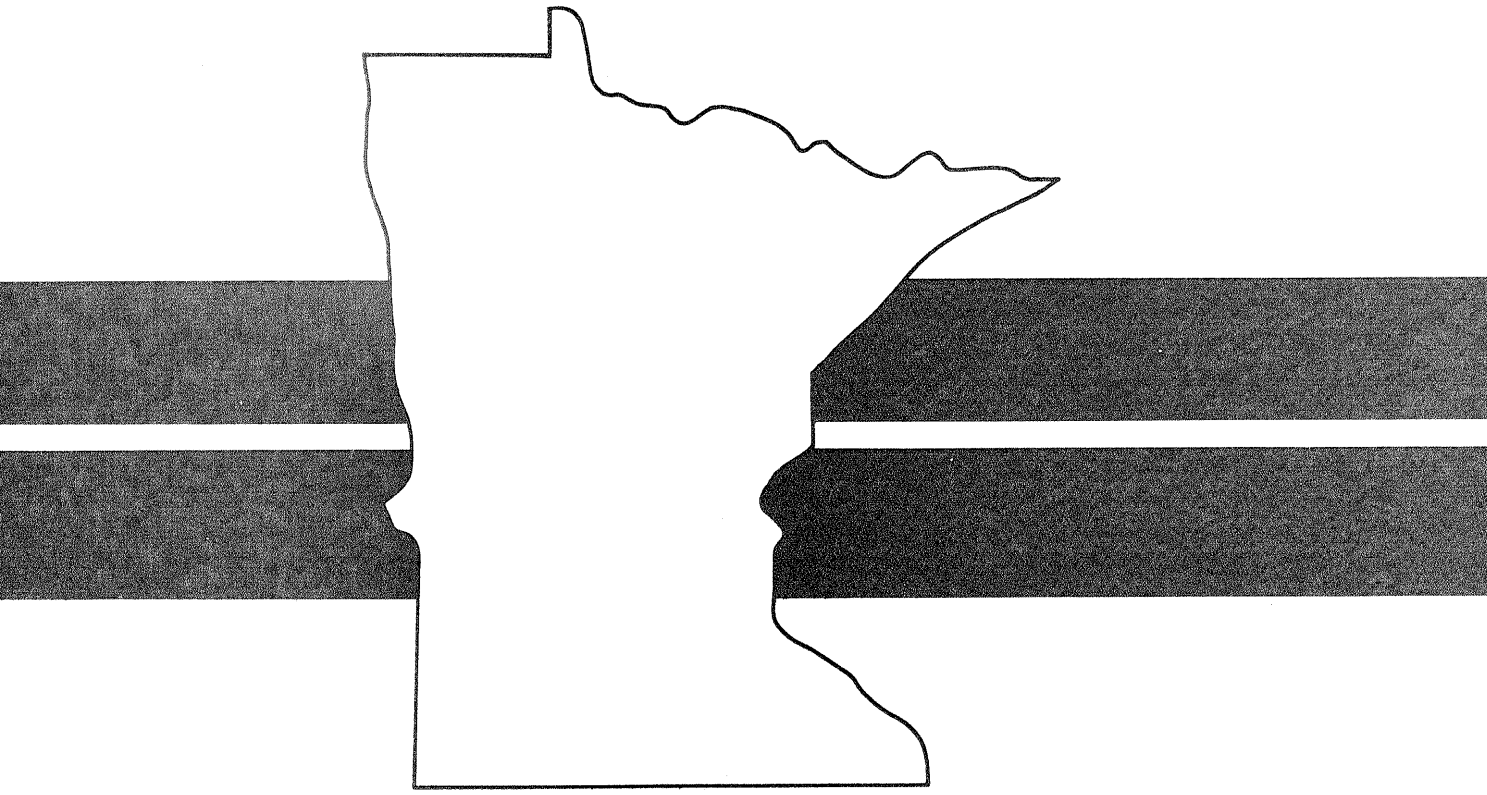
USDA FOREST SERVICE
RESOURCE BULLETIN **NC-42**

# *Minnesota's Tax-forfeited Land:*



# *Some TRENDS in timber harvested and stumpage prices*

David C. Lothner
Edwin Kallio
David T. Davis

North Central Forest Experiment Station
Forest Service, U.S. Department of Agriculture

## ACKNOWLEDGMENT

The authors wish to thank the individual county land commissioners and auditors, the office of Iron Range Resources and Rehabilitation, and the Minnesota Department of Natural Resources for their cooperation.

**North Central Forest Experiment Station**
**Robert A. Hann, Director**
**Forest Service — U.S. Department of Agriculture**
**1992 Folwell Avenue**
**St. Paul, Minnesota 55108**
**Manuscript approved for publication March 26, 1979**
**1979**

# MINNESOTA'S TAX-FORFEITED LAND: SOME TRENDS IN TIMBER HARVESTED AND STUMPAGE PRICES

**David C. Lothner,** *Economist,*
**Edwin Kallio,** *Principal Market Analyst,*
*and* **David T. Davis,** *Forestry Technician*
*Duluth, Minnesota*

The area of commercial forest land in Minnesota has been decreasing steadily during recent years.[1] Consequently, interest has been increasing in the availability of timber from all land — both public and private. And tax-forfeited land is no exception.[2] Concern focuses on the following questions: How much timber has been harvested from tax-forfeited land in Minnesota? What direction will harvest trends take in the future? Could these trends be markedly increased if greater investments were made in county forest land? Answers to these questions are difficult to secure. However, some insight can be gained by examining past trends in harvest levels from county land.[3,4]

The purpose of this bulletin is to illustrate recent trends in the volume and value of timber harvested from county-administered land and to highlight the significant changes for the 1960-1975 period.

## All County Trends

Total timber harvested from tax-forfeited land in the 16 northern Minnesota counties — Aitkin, Becker, Beltrami, Carlton, Cass, Clearwater, Cook, Crow Wing, Hubbard, Itasca, Koochiching, Lake, Mahnomen, Pine, St. Louis, Wadena — increased from 145,000 cord equivalents in 1960 to 235,000 cord equivalents in 1975 (fig. 1)[5]. Although vacillating from year to year, the average rate of increase in total harvest averaged about 3 percent annually. Most of the timber harvested is pulpwood, but some sawtimber and bolts are also harvested. For example, in 1975, the 235,000 cord equivalents consisted of 213,600 cords of pulpwood, 13,000 cords of bolts, and 8.5 million board feet of sawtimber. The all-time peak harvest during the period was 319,000 cord equivalents in 1974. This occurred simultaneously with the rapid economic expansion in the total economy prior to the 1975 recession.

Throughout the period, the harvest of hardwoods exceeded that of softwoods. The hardwoods increased from almost 84,000 cords or 58 percent of the total harvest in 1960 to 167,000 cords or 71 percent of the total harvest in 1975. The average rate of increase in hardwood harvest averaged about 5 percent per year for the period. Aspen

[1]*Unpublished 1975 Minnesota forest inventory results by the North Central Forest Experiment Station.*

[2]*This land, although commonly referred to as county land, is actually state land held in trust for the county governments. The land was once privately owned and went tax delinquent when the owners failed to pay the property taxes. Thus, it forfeited back to the state, which gave the provision for its management to the counties.*

[3]*Stone, Robert N. 1966. A third look at Minnesota's timber. U.S. Dep. Agric. For. Serv., Resour. Bull. NC-1, 64 p. U.S. Dep. Agric. For. Serv., North Cent. For. Exp. Stn., St. Paul, MN.*

[4]*Lothner, David C., Edwin Kallio, and David T. Davis. 1978. Minnesota's tax-forfeited land: some trends in acreages, sales, and prices. U.S. Dep. Agric. For. Serv., Resour. Bull. NC-37, 6 p. U.S. Dep. Agric. For. Serv., North Cent. For. Exp. Stn., St. Paul, MN.*

[5]*Statistics are based on data collected from the Iron Range Resources and Rehabilitation Board, State of Minnesota and the individual county offices.*

has always been the number one species harvested in terms of volume. Almost 76,000 cords or 93 percent of the hardwood volume harvested in 1960 was aspen. By 1975, 146,000 cords of aspen were harvested and this represented about 88 percent of the hardwood volume. Therefore, the hardwoods other than aspen appear to be gaining but are still of minor importance.

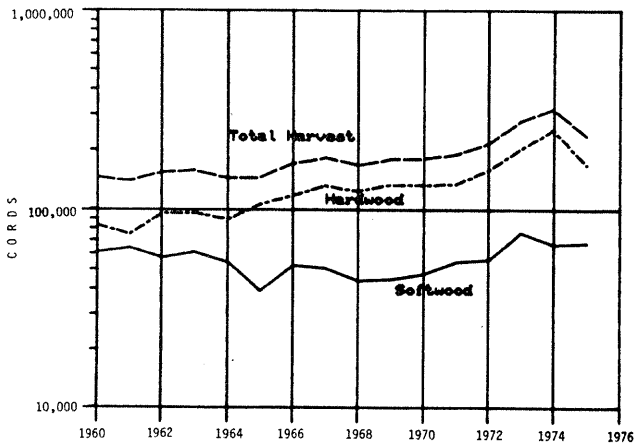



Figure 1.—*All species of timber harvested from county land in 16 northern Minnesota counties, 1960-1975.*

In 1960, about 61,000 cord equivalents of softwood were harvested; in 1975, almost 68,000 cord equivalents were harvested. Thus, the average rate of increase in the softwood harvest was <1 percent per year. However, looking at the entire period, the softwood harvest declined from 1960 to 1968 to a low of 44,000 cord equivalents and then steadily increased at a rate of about 6 percent from 1968 through 1975.

In contrast with the hardwoods, no single dominant softwood species was harvested. Jack pine, balsam fir, and the spruces are presently ranked in that order, accounting for 37, 34, and 18 percent of the total softwood harvest, respectively. Thus, these three account for about 89 percent of the total softwood harvest. (See the Appendix for a tabular breakdown of individual species harvested by year.)

The stumpage value of timber harvested in actual dollars from tax-forfeited land increased from about $310,000 in 1960 to about $671,000 in 1975 (fig. 2). Most of this increase took place after 1969.

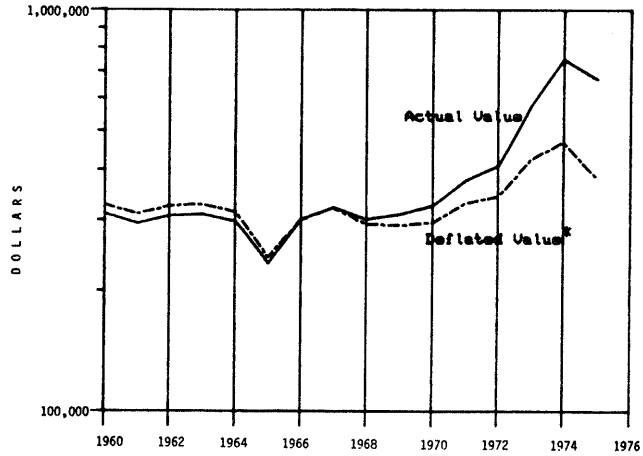



Figure 2.— *Value of all species of timber harvested from tax-forfeited land in 16 northern Minnesota counties, 1960-1975.*

Through the 1960's, the value of timber harvested in actual dollars remained essentially constant at around $300,000 per year and then in the 1970's began increasing sharply.

Most of the timber was sold informally upon request of loggers at appraised values determined by the county land department. Thus, there has been little competition based upon price for this material. Only four of the counties — Cass, Clearwater, Koochiching, and St. Louis — were selling timber on an auction basis and only Cass County used the auction sale to any significant degree. Thus, it is not surprising that the stumpage price of timber sold aggregated and weighted for all species has increased little in actual dollars and decreased in real (deflated) dollars.

During the 1960's the average price of timber per unit harvested actually decreased — from $2.15 per cord in 1960 to about $1.75 per cord in 1969 (fig. 3). After 1969, the value per cord in actual dollars began increasing and was $2.85 by 1975.

This trend is primarily due to: (1) a shift in the type of wood harvested — proportionally more low-value hardwoods (mainly aspen) and less high-value softwoods; and (2) the stumpage price of the more valuable softwood species (red and white pine, jack pine, spruce, and balsam fir) remained essentially constant throughout the 1960's and increasing in actual dollars only in the 1970's (fig. 3).

When the harvest is valued in real dollars using the wholesale price index for all commodities as a

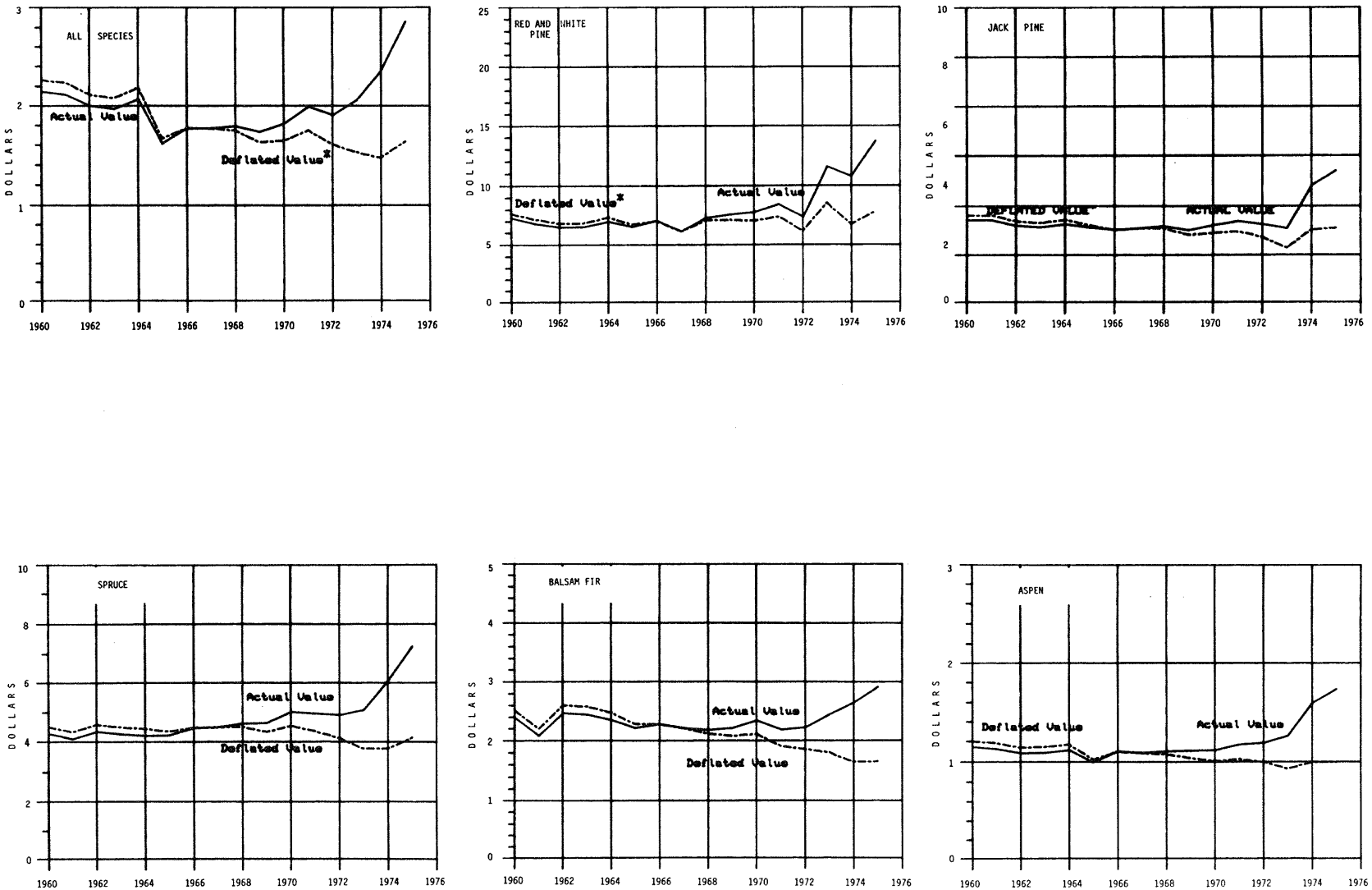



Figure 3.— *Average stumpage price per cord for timber harvested in 16 northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

deflator (base year is 1967), the trends in stumpage price become even more startling. The average price per unit aggregated and weighted for all species actually decreased in real dollars throughout the entire period. It was $2.27 per cord in 1960 (1967 dollars) and decreased steadily to $1.63 per cord by 1975. Again, the same two factors influence the decrease. First, the type of wood harvested shifted to proportionally more of the low-value hardwoods and less of the high-value softwoods. Second, the stumpage price in real dollars remained essentially constant or slightly declined throughout the entire period for the more valuable softwood species.

## Individual County Trends

The annual volumes of timber harvested from tax-forfeited land within individual counties differed greatly from year to year as well as from county to county. Six counties accounted for 81 percent of the total timber harvested from tax-forfeited land in 1975: Koochiching, 60,000 cords; St. Louis, 43,000 cords; Itasca, 40,000 cords; Cass, 29,000 cords; Beltrami, 14,000 cords; and Aitkin, 10,000 cords.

Timber volume harvested in St. Louis, Beltrami, and Aitkin Counties fluctuated from year to year but showed no discernable trend for the 1960 through 1975 period (fig. 4). Timber volume harvested in Cass, Koochiching, and Itasca Counties, on the other hand, increased at an annual rate of 12, 8, and 3 percent, respectively, during the period (fig. 4).

Many of the other northern Minnesota counties have been developing their timber management programs and together make a significant contribution to the total timber harvest.

How do these six individual counties compare with respect to the hardwood and softwood harvest mix? Aitkin, Koochiching, and St. Louis Counties harvested more hardwoods than softwoods each year during the period. In 1960, the softwood harvest in Itasca and Cass Counties was slightly higher than the hardwood harvest, but by 1965 in Itasca County and 1969 in Cass County hardwoods had become the predominant species group. In Beltrami County hardwoods and softwoods alternated as the predominantly harvested species group.

The big four counties, both in terms of area and harvest volumes (St. Louis, Itasca, Koochiching, and Cass), all increased their hardwood harvest share with respect to their total harvest during the period. They began the period with hardwood shares ranging from 45 to 60 percent and ended the period with hardwood shares ranging from 70 to 75 percent. Three of the big four counties had a substantial increase in the average annual rate of hardwood harvest. Cass County averaged 16 percent followed by Koochiching (9 percent), and Itasca (6 percent). St. Louis County, along with Aitkin and Beltrami, showed no discernable trend.

Only Cass and Koochiching Counties increased their softwood harvest during the period and both had average annual rates of increase of about 6 percent. Itasca County averaged a 7 percent rate of decrease for the first 10 years and averaged a 10 percent rate of increase for the last 5 years. Still, Itasca County was harvesting less softwoods at the end than it was at the beginning of the period. Beltrami County had little discernable softwood harvest trend although it fluctuated sharply from year to year. The softwood harvest in both Aitkin and St. Louis Counties decreased an average of about 3 percent per year during the period.

The average stumpage price trends for all timber sold by the individual counties is *not* substantially different than the trend for all sixteen counties combined. Of the six counties that accounted for most of the timber harvested, five — Aitkin, Cass, Itasca, Koochiching, and St. Louis — had a decreasing average stumpage price per unit in actual dollars during the 1960's (fig. 5). Only Beltrami County, which had alternating periods of softwoods and then hardwoods predominating its annual harvest, had average stumpage prices with no discernable trend during the 1960's (fig. 5). Average stumpage price increased for all six counties in the 1970's.

When the harvest is valued in real dollars, using the wholesale price index for all commodities as a deflator, the average stumpage price trends for the individual counties again is similar to the trend for all 16 counties combined. All counties, except Beltrami which shows no discernable trend, have a decreasing average stumpage price throughout the period.

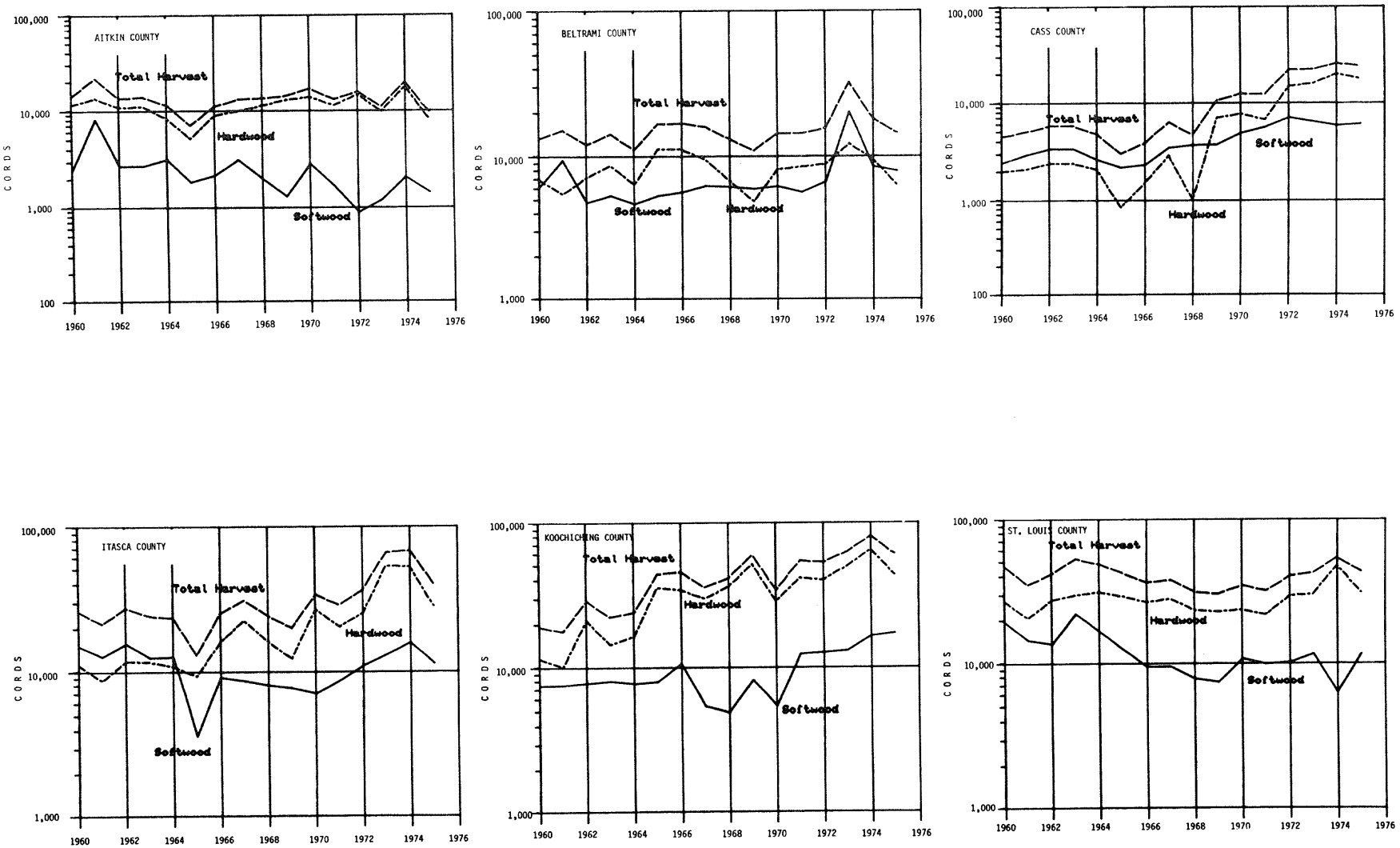



Figure 4.— *Timber harvested from county land in six northern Minnesota counties, 1960-1975.*

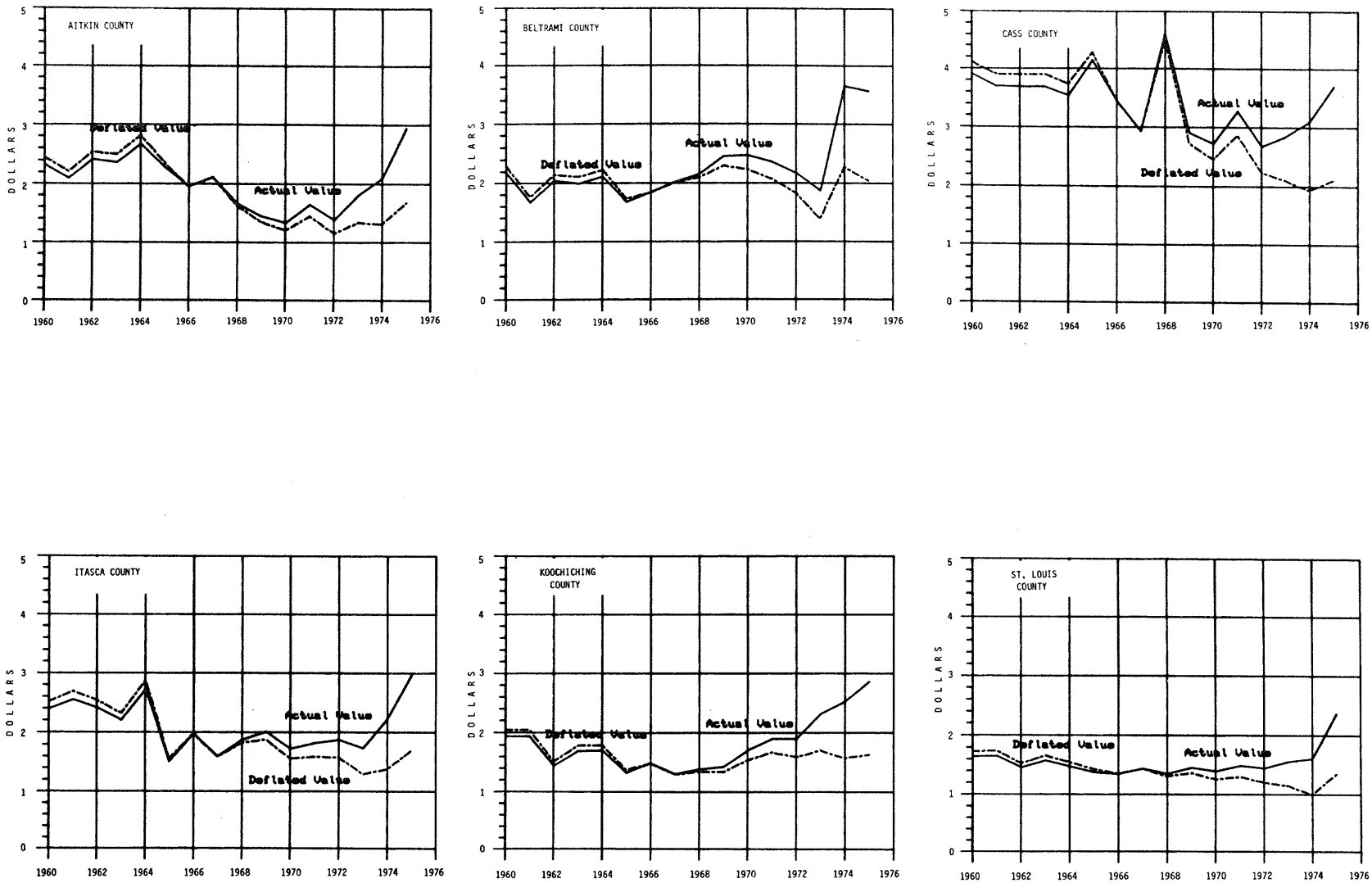



Figure 5.—*Average stumpage price per cord for timber harvested in six northern Minnesota counties, 1960-1975, all species. (Deflated value determined by wholesale price index (1967 = 100).)*

No discernable trend is apparent for the average stumpage prices in actual dollars for the individual softwood species within each county in the 1960's followed by an increasing trend in the 1970's (figs. 6, 7, 8, and 9). However, there are some notable exceptions. (1) The stumpage prices for the red and white pine, jack pine, and spruce categories in Beltrami County vary from the all-county aggregates. Red and white pine and jack pine prices vary greatly from year-to-year in the 1970's and show no discernable trend. Spruce prices appear almost constant with a sharp drop in 1975. (2) Jack pine stumpage prices in St. Louis County show no increase in the 1970's so no discernable trend is apparent throughout the 1960 to 1975 period. (3) Balsam fir stumpage prices in Aitkin and Cass Counties decreased in the 1960's before increasing in the 1970's to early 1960 levels by 1975. A further review of the information in figures 4 through 10 will permit the reader to make additional observations about the counties.

In summary, the total volume of timber harvested on county-administered tax-forfeited land has increased significantly from 1960 to 1975. This was primarily due to the increased harvest of aspen. Prices paid for stumpage generally did not change throughout the 1960's and increased slightly in the 1970's. When these prices are deflated to indicate real dollars, prices have actually declined slightly throughout the entire period.

# APPENDIX

TOTAL TIMBER HARVESTED
(Cords)
Sum of 16 Northern Minnesota Counties

**SOFTWOODS**

| Year | Red and White Pine | Jack Pine | Spruce | Balsam Fir | Tamarack | Cedar | Total Softwoods |
|---|---|---|---|---|---|---|---|
| 1960 | 2,116 | 23,113 | 13,976 | 18,339 | 2,374 | 1,326 | 61,244 |
| 1961 | 2,549 | 21,542 | 16,038 | 17,959 | 5,449 | 544 | 64,081 |
| 1962 | 2,926 | 26,639 | 11,228 | 13,923 | 2,717 | 16 | 57,449 |
| 1963 | 2,831 | 23,661 | 13,596 | 15,051 | 5,762 | 90 | 60,991 |
| 1964 | 4,269 | 19,371 | 14,206 | 11,623 | 4,747 | 73 | 54,289 |
| 1965 | 1,700 | 15,543 | 8,245 | 10,908 | 2,683 | 58 | 39,137 |
| 1966 | 1,678 | 22,781 | 10,375 | 15,612 | 1,665 | 264 | 52,375 |
| 1967 | 4,068 | 19,540 | 10,959 | 9,563 | 6,414 | 99 | 50,643 |
| 1968 | 3,747 | 22,881 | 6,875 | 6,015 | 4,250 | 285 | 44,053 |
| 1969 | 3,354 | 25,562 | 7,759 | 5,040 | 2,741 | 324 | 44,780 |
| 1970 | 3,280 | 23,753 | 8,139 | 7,173 | 4,947 | 195 | 47,487 |
| 1971 | 4,664 | 26,383 | 10,042 | 7,592 | 4,988 | 922 | 54,591 |
| 1972 | 6,156 | 25,526 | 10,618 | 11,380 | 1,743 | 340 | 55,763 |
| 1973 | 6,636 | 38,534 | 13,895 | 13,749 | 2,741 | 913 | 76,468 |
| 1974 | 5,918 | 24,676 | 14,989 | 17,277 | 2,652 | 1,378 | 66,890 |
| 1975 | 4,137 | 25,301 | 12,308 | 22,857 | 2,169 | 1,123 | 67,895 |

**HARDWOODS**

| Year | Aspen | Birch | Ash | Oak | Basswood | Other Hardwoods | Total Hardwoods | Total All Species |
|---|---|---|---|---|---|---|---|---|
| 1960 | 77,654 | 1,454 | 1,102 | 818 | 1,812 | 712 | 83,552 | 144,796 |
| 1961 | 65,248 | 3,749 | 897 | 1,595 | 2,449 | 1,154 | 75,092 | 139,173 |
| 1962 | 88,327 | 2,056 | 768 | 603 | 2,591 | 1,703 | 96,048 | 153,497 |
| 1963 | 87,833 | 2,409 | 785 | 2,054 | 1,509 | 1,847 | 96,437 | 157,428 |
| 1964 | 82,127 | 1,851 | 1,150 | 974 | 1,768 | 1,761 | 89,631 | 143,920 |
| 1965 | 94,879 | 1,171 | 942 | 1,059 | 851 | 7,412 | 106,314 | 145,451 |
| 1966 | 110,301 | 870 | 1,505 | 786 | 623 | 3,317 | 117,402 | 169,777 |
| 1967 | 122,545 | 1,803 | 1,691 | 904 | 818 | 3,781 | 131,542 | 182,185 |
| 1968 | 117,638 | 1,355 | 2,084 | 528 | 803 | 1,684 | 124,092 | 168,145 |
| 1969 | 127,247 | 867 | 1,105 | 668 | 470 | 3,814 | 134,171 | 178,951 |
| 1970 | 120,366 | 5,335 | 1,832 | 547 | 723 | 3,715 | 132,518 | 180,005 |
| 1971 | 119,516 | 6,163 | 1,739 | 1,834 | 921 | 4,858 | 135,031 | 189,622 |
| 1972 | 141,708 | 8,643 | 1,118 | 1,619 | 499 | 5,188 | 158,775 | 214,538 |
| 1973 | 171,646 | 7,189 | 1,517 | 1,189 | 341 | 17,271 | 199,153 | 275,621 |
| 1974 | 225,507 | 10,896 | 2,043 | 1,158 | 1,048 | 11,416 | 252,068 | 318,958 |
| 1975 | 146,360 | 8,054 | 1,504 | 1,855 | 371 | 9,097 | 167,241 | 235,136 |

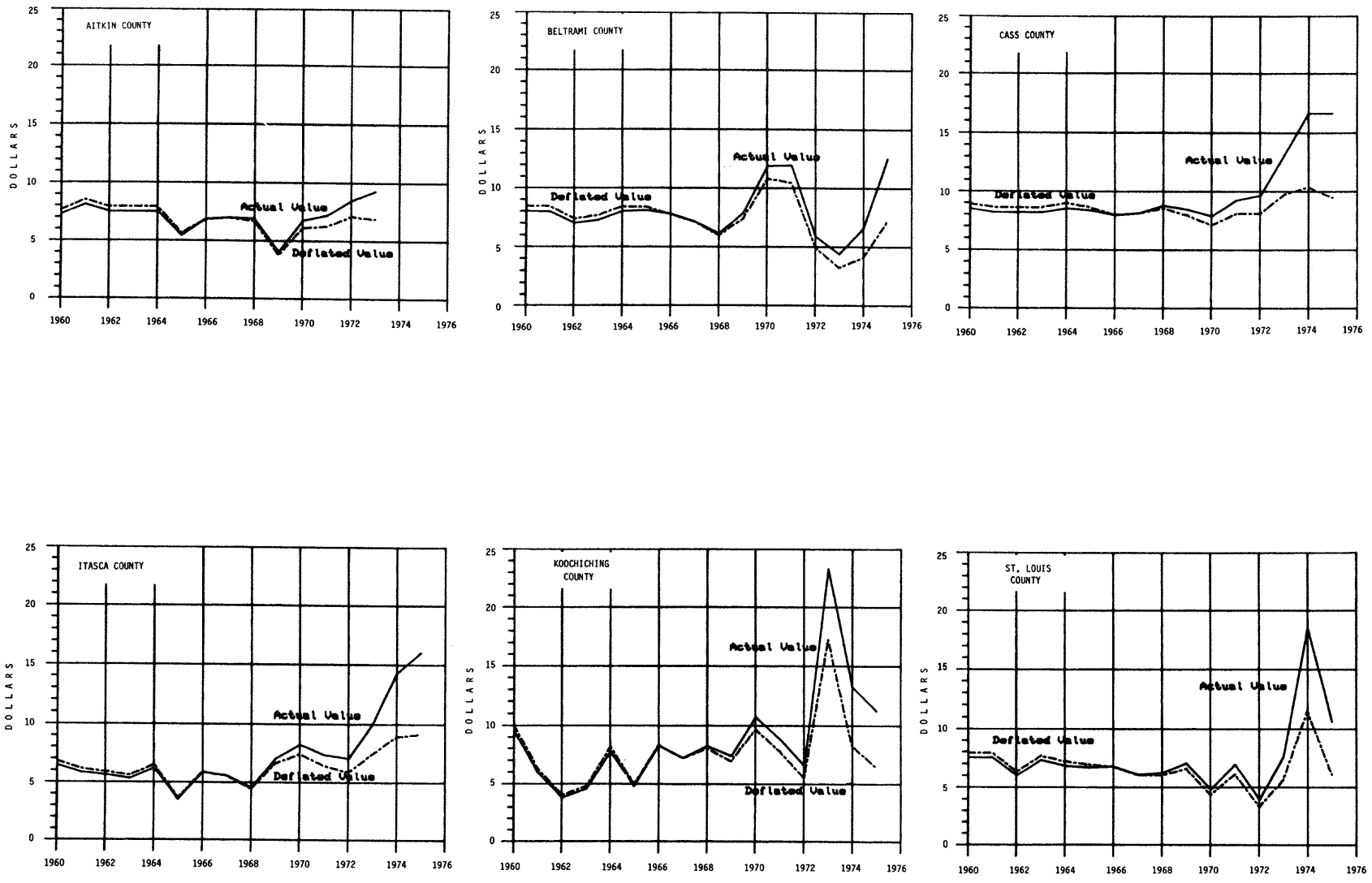



Figure 6.—*Average stumpage price per cord for red and white pine harvested in six northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

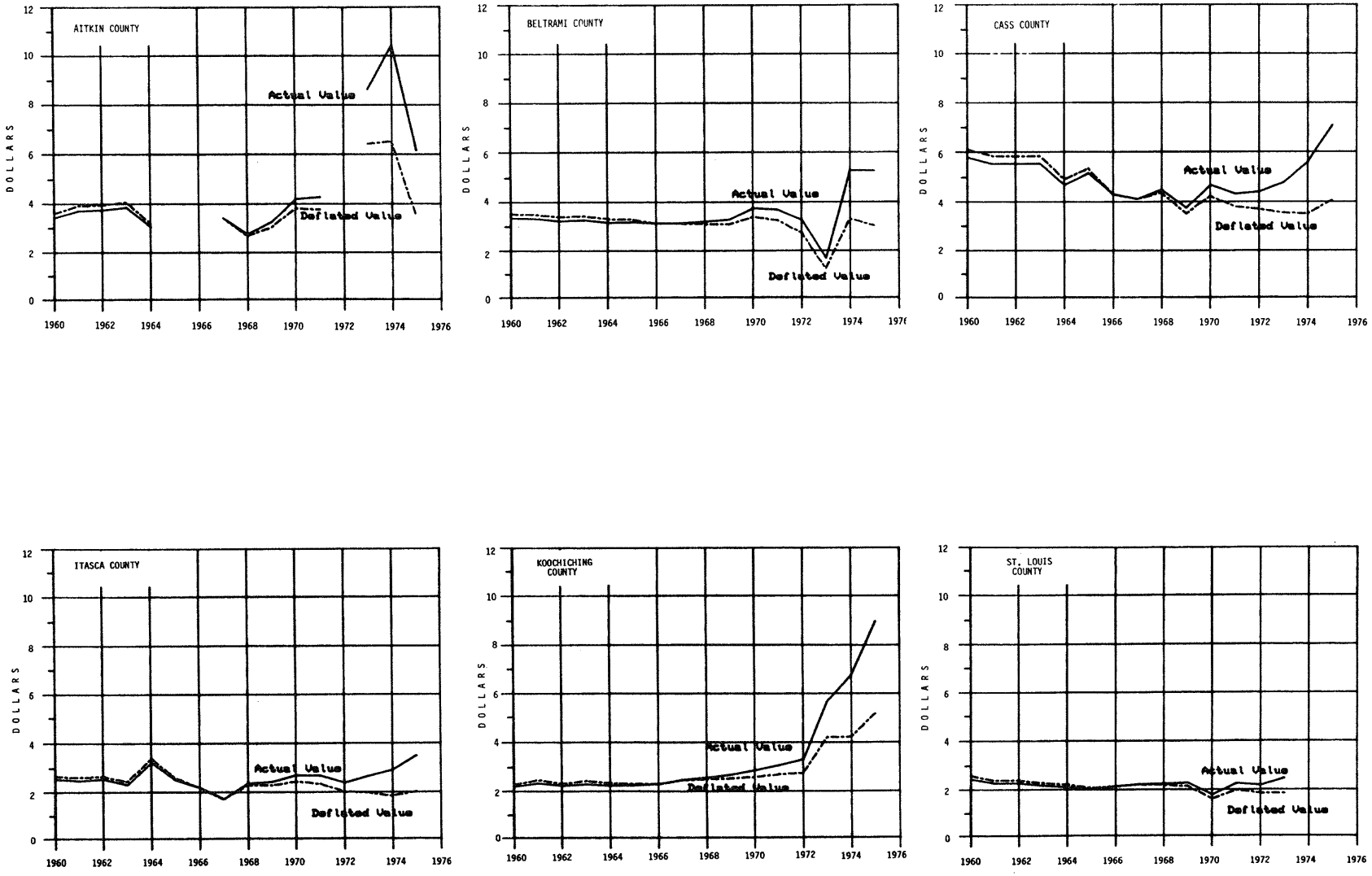



**Figure 7.**—*Average stumpage price per cord for jack pine harvested in six northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

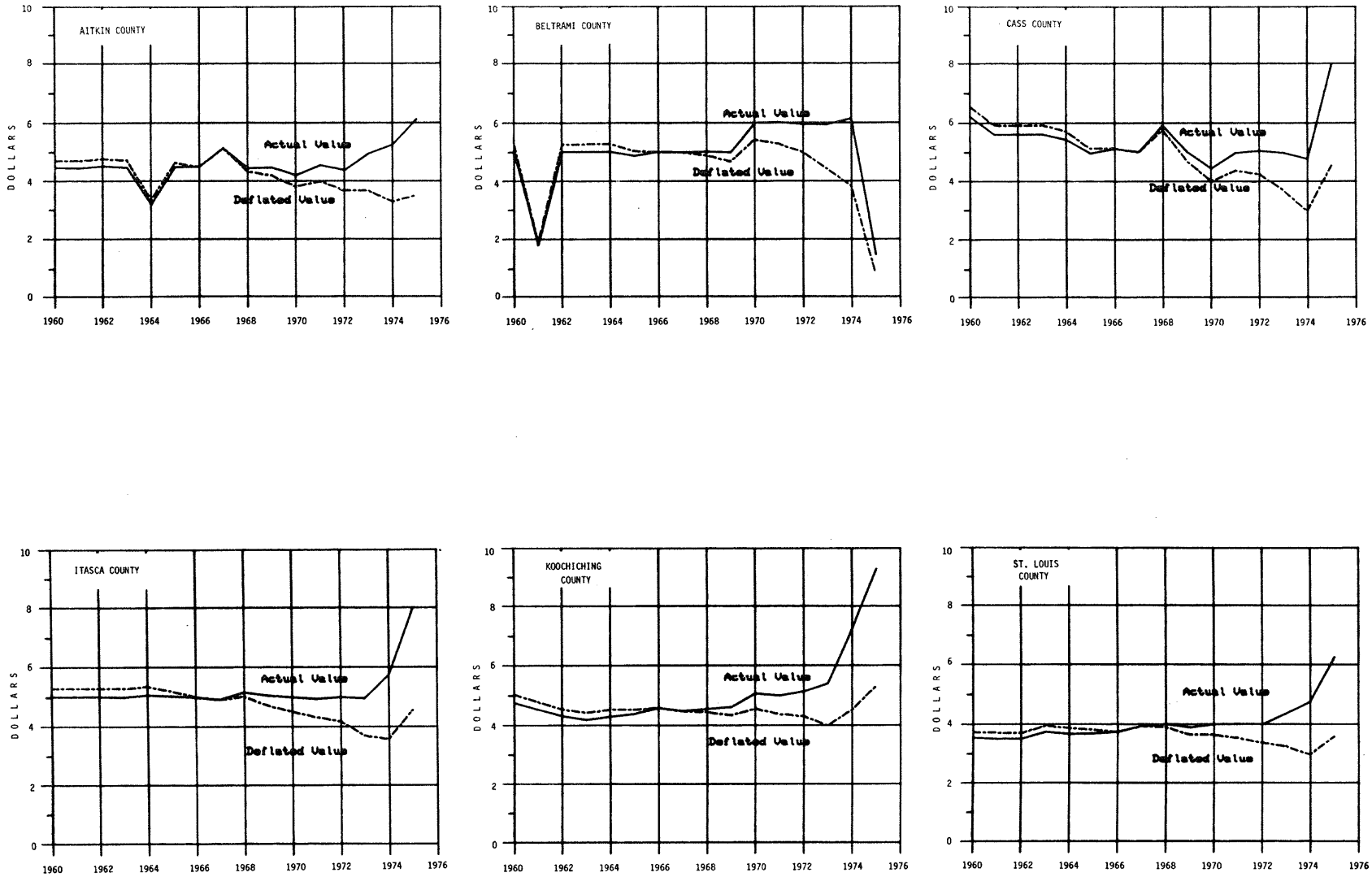



Figure 8.—*Average stumpage price per cord for spruce harvested in six northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

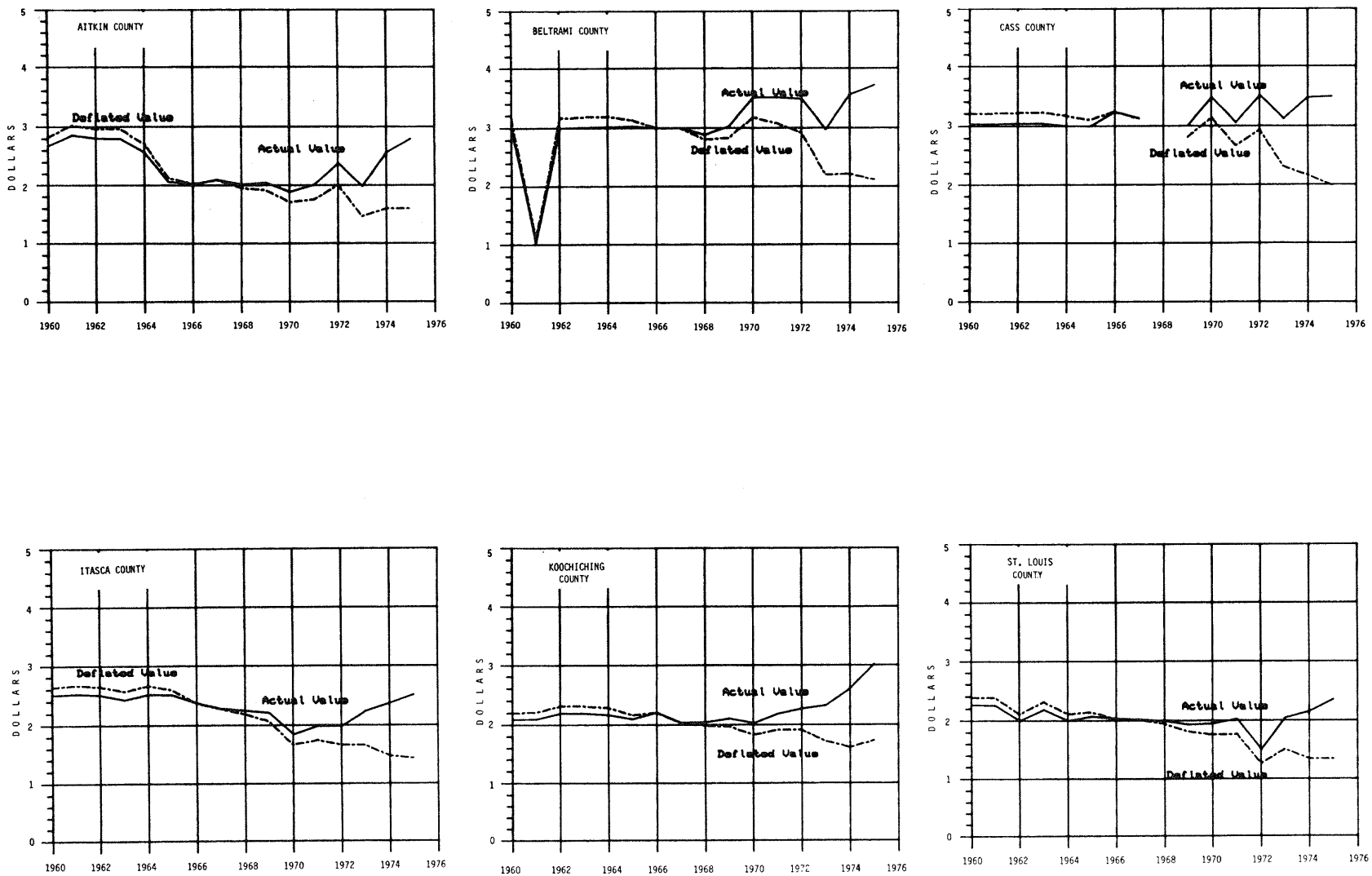



Figure 9.—*Average stumpage price per cord for balsam fir harvested in six northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

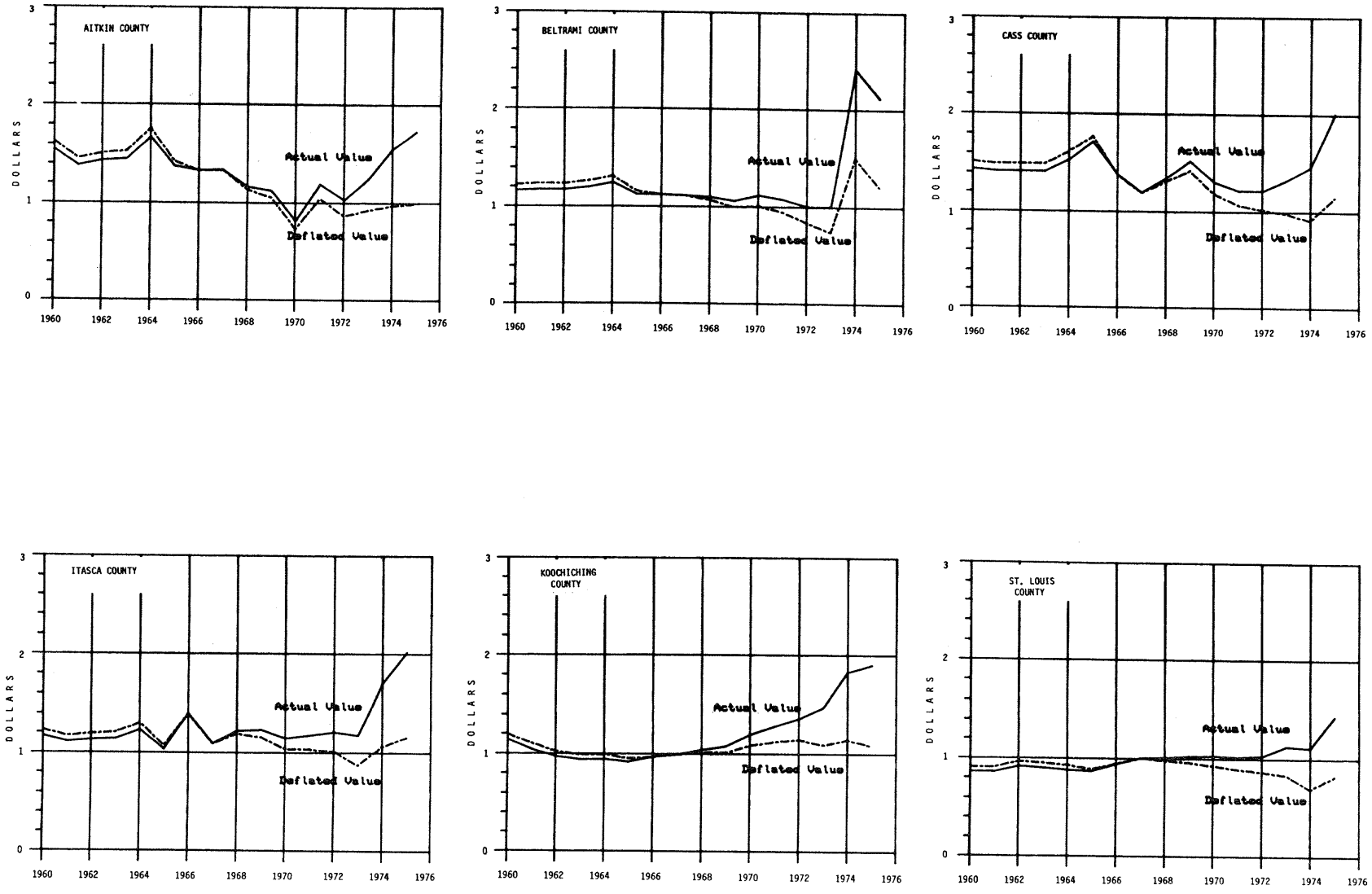



Figure 10.—*Average stumpage price per cord for aspen harvested in six northern Minnesota counties, 1960-1975. (Deflated value determined by wholesale price index (1967 = 100).)*

☆U.S. GOVERNMENT PRINTING OFFICE: 1979--667213/10

Lothner, David C., Edwin Kallio, and David T. Davis.
1979. Minnesota's tax-forfeited land: some trends in timber harvested and stumpage prices. U.S. Dep. Agric. For. Serv., Resour. Bull. NC-42, 12 p. U.S. Dep. Agric. For. Serv., North Cent. For. Exp. Stn., St. Paul, MN.

The volume of timber harvested from Minnesota tax-forfeited land increased from about 145,000 cord equivalents in 1960 to 235,000 cord equivalents in 1975. Actual prices paid for stumpage decreased slightly in the 1960's and increased in the 1970's. However, in deflated dollars, stumpage prices decreased slightly throughout the period.

OXFORD: 652.51:922.2(776). KEY WORDS: Counties, northern Minnesota, timber utilization.

Lothner, David C., Edwin Kallio, and David T. Davis.
1979. Minnesota's tax-forfeited land: some trends in timber harvested and stumpage prices. U.S. Dep. Agric. For. Serv., Resour. Bull. NC-42, 12 p. U.S. Dep. Agric. For. Serv., North Cent. For. Exp. Stn., St. Paul, MN.

The volume of timber harvested from Minnesota tax-forfeited land increased from about 145,000 cord equivalents in 1960 to 235,000 cord equivalents in 1975. Actual prices paid for stumpage decreased slightly in the 1960's and increased in the 1970's. However, in deflated dollars, stumpage prices decreased slightly throughout the period.

OXFORD: 652.51:922.2(776). KEY WORDS: Counties, northern Minnesota, timber utilization.

*Put trash in the proper place.*