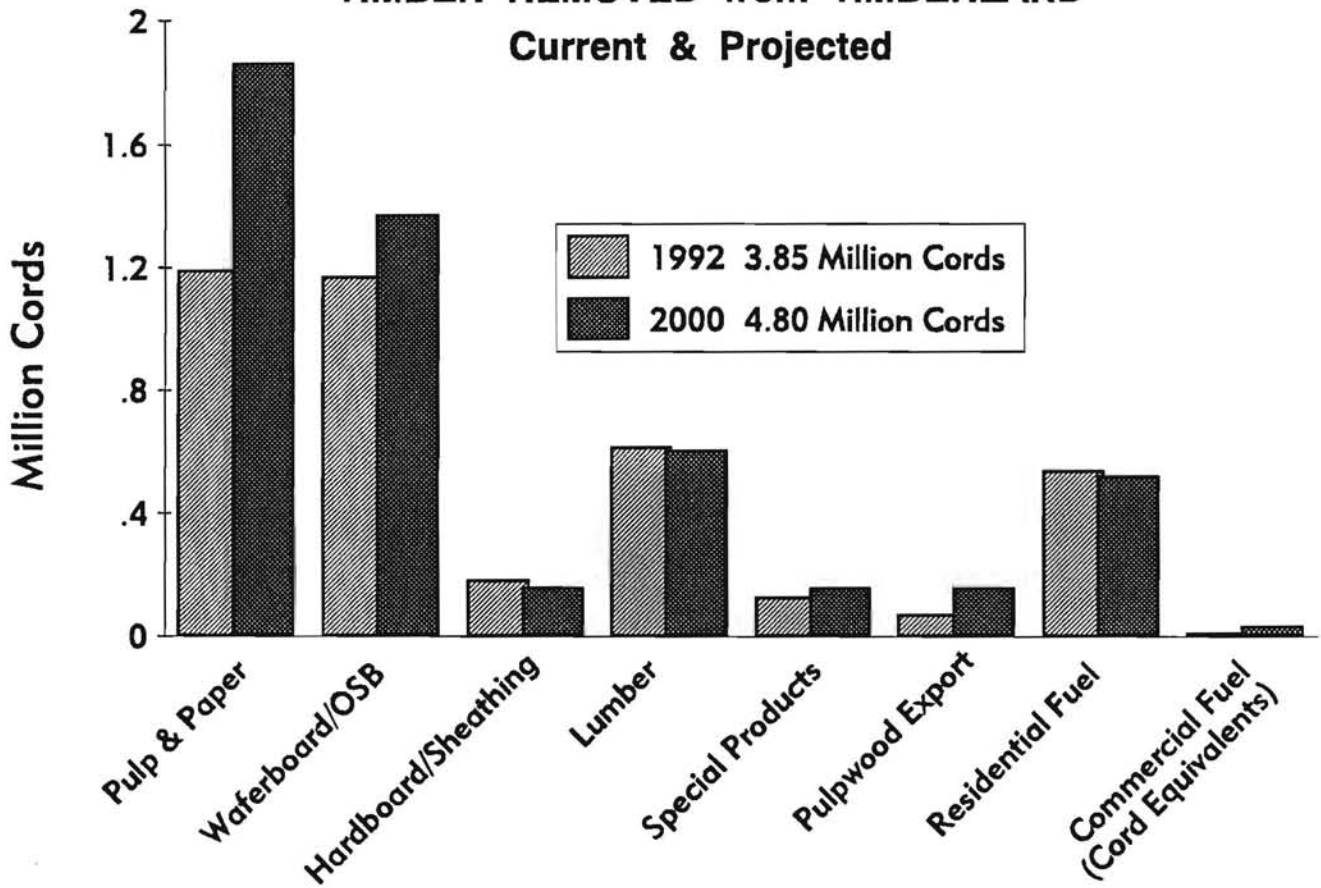
## MINNESOTA TOTAL WOOD USE by PRODUCT - 1992

### Harvest from Timberland

Total 3.85 Million Cords (Includes All Species)



**MINNESOTA WOOD HARVEST  
TIMBER REMOVED from TIMBERLAND  
Current & Projected**



# Minnesota Pulp and Paper

## —1992—

Firm	Wood Use (Cords)	Product
Blandin Paper Company Grand Rapids	185,000	Magazines, Catalogs
Boise Cascade International Falls	535,000	Business & Xerox
Hennepin Paper Little Falls	16,000 & Recycled Paper	Construction & Speciality
Champion International Sartell	145,600	Magazines, Catalogs
Lake Superior Paper Duluth	132,800	Advertising Supplements
Potlatch Corporation (2) Brainerd & Cloquet	336,700	Business & Printing
Waldorf Corporation St. Paul	Recycled Paper	Cardboard & Corrugated Boxes

1. These figures include some roundwood imported from Canada, Michigan, & Wisconsin.
2. These figures also include some purchased sawmill residues utilized for pulp & paper.

## Minnesota Waferboard/OSB —1992—

Firm	Wood Use (Cords)	Product
Potlatch Grand Rapids	264,100	OSB—"Potlatch Select"
Louisiana-Pacific Two Harbors	105,000	Waferboard—Siding "Inner Seal"
Northwood Bemidji	229,000	OSB—"Norbord"
Potlatch Bemidji	334,300	OSB—"Oxboard"
Potlatch Cook	185,400	OSB—"Oxboard"
Trus Joist MacMillan Deerwood	52,000	Timber Strand LSL

# Minnesota Hardboard and Specialty —1992—

Firm	Wood Use (Cords)	Product
Certaineed Corporation Shakopee	30,000 & Recycled Paper	Roofing Felt
International Biltrite International Falls	16,200 & Recycled Paper	Sheathing
Superwood Corporation Duluth	100,000*	Industrial Hardboard
Superwood Corporation Bemidji	32,800	Industrial Hardboard

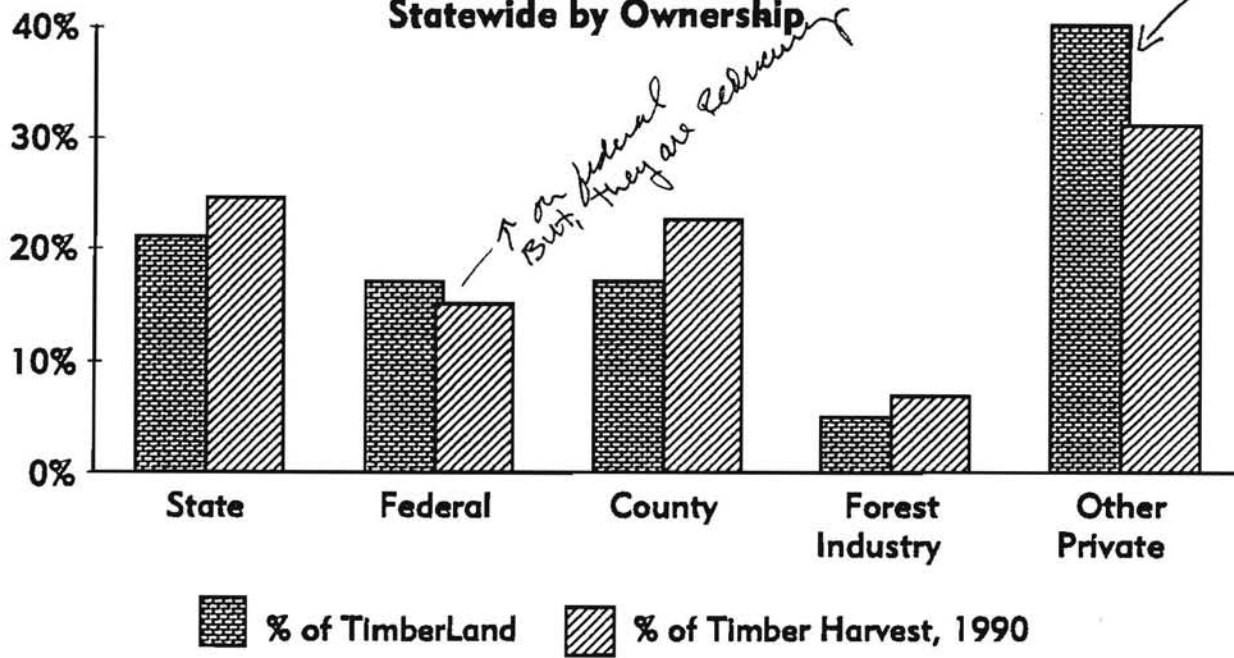
\* Includes some roundwood and chips imported from Wisconsin.



# MINNESOTA TIMBERLAND OWNERSHIP VS. AMOUNT of TIMBER HARVESTED

(does not include fuelwood)

Statewide by Ownership



## Minnesota—New and Expanding Large Wood Industries

<u>1975-1985</u>		<u>Add'l. Wood Use</u>	<u>Capital Investment (millions \$)</u>
Potlatch	Paper	30,000 cords	100
Potlatch	OSB	170,000 cords	40
Potlatch	OSB	170,000 cords	40
Northwood Panelboard	OSB	220,000 cords	45
Champion International	Paper	60,000 cords	250
Blandin (now Potlatch)	OSB	220,000 cords	50
Louisiana Pacific	Waferboard	90,000 cords	30
		<hr/> 960,000 cords	<hr/> \$555 million
 <u>1986-1989</u>			
Blandin	Paper	138,000 cords	350
Potlatch	Paper	None	100
Lake Superior Paper Ind.	Paper	130,000 cords	404
International Biltrite	Sheathing	25,000 cords	12
		<hr/> 293,000 cords	<hr/> \$866 million
 <u>1990-1992</u>			
Boise Cascade	Paper	340,000 cords	535
Trus Joist MacMillan	**PSL	135,000 cords	70
Potlatch	OSB	160,000 cords	35
Potlatch	Lumber	100,000 cords	22
		<hr/> 735,000 cords	<hr/> \$662 million
 <u>1993-2000</u>			
*Blandin #7	Paper	150,000 cords	300
*Lake Superior Paper Ind.	Paper	160,000 cords	505
*Potlatch	Paper	420,000 cords	400
*Champion International	Paper	60,000 cords	400
		<hr/> 790,000 cords	<hr/> \$1.605 billion

\* Under study

\*\* Parallel Strand Lumber

Source: MN DNR-Forestry  
vp-u&m\forprod\mnwoodha.chp-pg4

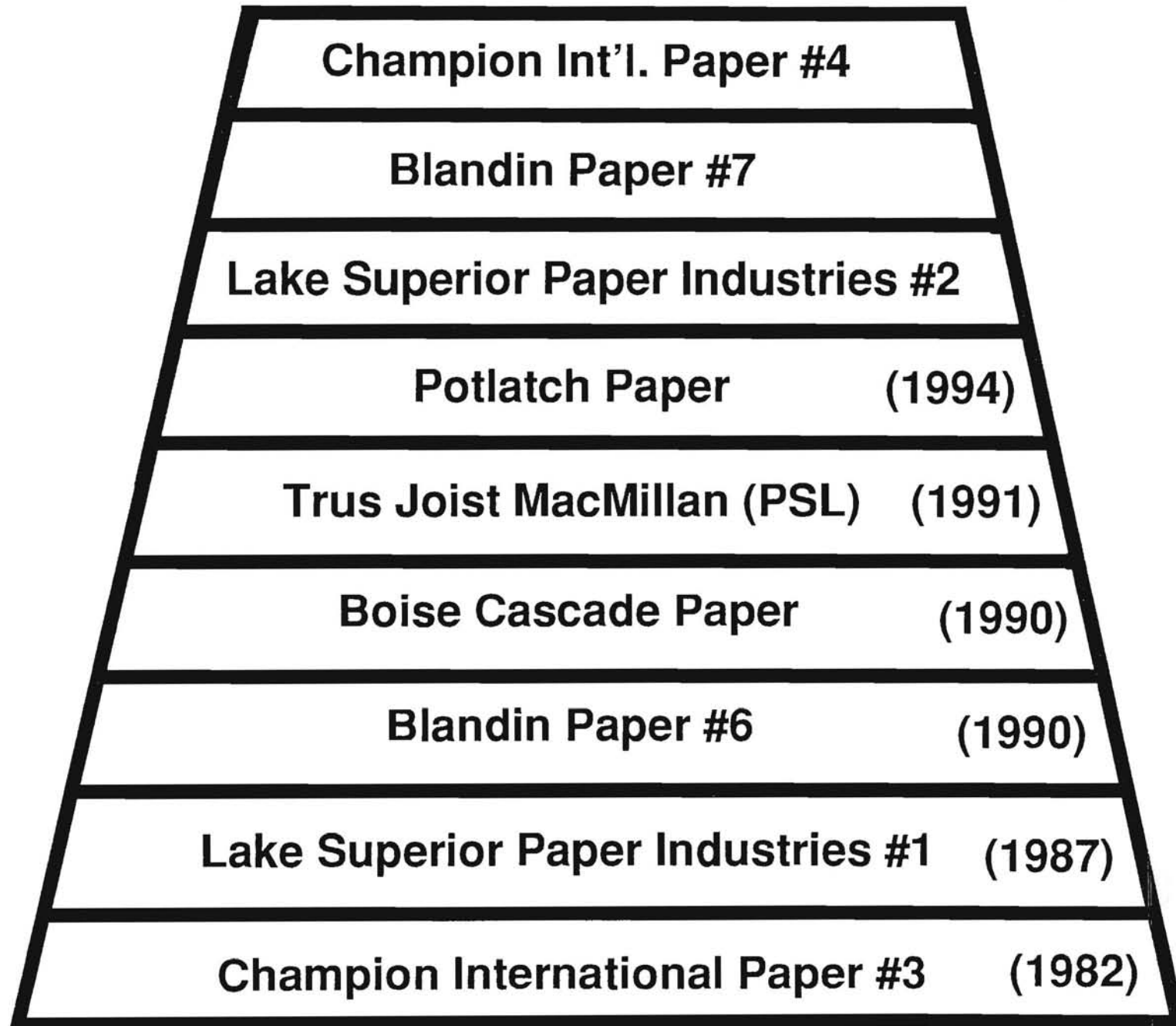


## Minnesota

### **New & Expanding Wood Using Industries**

<u>Period</u>	<u>Capital Investment (\$ millions)</u>	<u>Additional Wood Use</u>
1979-1985	\$555	1.0 million cords
1986-1990	\$866	.3 million cords
1991-1997	\$2,257	1.6 million cords
Totals	<u>\$3.678 billion</u>	<u>2.9 million cords</u>

# World Class Minnesota Mills



# Current and Projected Wood Harvest from Timberland —Minnesota Statewide—

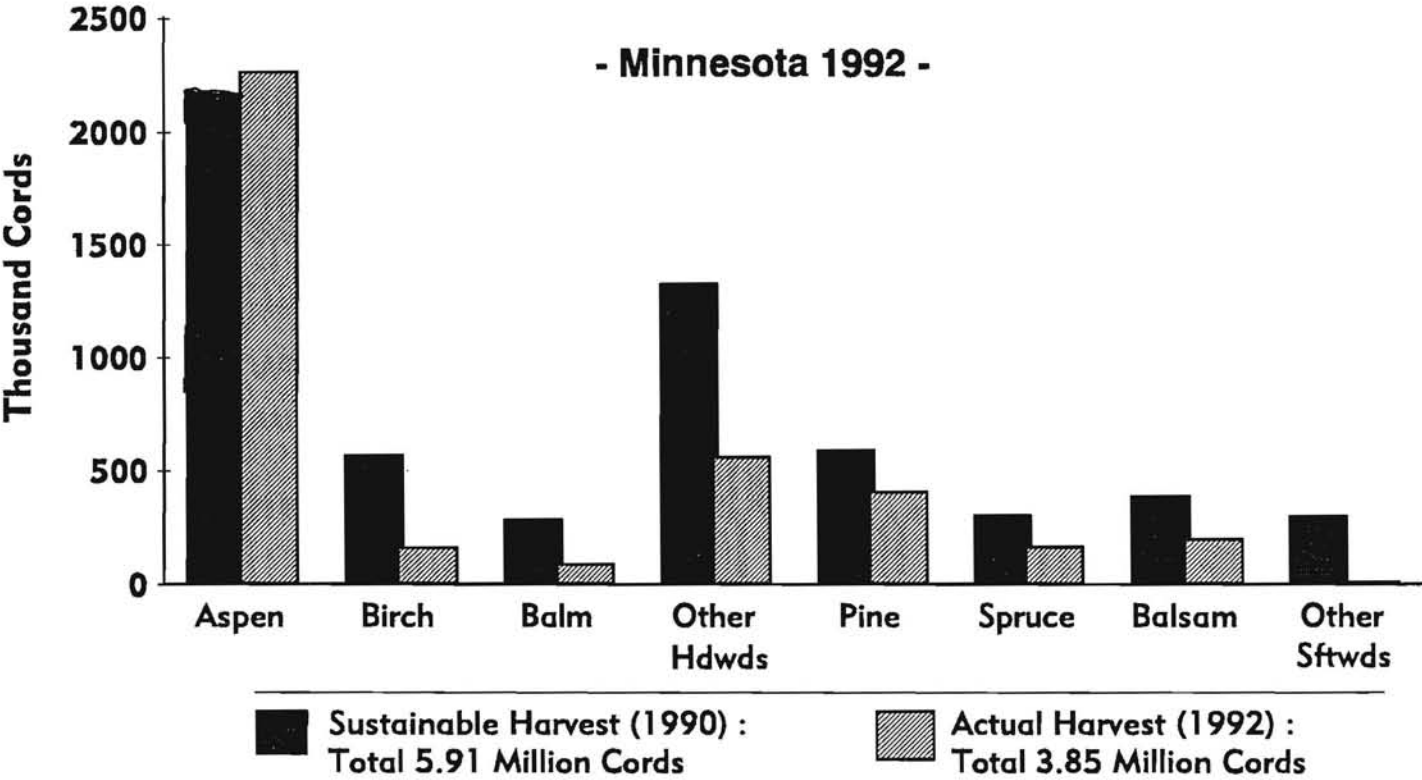
(In Thousand Cords)

Species	1992	2000
Aspen	2,265.2	2,520
Birch	162.1	365
Balm-of-Gilead	85.9	150
Ash	74.5	81
Oak	282.0	282
Elm	87.8	88
Basswood	39.9	146
Maple	65.5	147
Cottonwood	7.6	15
Other Hardwoods	2.8	3
Pine	405.2	463
Spruce	164.9	226
Balsam	197.6	341
Tamarack	2.3	10
Cedar	7.5	8
<b>Total</b>	<b>3,850.8</b>	<b>4,845</b>

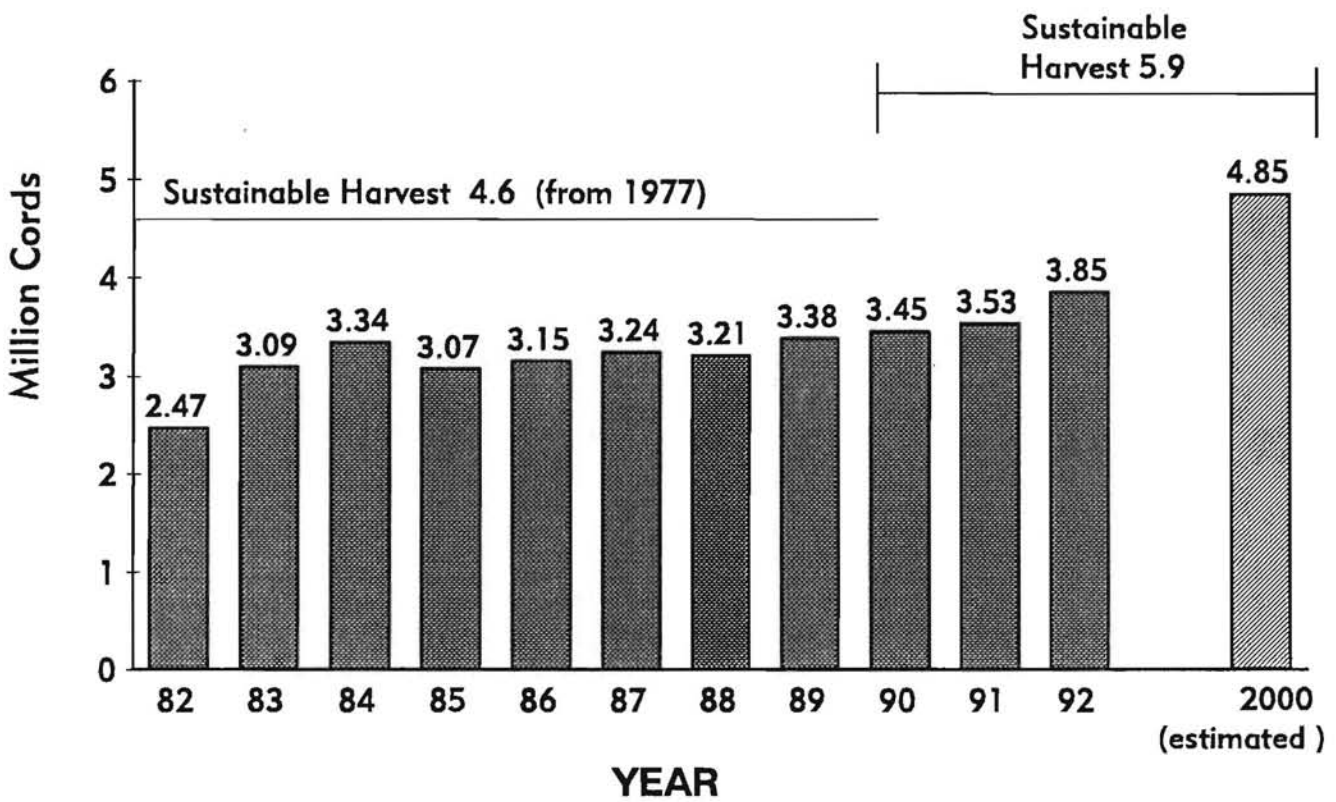
# SUSTAINABLE HARVEST & ACTUAL HARVEST

From Timberland

- Minnesota 1992 -

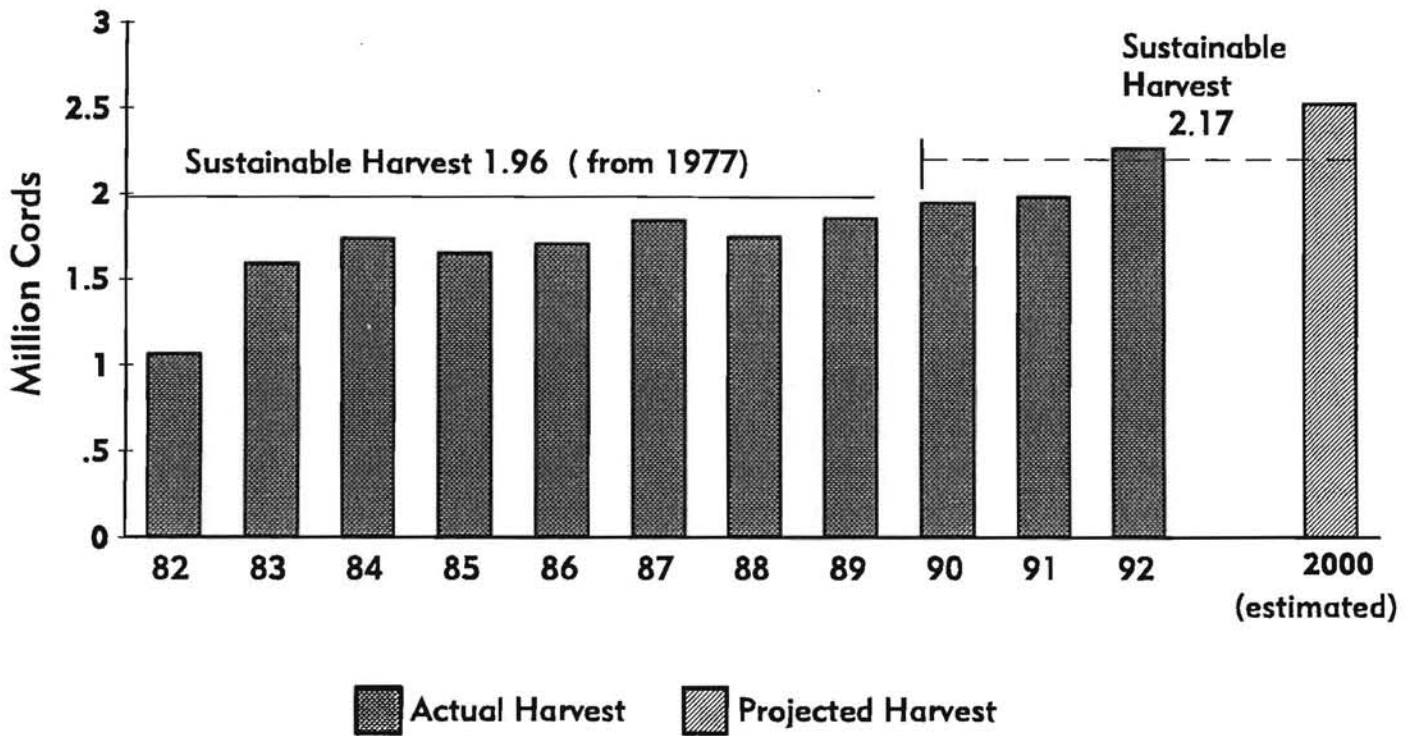


**ACTUAL & PROJECTED TIMBER HARVEST in MINNESOTA  
 COMPARED to SUSTAINABLE HARVEST LEVELS  
 - from Timberland -**





**ASPEN HARVEST in MINNESOTA : ACTUAL & PROJECTED  
 COMPARED to SUSTAINABLE HARVEST LEVEL  
 (includes Pulpwood, Sawtimber, & Wood for Energy)**



# Aspen

## Present and Projected Demand

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**1992 Harvest..... 2,265,000 cds.**

**2000 Harvest..... 2,520,000 cds.**

### *Major Changes:*

- Blandin + 135,000
- BCC + 40,000
- Champion Int'l. + 20,000
- Potlatch (Paper) + 10,000
- Potlatch (OSB) - 50,000
- LP (OSB) - 10,000

Continued

# Aspen

## Present and Projected Demand

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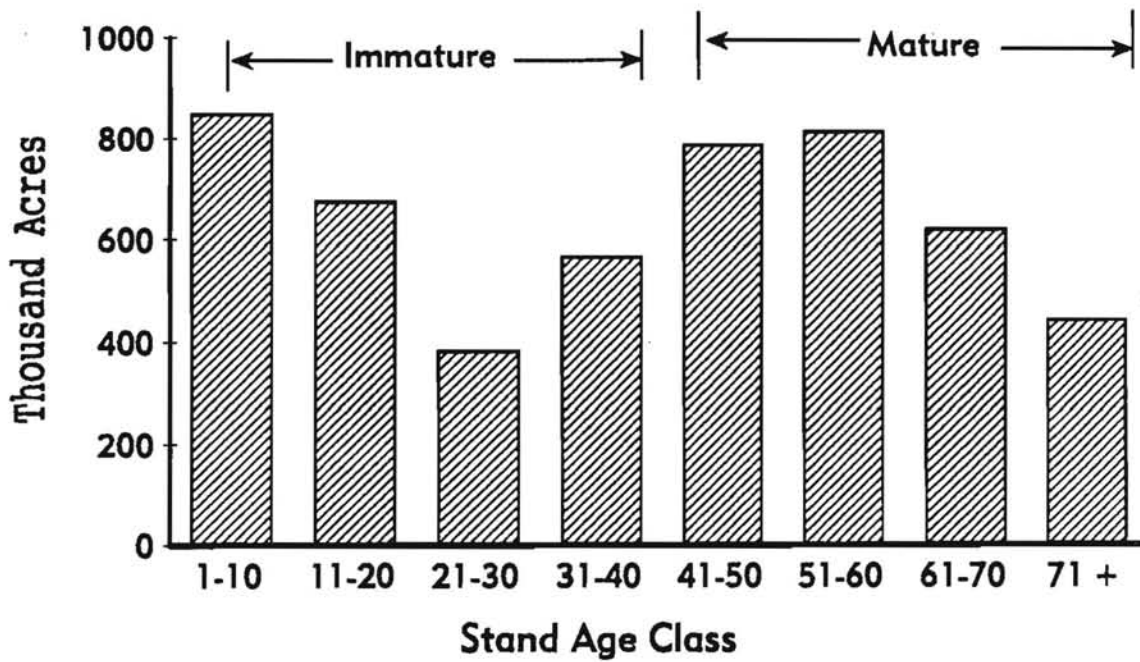
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### ***Major Changes:***      Continued

- Northwood (OSB)+ 5,000
- T J MacMillan      + 70,000
- Int'l. Bilrite      - 15,000
- Superwood      - 25,000
- Export      + 25,000
- Sawbolts      - 50,000
- Unannounced  
(OSB)      +100,000

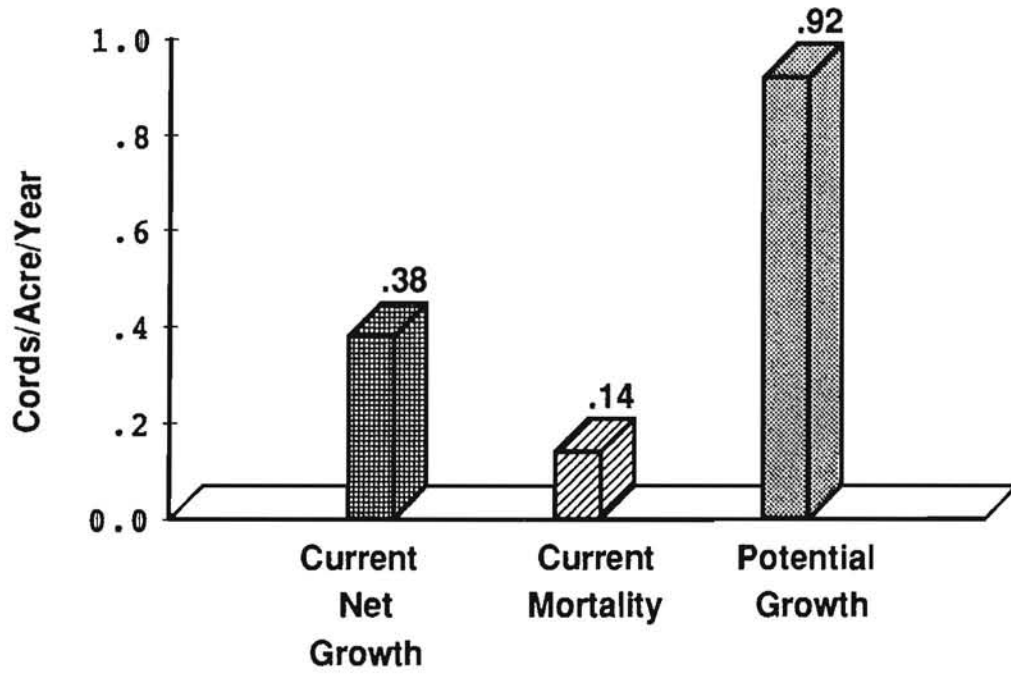
# ASPEN AGE DISTRIBUTION - (1990)

Minnesota Statewide



# CURRENT & POTENTIAL GROWTH of ASPEN TYPE

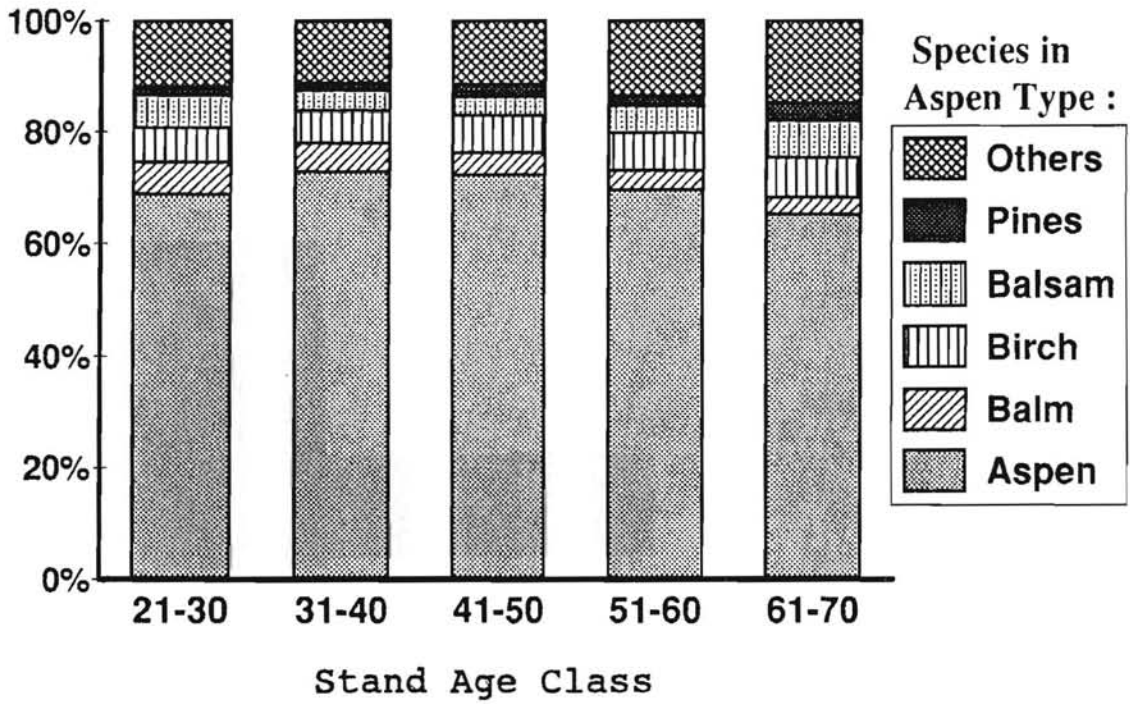
Minnesota Statewide



9/90

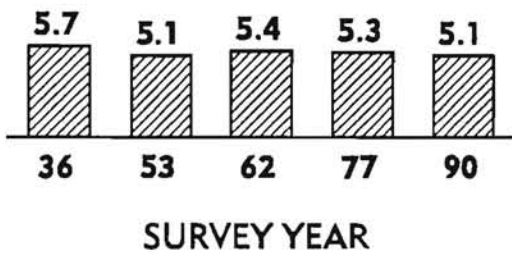
# % of SPECIES VOLUME in ASPEN TYPE

Based on State Land

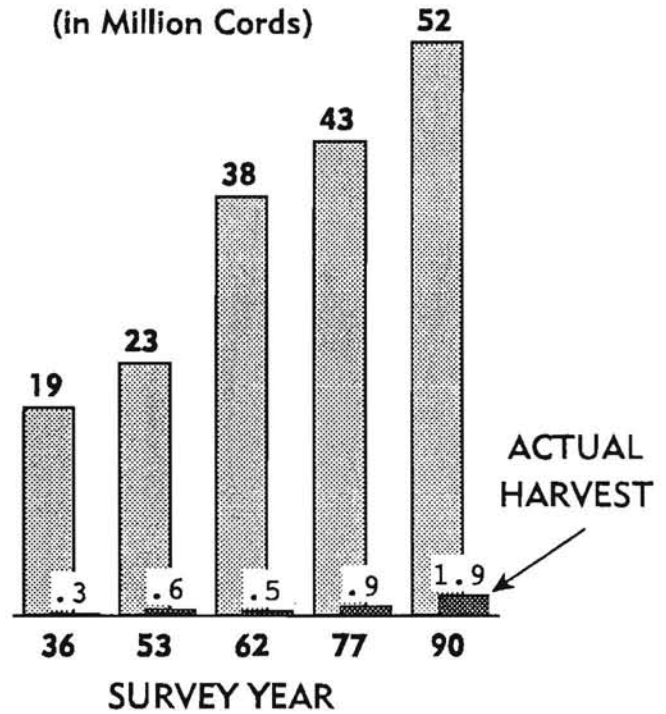


## ASPEN TYPE ACREAGE & ASPEN SPECIES VOLUME & HARVEST Minnesota Statewide

Aspen Type Acreage  
(in Million Acres)

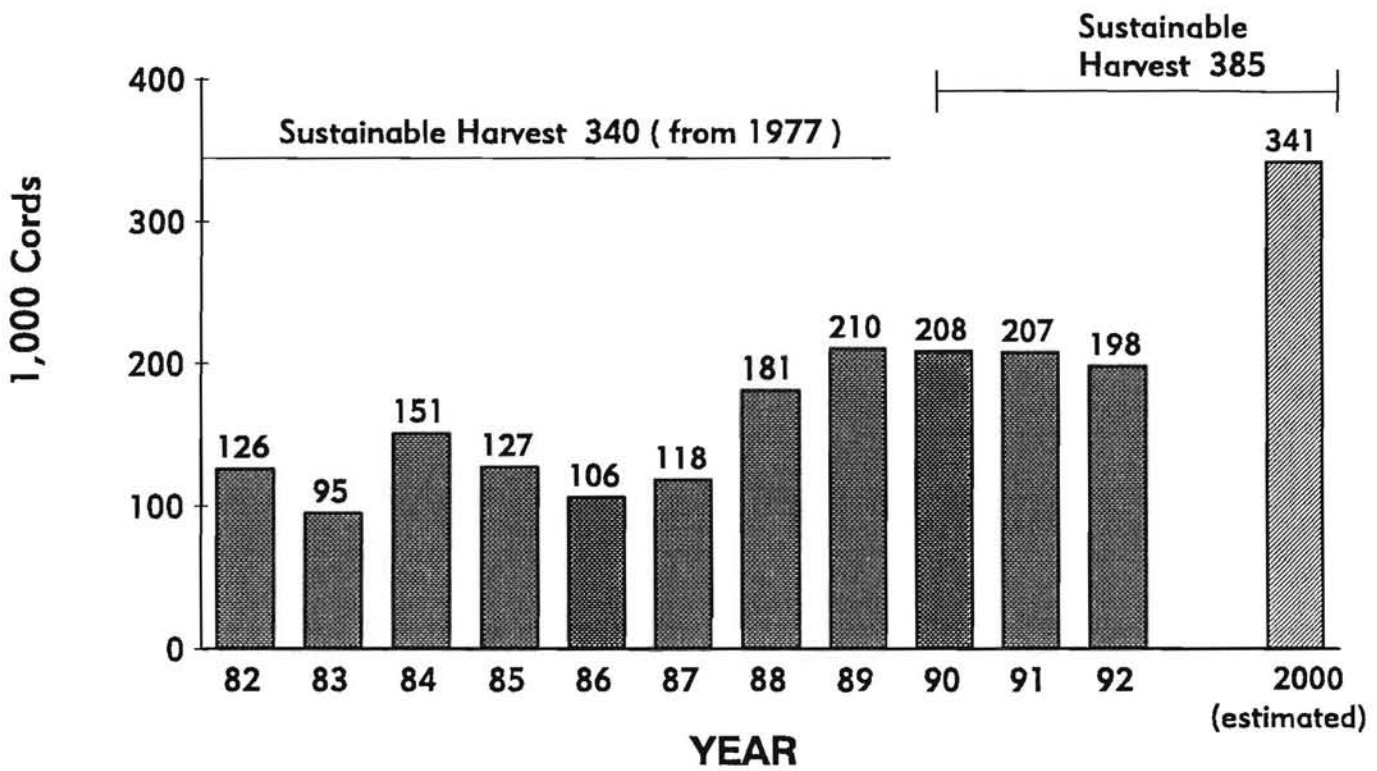


Aspen Species  
Growing Stock Volume  
(in Million Cords)



# BALSAM FIR HARVEST in MINNESOTA : ACTUAL & PROJECTED COMPARED to SUSTAINABLE HARVEST LEVEL

- from Timberland -





# Balsam Fir

## Present and Projected Demand

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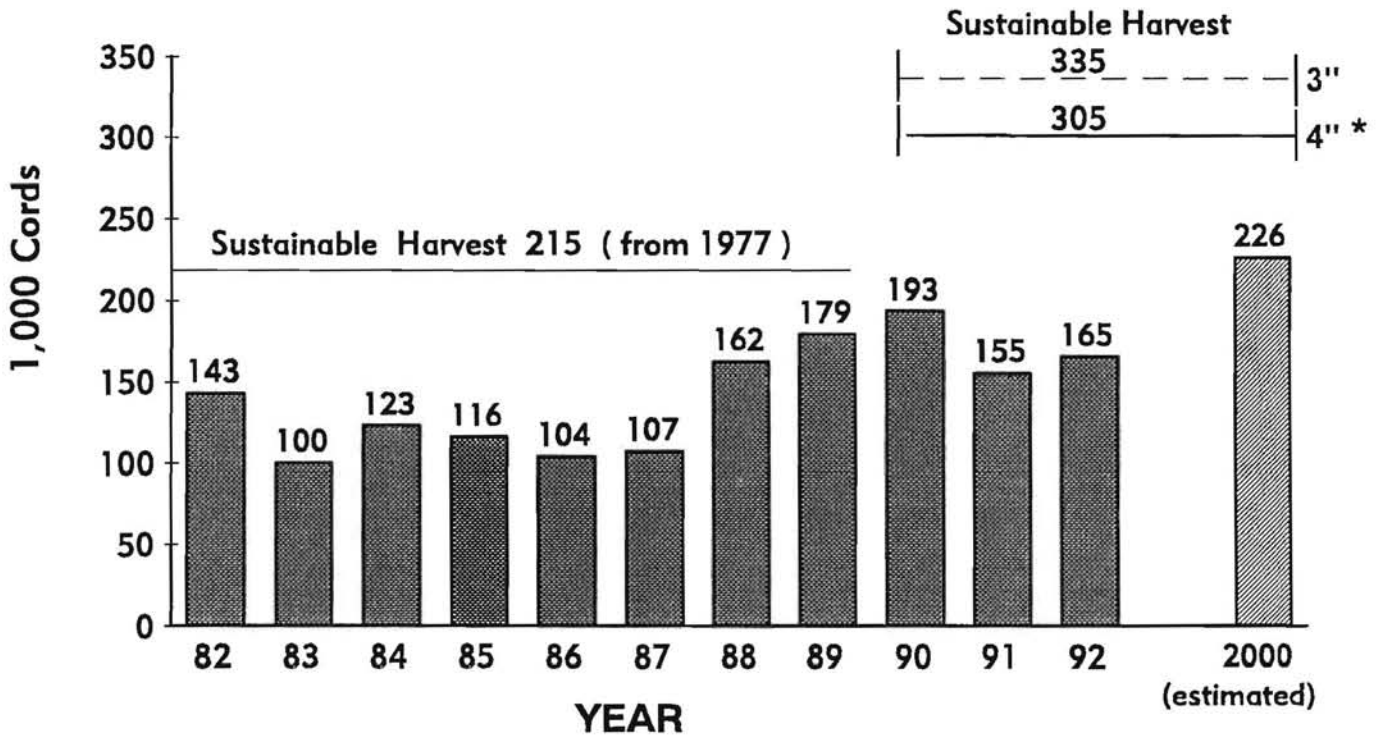
**1992 Harvest..... 198,000 cds.**

**2000 Harvest..... 341,000 cds.**

### *Major Changes:*

- Blandin + 35,000
- Champion Int'l. + 10,000
- LSPI + 85,000
- Export + 15,000

**SPRUCE HARVEST in MINNESOTA : ACTUAL & PROJECTED  
 COMPARED to SUSTAINABLE HARVEST LEVEL  
 - from Timberland -**



\* Black Spruce 188,300 cords. White Spruce 116,300 cords.

# Spruce

## Present and Projected Demand

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**1992 Harvest..... 165,000 cds.**

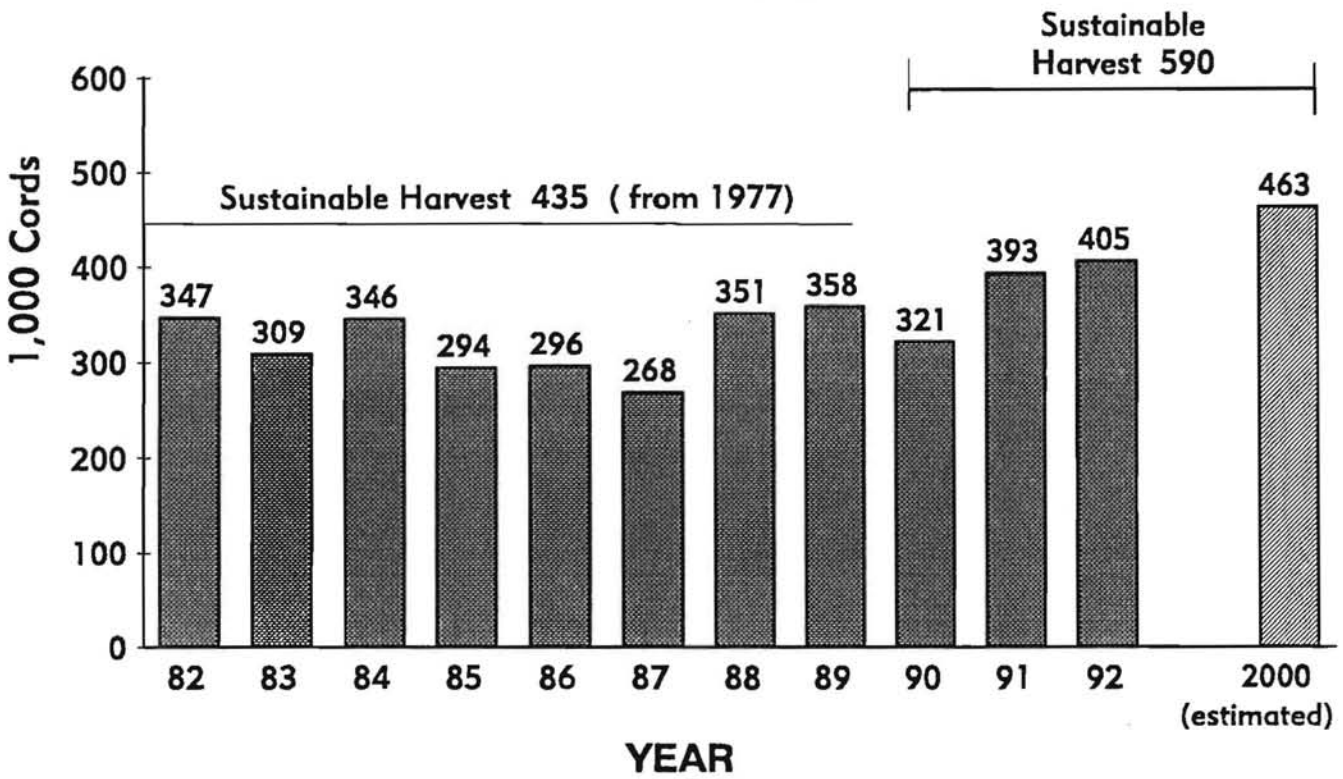
**2000 Harvest..... 226,000 cds.**

### *Major Changes:*

- Blandin + 25,000
- BCC - 5,000
- LSPI + 30,000
- Export + 10,000
- Sawbolts + 5,000

**PINE HARVEST in MINNESOTA : ACTUAL & PROJECTED  
COMPARED to SUSTAINABLE HARVEST LEVEL**

**- from Timberland -**



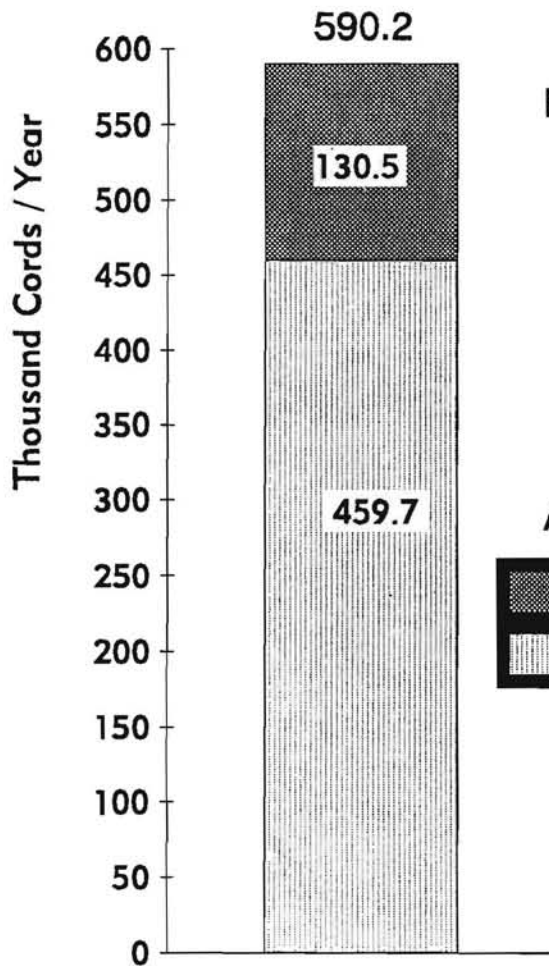
## PINE SUSTAINABLE HARVEST

( 1990 - 2000 )



Minnesota Statewide, all Ownerships

- Based on 1990 Survey -

from all Cover Types



Annual Sustainable Harvest (Net Volume) :

-  Volume Available from Thinnings (Age 31-100)
-  Growing Stock & Other Live Trees

# Pine

## Present and Projected Demand

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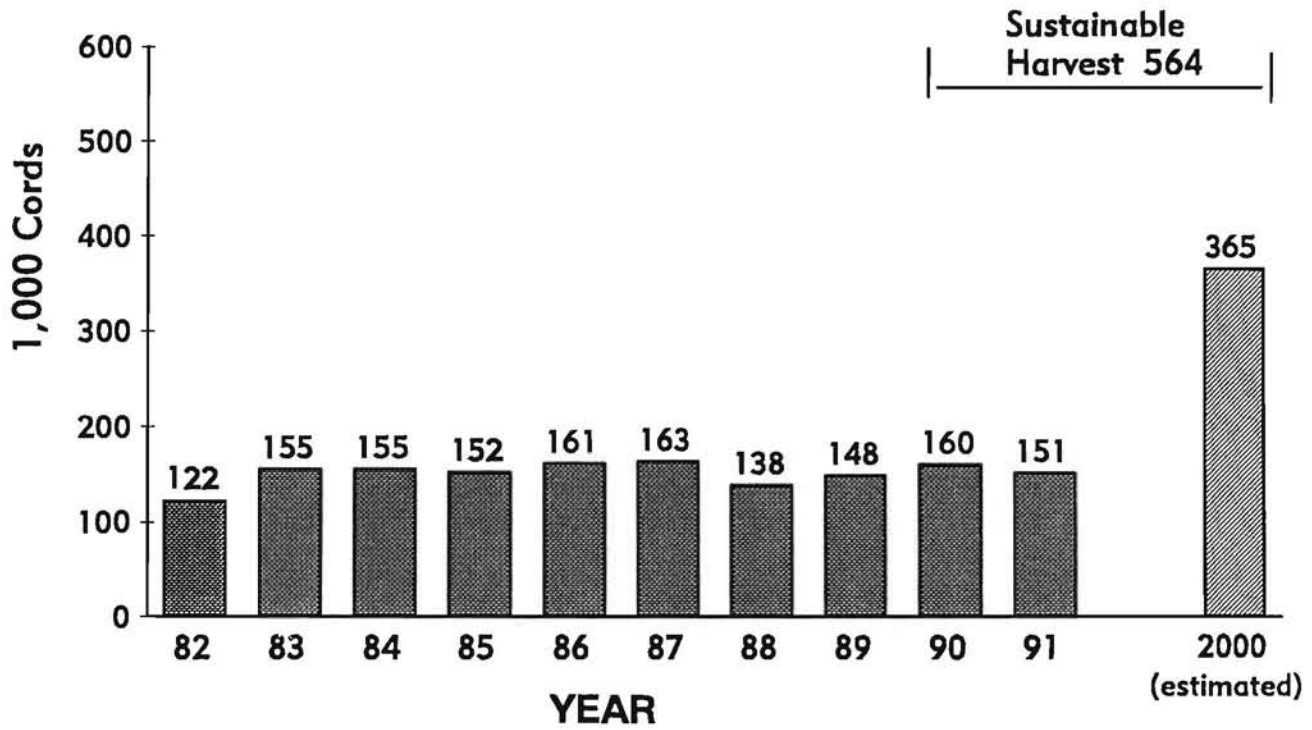
**1992 Harvest..... 405,000 cds.**

**2000 Harvest..... 463,000 cds.**

### *Major Changes:*

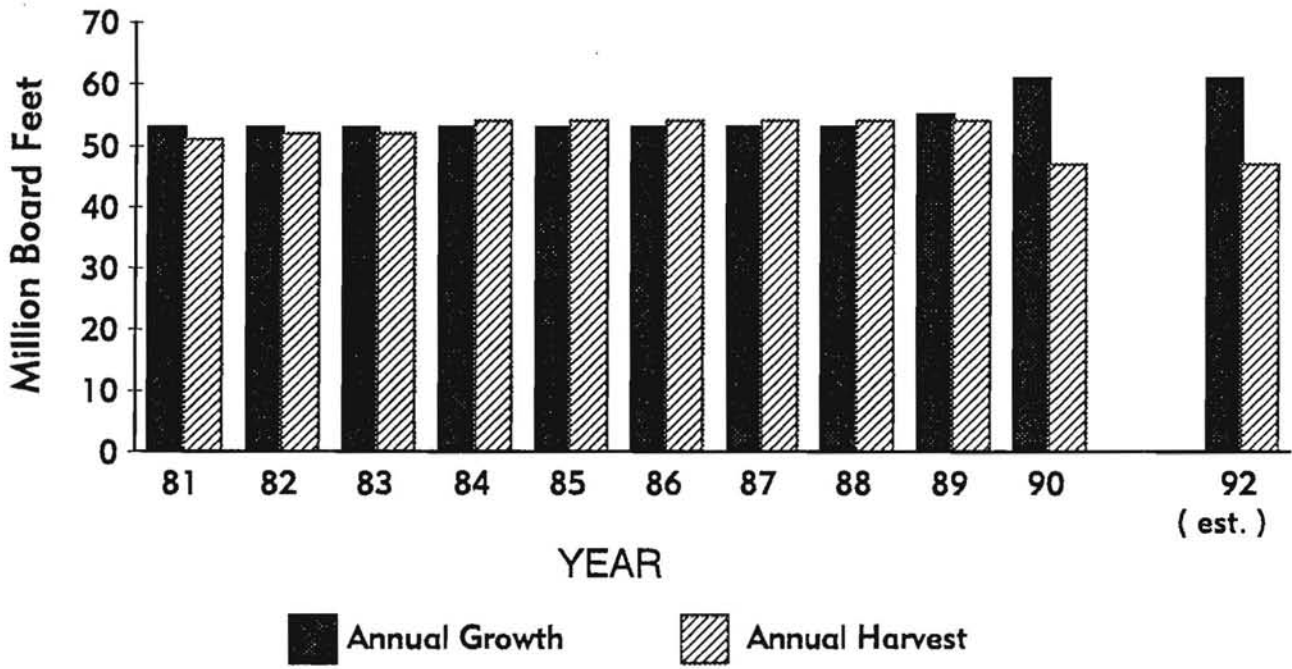
- BCC - 35
- Potlatch (Paper) + 70
- Potlatch (OSB) + 10
- Export + 5
- Sawbolts + 5

**BIRCH HARVEST in MINNESOTA : ACTUAL & PROJECTED  
COMPARED to SUSTAINABLE HARVEST LEVEL  
- from Timberland -**



# RED OAK SAWTIMBER HARVEST & GROWTH

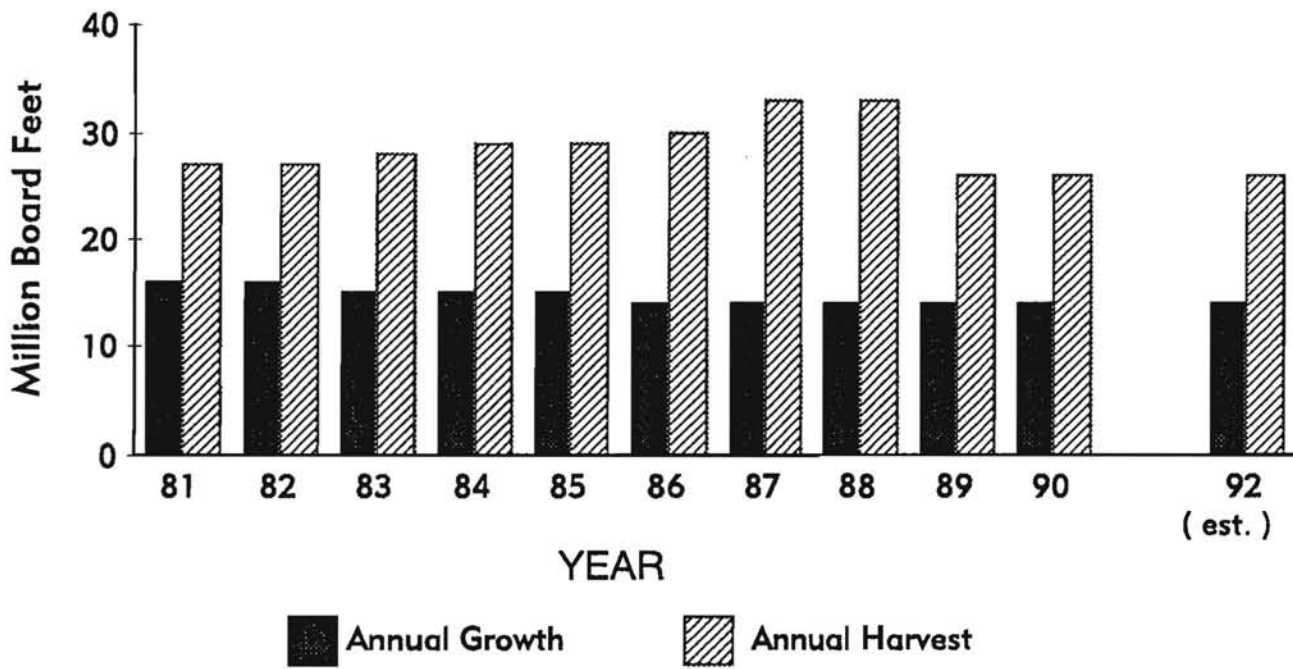
- Minnesota Statewide -

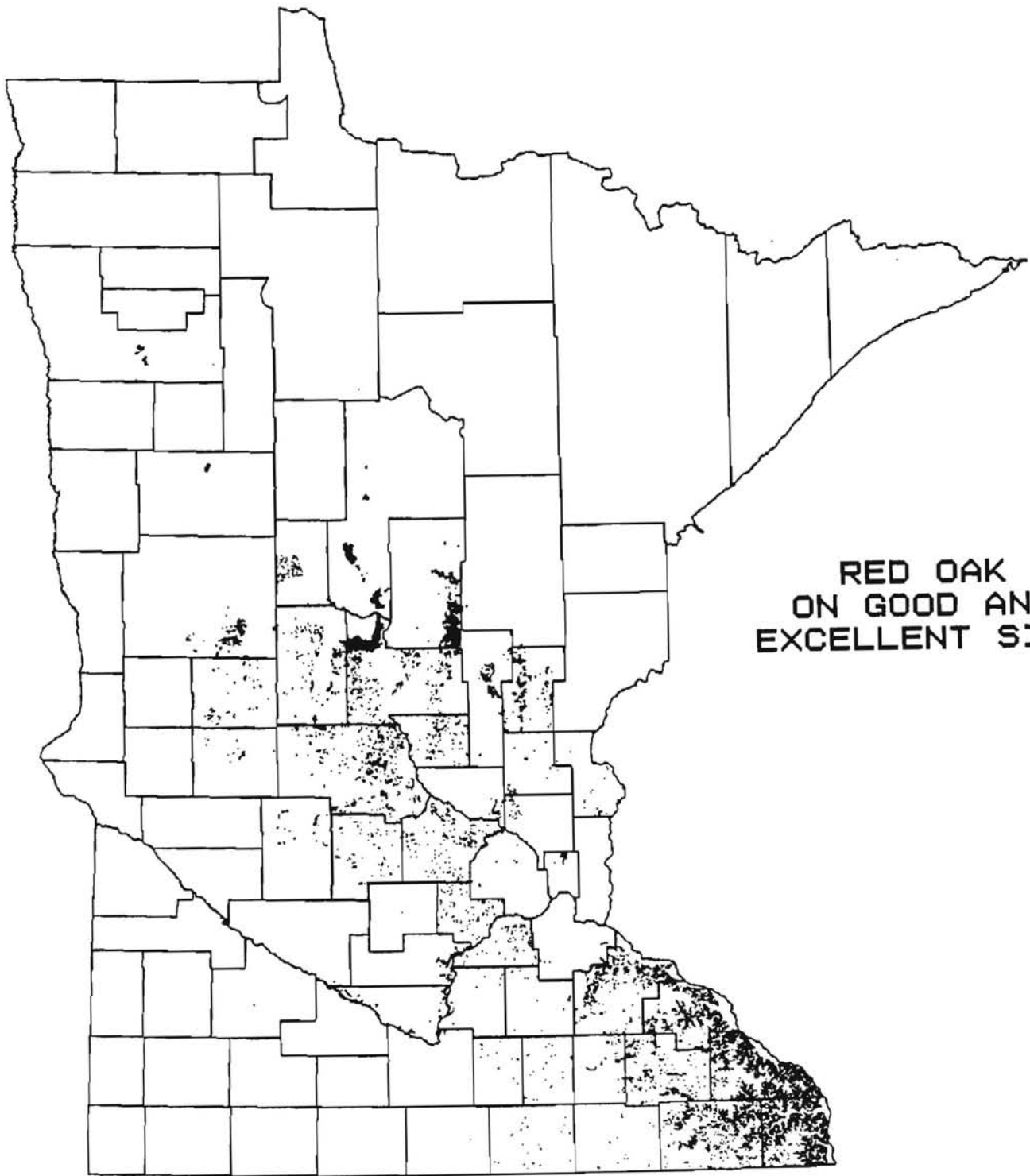




# RED OAK SAWTIMBER HARVEST & GROWTH

- Southern Minnesota -





**RED OAK  
ON GOOD AND  
EXCELLENT SITES**

## Minnesota Alternative Species—1992 & 2000 (In 000 cords)

Species	Sustainable Harvest 1990-2000	Harvest 1992	Annual Surplus 1992	Harvest 2000	Annual Surplus 2000
Balm-of-Gilead	283	86	197	150	133
Birch	564	162	402	365	199
Tamarack	121	2	119	10	111
Pine	590	405	<u>185</u>	463	<u>127</u>
			<u>903</u>		<u>570</u>

# MINNESOTA : ANNUAL RECOMMENDED HARVEST

( 1990 - 2000 )

Based on 1990 Survey, Statewide all Ownerships

5/13/92

Draft

( in 1,000 cords )

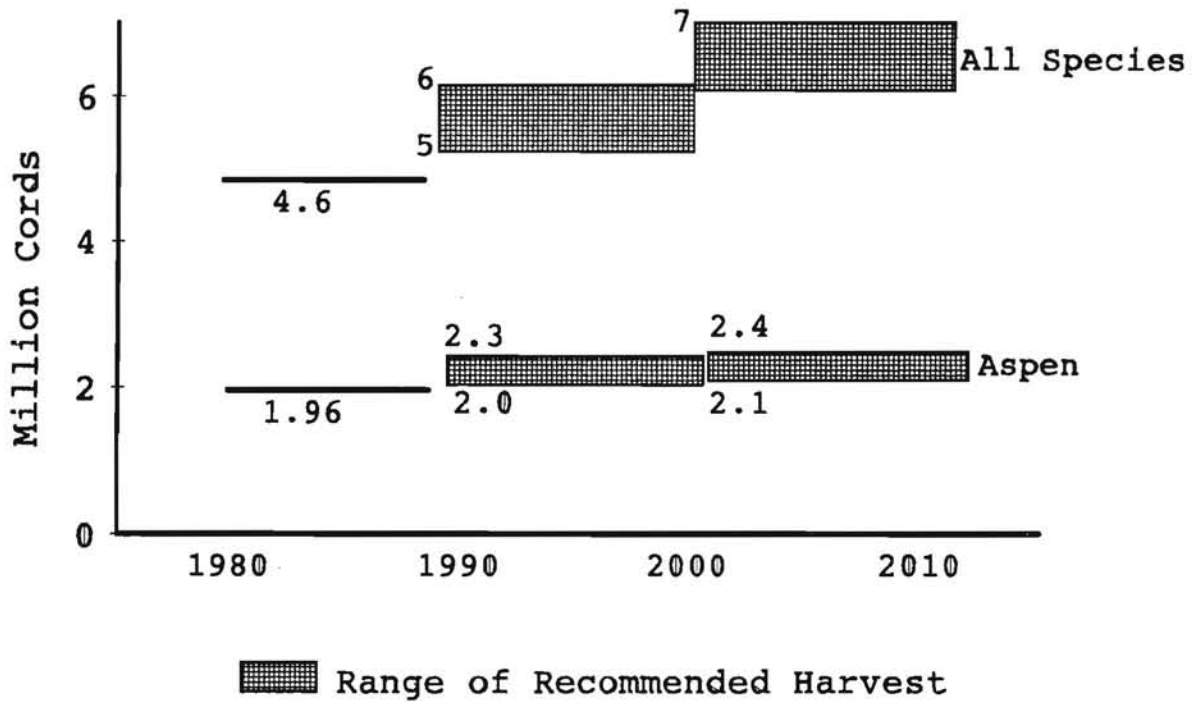
Major Species	(Live Trees)		Subtotal	Adjustment	Total
	Growing Stock	Nongrowing Stock			
Jack Pine	201.2	7.0	208.2	8.7 #	216.9
Red Pine	169.1	1.7	170.8	112.0 #	282.8
White Pine	77.2	3.4	80.6	9.8 #	90.4
White Spruce	114.7	1.6	116.3		116.3
Blk Spruce	185.3	3.0	188.3		188.3
Balsam Fir	376.4	8.3	384.7		384.7
Tamarack	114.4	6.5	120.9		120.9
Cedar	150.7	28.2	178.9		178.9
Other Softwds	1.1		1.1		1.1
White Oak	163.7	51.4	215.1		215.1
Red Oak	213.9	37.9	251.8		251.8
Basswood	174.5	20.9	195.4		195.4
Hard Maple	99.4	32.3	131.7		131.7
Soft Maple	114.1	36.9	151.0		151.0
Elm	71.3	15.3	86.6		86.6
Ash	182.0	17.8	199.8		199.8
Aspen	1,928.7	235.3	2,164.0		2,164.0
Birch	573.0	53.9	626.9	-62.7 **	564.2
Balm	266.3	16.8	283.1		283.1
Other Hardwoods	91.9		91.9		91.9
<b>Total</b>	<b>5,268.9</b>	<b>578.2</b>	<b>5,847.1</b>	<b>67.8</b>	<b>5,915.0</b>

# Volume available from thinning red pine stands ( age 31-100 years).

\*\* Birch : 10% volume decline due to the recent mortality.

# CURRENT & PROJECTED RECOMMENDED HARVEST LEVELS

- Minnesota Statewide -



# Total Minnesota Hardwood Harvest by Species by Year From Commercial Forestland (Thousand Cords)

Year	Aspen	Birch	Balm/ Gilead	Ash	Oak	Elm	Bass- wood	Maple	Cotton- wood	Other Hard- woods	Total Hard- woods
1980	982.2	133.5	46.5	49.4	250.3	91.5	12.1	43.1	6.0	?	1,614.6
1981	1,084.1	129.4	51.7	49.2	250.3	91.2	12.2	42.8	6.0	?	1,716.9
1982	1,148.7	121.7	55.0	52.3	250.5	91.3	12.1	42.7	6.0	?	1,780.3
1983	1,655.9	154.8	69.6	81.7	327.8	195.6	14.3	41.4	9.7	?	2,550.8
1984	1,793.2	154.2	63.1	81.8	327.8	195.7	14.3	41.4	9.7	?	2,681.2
1985	1,625.5	152.2	49.2	81.6	327.8	195.6	14.3	41.3	9.7	?	2,497.2
1986	1,733.4	160.7	48.0	81.4	327.8	195.5	14.3	41.0	9.7	?	2,611.8
1987	1,842.4	163.4	43.1	81.4	327.8	195.5	14.3	40.9	9.7	?	2,718.5
1988	1,737.5	137.4	46.9	73.1	299.6	97.8	32.3	64.1	7.3	2.2	2,498.2
1989	1,846.4	147.5	47.8	71.0	299.6	97.8	32.3	64.7	7.4	2.2	2,616.7
1990	1,938.5	159.8	53.4	71.5	282.0	87.8	36.3	73.4	7.6	2.8	2,713.1
1991	1,978.1	150.6	69.9	71.4	282.0	87.8	36.2	74.3	7.6	2.8	2,760.7
1992	2,265.0	162.0	86.0	75.0	282.0	88.0	40.0	66.0	8.0	3.0	3,075.0

(Includes pulpwood, sawtimber, and fuelwood.)

# Total Minnesota Softwood Harvest by Species by Year From Commercial Forestland (Thousand Cords)

Year	Spruce	Balsam	Tamarack	Cedar	Red Pine	White Pine	Jack Pine	Total Soft-Woods
1980	180.0	131.1	45.0	26.4	79.7	20.3	220.0	702.5
1981	137.5	120.8	32.5	26.4	81.1	24.8	210.6	633.7
1982	143.3	125.9	47.1	26.4	84.0	27.3	237.2	691.2
1983	100.4	95.9	28.4	16.2	103.2	41.4	156.6	542.1
1984	123.0	151.4	13.8	16.2	122.1	39.2	188.2	653.9
1985	116.3	127.6	11.3	16.2	105.4	30.2	162.5	569.5
1986	103.7	106.8	15.2	16.2	112.4	33.8	153.4	541.5
1987	106.6	118.2	10.8	16.2	102.5	30.5	138.6	523.4
1988	162.2	181.9	11.5	8.2	133.6	43.5	170.7	711.6
1989	179.4	209.8	5.7	8.2	136.8	44.0	177.3	761.2
1990	192.5	207.9	5.3	11.9	105.0	35.9	177.0	735.5
1991	154.6	207.4	4.5	7.5	121.5	32.7	238.3	766.5
1992	164.9	197.6	2.3	7.5	134.0	36.1	235.1	777.5

(Includes pulpwood, sawtimber, and fuelwood.)

# Total Minnesota Wood Harvest of Hardwoods and Softwoods by Year From Commercial Forestland (Thousand Cords)

Year	Hardwoods	Softwoods	Total
1980	1,614.6	702.5	2,317.1
1981	1,716.9	633.7	2,350.6
1982	1,780.3	691.2	2,471.5
1983	2,550.8	542.1	3,092.9
1984	2,681.2	653.9	3,335.1
1985	2,497.2	569.5	3,066.7
1986	2,611.8	541.5	3,153.3
1987	2,718.5	523.4	3,241.9
1988	2,498.2	711.6	3,209.8
1989	2,616.7	761.2	3,377.9
1990	2,713.1	735.5	3,448.6
1991	2,760.7	766.5	3,527.2
1992	3,073.3	777.5	3,850.8



**Minnesota 1989 Fuelwood Harvest  
From Commercial Forest Land  
(Thousand Cords)**

Species	Survey Unit				Total
	I	II	III	IV	
Oak	9.4	40.9	123.5	17.6	191.4
Birch	32.5	16.2	23.4	7.3	79.4
Ash	8.2	8.2	12.2	24.3	52.9
Elm	1.3	9.3	50.1	21.0	81.7
Maple	12.0	6.8	23.2	5.1	47.1
Aspen	12.2	20.4	10.4	3.0	46.0
Basswood	<u>.1</u>	<u>1.0</u>	<u>.9</u>	<u>.2</u>	<u>2.2</u>
Sub-Total Hardwoods	<u>75.7</u>	<u>102.8</u>	<u>243.7</u>	<u>78.5</u>	<u>500.7</u>
W. Pine	.4	1.0	.5	.1	2.0
R. Pine	.9	2.3	1.1	.1	4.4
J. Pine	1.4	3.3	1.5	.2	6.4
Spruce	.1	.3	.4	.1	2.0
Balsam Fir	.8	.5	1.2	.1	2.6
Tamarack	--	.1	.3	.1	.5
Cedar	--	<u>.2</u>	<u>.5</u>	--	<u>.7</u>
Sub-Total Softwoods	<u>4.2</u>	<u>7.7</u>	<u>6.0</u>	<u>.7</u>	<u>18.6</u>
Total	<u>79.9</u>	<u>110.5</u>	<u>249.7</u>	<u>79.2</u>	<u>519.3</u>

## STUMPAGE VALUE OF MINNESOTA'S 1990 TIMBER HARVEST

	CDS(M) PULPWOOD	PRICE /CD	PULPWOOD VALUE	MBF SAWLOG	PRICE /MBF	SAWLOG VALUE
R. PINE	18.7	\$13.04	\$243,848	40,426	\$93.55	\$3,781,852
W. PINE	4.6	\$13.04	\$59,984	14,440	\$93.55	\$1,350,862
J. PINE	114.2	\$11.34	\$1,295,028	28,787	\$62.83	\$1,808,687
SPRUCE	179.7	\$12.09	\$2,172,573	5,268	\$54.34	\$286,263
B. FIR	197.3	\$6.49	\$1,280,477	4,128	\$20.54	\$84,789
TAM.	4.4	\$4.61	\$20,284	188	\$19.18	\$3,606
CEDAR	4.4	\$9.76	\$42,944	3,381	\$29.63	\$100,179
ASPEN	1,711.1	\$6.03	\$10,317,933	119,664	\$23.34	\$2,792,958
BIRCH	22.7	\$3.69	\$83,763	29,621	\$20.87	\$618,190
R. OAK	0			37,220	\$73.40	\$2,731,948
W. OAK	0			7,759	\$73.40	\$1,569,511
WALNUT	0			1,181	\$900.00	\$1,062,900
MAPLE	19.6	\$5.58	\$109,368	3,378	\$37.48	\$126,607
BASS.	0.1	\$5.58	\$558	16,811	\$37.48	\$630,076
ELM	0			2,985	\$38.77	\$115,728
ASH	0.1	\$3.82	\$382	9,103	\$49.44	\$450,052
COTWD	0			3,749	\$14.64	\$54,885
FIREWD	535.2	\$5.00	\$2,676,000			
OTHER	0			6,151	\$54.34	\$334,245
<b>TOTAL</b>	<b>2,812.1</b>		<b>\$18,305,142.00</b>	<b>334,240</b>		<b>\$17,903,338.00</b>
<b>GRAND TOTAL</b>			<b>3,448,600 CDS.*</b>			<b>\$36,208,480.00</b>

Prices from 1990 Public Stumpage Price Review - Walnut & Firewood prices estimated  
 - Cottonwood price assumed to be the same as that reported for Balm of Gilead  
 - Balm of Gilead volume is combined with Aspen

\* - Total of pulpwood & sawlogs (1 MBF = 2 CDS)

## Mill Delivered Value of Minnesota's 1990 Timber Harvest

	Pulpwood			Sawtimber		
	Harvest Pulpwood (000 cords)	Price Per Cord	Pulpwood Value	Harvest Sawlogs (MBF)	Price Per MBF	Sawlog Value
Red Pine	18.7	\$53.15	\$993,905	40,426	\$164	\$6,629,864
White Pine	4.6	\$53.15	\$244,490	14,440	\$171	\$2,469,240
Jack Pine	114.2	\$53.15	\$6,109,700	28,787	\$127	\$3,655,949
Spruce	179.7	\$76.15	\$13,684,155	5,268	\$144	\$758,592
Balsam Fir	197.3	\$64.10	\$12,646,930	4,128	\$116	\$478,848
Tamarack	4.4	\$55.20	\$242,880	188	\$125	\$23,500
Cedar	4.4	\$55.20	\$242,880	3,381	\$97	\$327,957
Aspen	1,711.1	\$42.20	\$72,208,420	119,664	\$90	\$10,769,760
Birch	22.7	\$34.25	\$777,475	29,621	\$116	\$3,436,036
Red Oak	0.0			37,220	\$238	\$8,858,360
White Oak	0.0			7,759	\$154	\$1,194,886
Walnut	0.0			1,181	\$3,000	\$3,543,000
Maple	19.6	\$34.25	\$671,300	3,378	\$116	\$391,848
Basswood	0.1	\$34.25	\$3,425	16,811	\$135	\$2,269,485
Elm	0.0			2,985	\$130	\$388,050
Ash	0.1	\$34.25	\$3,425	9,103	\$137	\$1,247,111
Cottonwood	0.0			3,749	\$90	\$337,410
Fuelwood	535.2	\$70.00	\$37,464,000	0		
Other	0.0			6,151	\$125	\$768,875
<b>Total</b>	<b>2,812.1</b>		<b>\$145,292,985</b>	<b>334,240</b>		<b>\$47,885,821</b>
<b>Grand Total</b>			<b>3,448,600 CDS*</b>			<b>\$193,178,806</b>

Prices from 1990 Price Report—Walnut & Firewood prices estimated.

\*Total of pulpwood & sawlogs (1 MBF = 2 CDS)

# Average Prices Received for Stumpage Sold by Public Land Agencies in Minnesota: 1984-1992

(Compiled by Doug Ford, Forest Economist, DNR-Forestry)

## Pulpwood (\$'s per cord)

Species	1984	1985	1986	1987	1988	1989	1990	1991	1992 <sup>a</sup>
Aspen	\$3.41	\$3.44	\$3.32	\$3.35	\$3.55	\$4.53	\$6.09	\$6.61	\$7.25
Balm	2.40	2.00	2.33	2.72	2.31	2.88	3.35	3.58	4.51
Birch	3.91	2.18	1.46	1.68	1.96	2.64	3.69	2.95	4.19
Ash	4.00	3.26	2.96	2.81	3.05	3.76	3.82	4.19	3.96
Oak	4.59	5.32	3.72	3.46	3.88	4.66	4.89	3.79	3.57
Mixed Hardwoods	3.98	3.00	3.10	2.96	2.37	2.77	5.58	3.34	4.32
Balsam	3.62	2.97	2.47	2.72	3.49	4.15	6.49	6.69	8.09
W. Spruce	12.69	10.25	7.42	6.35	9.29	10.61	12.42	13.27	16.46
B. Spruce	12.69	9.29	10.21	9.90	9.39	9.72	11.88	12.32	12.78
Tamarack	5.30	4.85	4.72	4.85	4.67	4.50	4.61	4.13	4.29
Cedar	7.99	7.01	7.62	7.01	6.83	7.76	9.76	9.39	9.98
J. Pine	9.98	9.49	7.56	8.60	9.69	9.75	11.34	12.79	14.65
R. & W. Pine	9.38	9.28	7.97	7.34	7.48	14.79	13.04	14.06	8.14

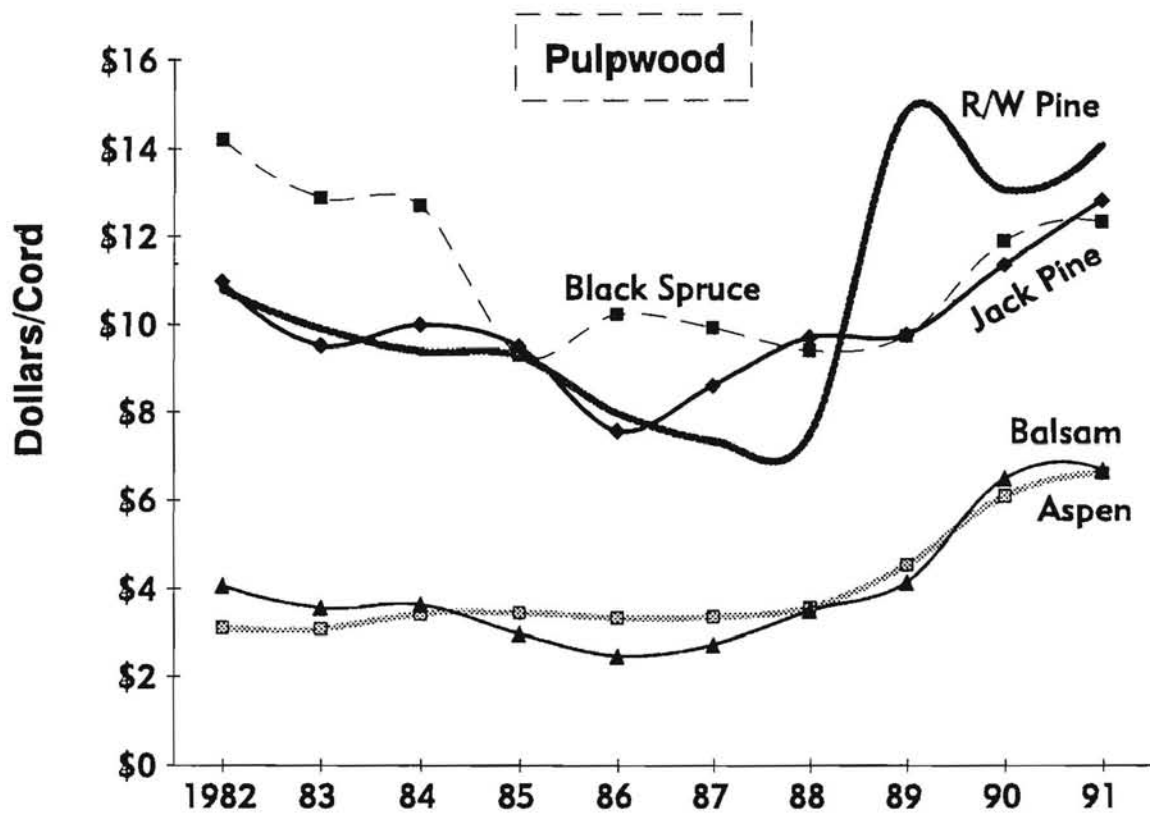
## Sawtimber (\$'s per MBF)

Species	1984	1985	1986	1987	1988	1989	1990	1991	1992 <sup>a</sup>
Aspen	\$14.29	\$13.79	\$14.94	\$16.51	\$15.90	\$17.83	\$23.34	\$23.66	\$28.53
Birch	12.97	9.90	11.92	16.74	18.70	18.87	20.87	24.24	26.38
Ash	37.45	25.74	30.61	38.01	38.75	36.52	49.44	63.37	90.63 <sup>c</sup>
Elm	33.90	35.37	27.10	28.41	34.25	35.12	38.77	36.26	36.93
Oak <sup>b</sup>	51.23	59.59	60.19	57.37	60.50	74.11	73.40	64.45	73.99
Mixed Hardwoods	38.06	21.36	19.74	21.07	30.10	31.49	37.48	33.40	40.27
Balsam	13.86	16.61	15.05	13.90	11.80	16.97	20.54	23.29	25.39
W. Spruce	31.43	35.74	23.80	23.93	35.65	38.94	54.34	42.58	45.48
Cedar	27.39	25.13	23.92	26.93	25.50	25.32	29.63	33.19	29.69
J. Pine	45.46	39.04	33.06	38.27	43.50	53.43	62.83	62.72	72.96
R. & W. Pine	60.29	62.34	52.95	57.70	66.85	88.90	93.55	101.13	108.84

<sup>a</sup> Pulpwood prices based on 1.3 million cords sold; sawtimber based on 169 MMBF.  
<sup>b</sup> Oak sawtimber prices mainly from public lands in northern Minnesota.  
<sup>c</sup> Black ash: includes veneer.

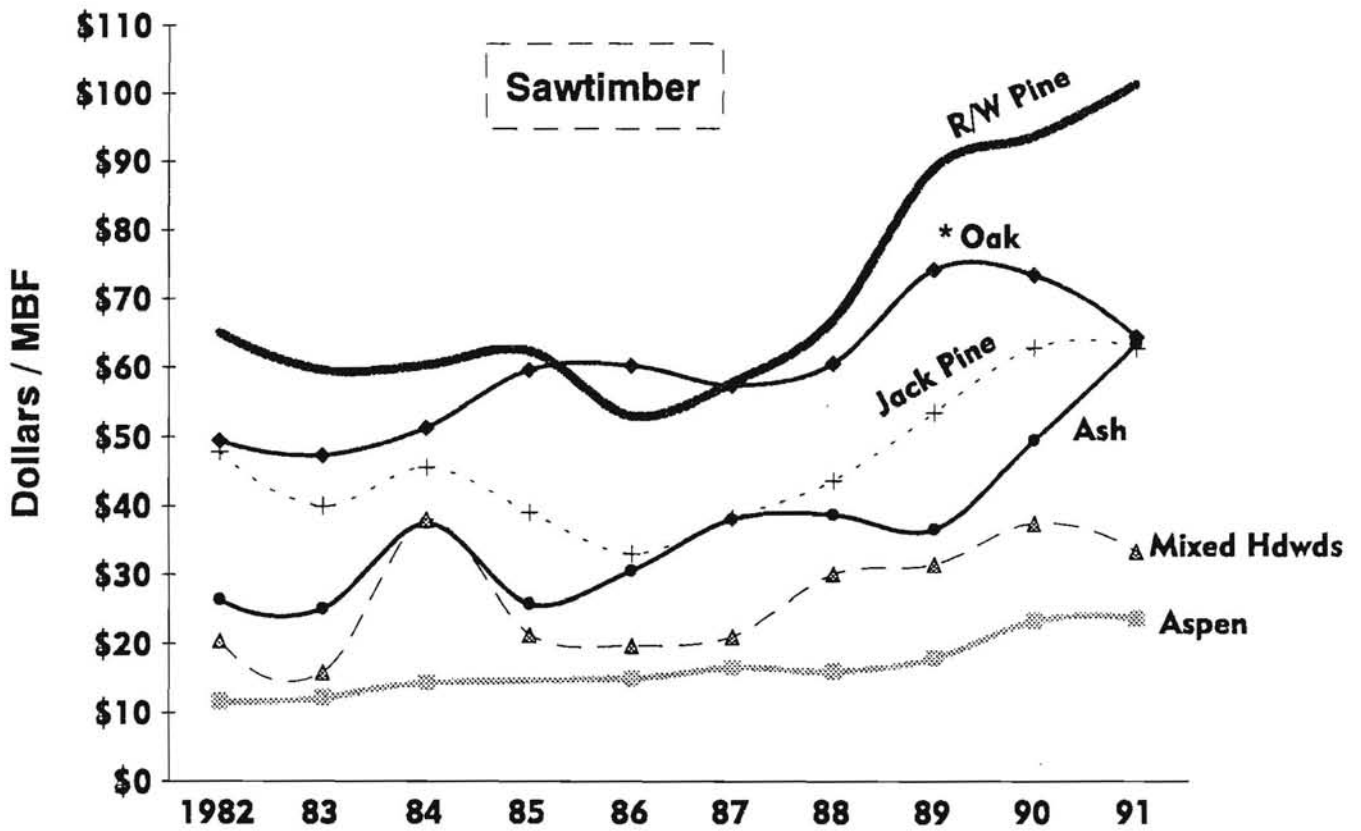
Average prices based on those reported by Minnesota counties, Chippewa and Superior National Forests, Bureau of Indian Affairs, and Minnesota DNR-Forestry.

**AVERAGE PRICES RECEIVED for STUMPAGE SOLD by PUBLIC LAND AGENCIES in MINNESOTA: 1982 - 1990**



DNR-Forestry

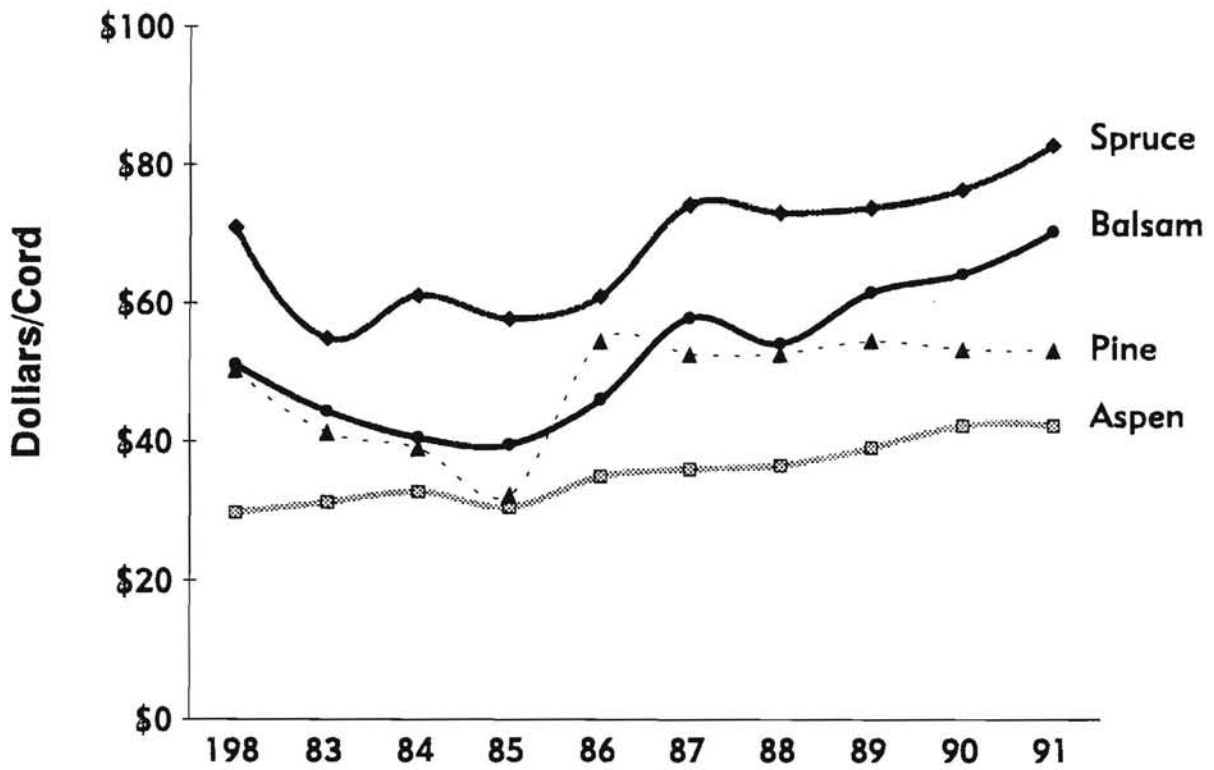
**AVERAGE PRICES RECEIVED for STUMPAGE SOLD by PUBLIC LAND AGENCIES in MINNESOTA: 1982 - 1990**



\* Oak sawtimber prices mainly from public lands in northern Minnesota.

DNR-Forestry

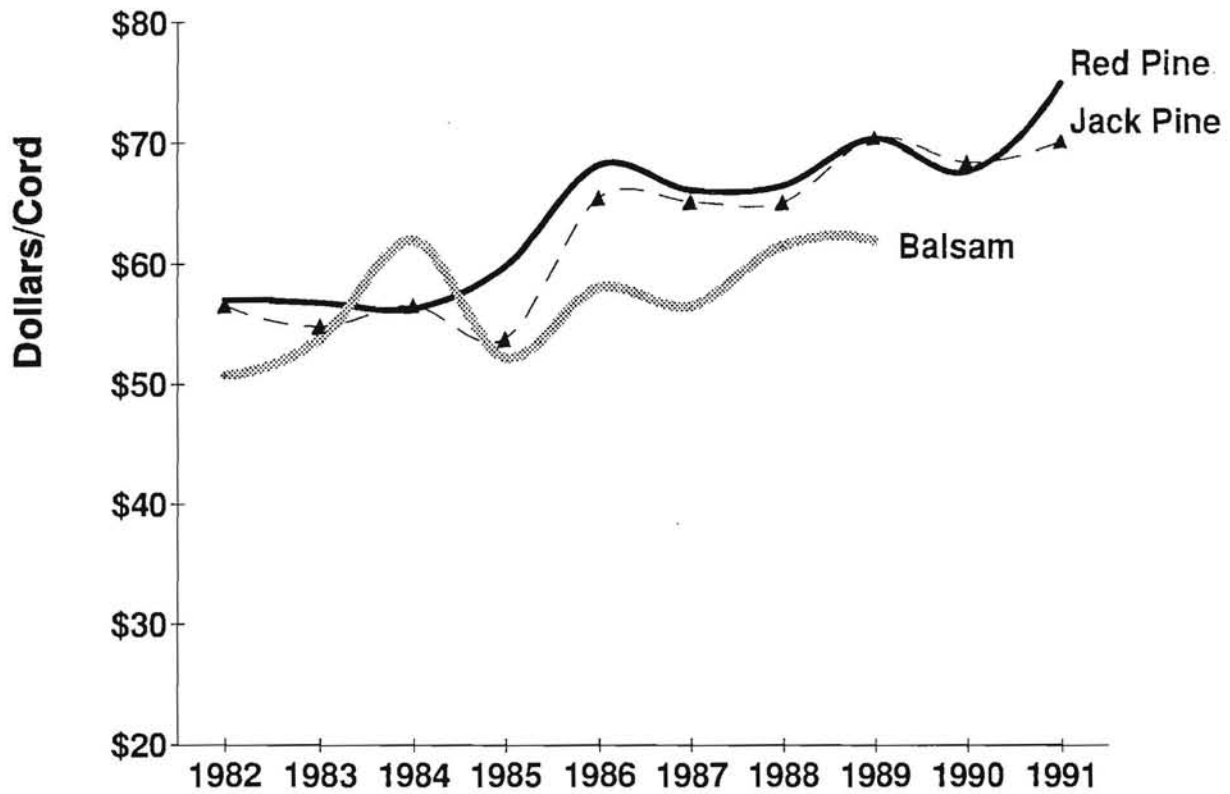
**MINNESOTA FOB MILL PRICE TREND  
for 100" PULPWOOD**



DNR-Forestry

## MINNESOTA FOB MILL PRICE TREND

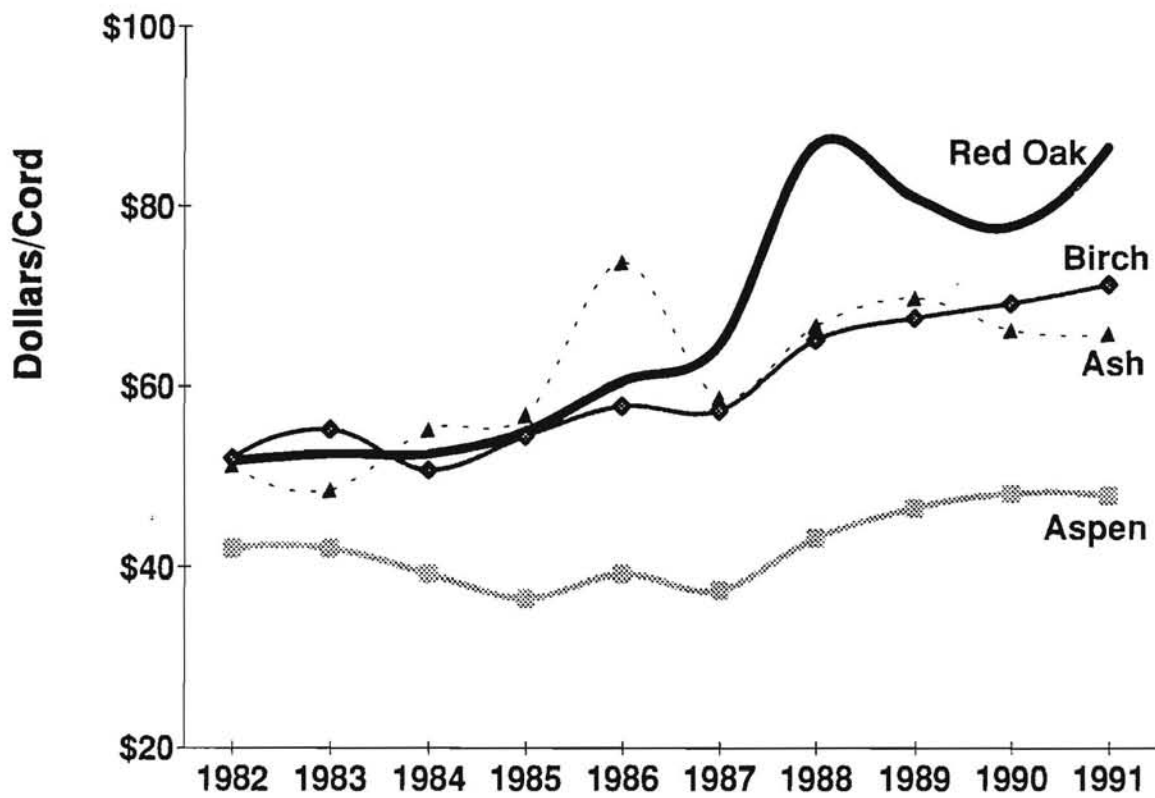
for 100" Softwood Sawbolts



DNR-Forestry



### MINNESOTA FOB MILL PRICE TREND for 100" Hardwood Sawbolts



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