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Trends in Harvest Cost in New Hampshire: 1964 to 1983

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Abstract

Timber harvesting costs for New Hampshire from 1964 to 1983 were examined. During this period, real harvesting costs for sawtimber decreased at an average annual rate of 1.2 percent, while stumpage prices increased. Real harvesting costs for pulpwood declined at a 0.8 percent average annual rate. Harvest cost data for fuelwood were available only for 1973 to 1983. During this period, real harvesting cost increased at an average annual rate of 3.2 percent.

This article analyzes harvest cost trends for New Hampshire from 1964 to 1983. Harvest cost is the difference between roadside and stumpage price. It includes the cost of felling, bucking, skidding to a roadside landing, as well as the logger's profit. Characteristics of the individual tree, timber stand, terrain, final product, and equipment used affect harvesting cost. The data reported are averages for stands harvested during the specified years.

Methods

Stumpage and roadside price data were derived from the *New Hampshire Forest Market Reports* published annually by the Cooperative Extension Service at the University of New Hampshire. Harvesting cost for sawlog material is based on the average of seven species for all 10 counties in New Hampshire. These species are white pine, hemlock, red oak, sugar maple, red maple, yellow birch, and beech. Together these species account for 78 percent of the State's sawtimber volume (Kingsley 1976). Pulpwood harvest costs are based on values for the three northern counties where most of the pulpwood cutting is done. Fuelwood harvesting costs are based on statewide values. See Remington and Dennis (1986) for more detailed stumpage and roadside price information and an explanation of calculation procedures.

Average annual rates of change were obtained by linear regression analysis:

$$H = B_o + B_1 * \text{Year}$$

where H = natural logarithm of harvest cost,
 Bo = constant,
 B1 = average annual (continuously compounded) rate of change, and

Year = 1964 to 1983.

To remove the influence of inflation, nominal harvesting costs (current dollars) were adjusted to real costs (1983 dollars) using the Producer Price Index (Counc. Econ. Advis. 1984)

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Discussion

Table 1 shows average harvesting cost for sawtimber, pulpwood, and fuelwood in New Hampshire from 1964 to 1983. During this period, real harvesting costs for sawtimber decreased at an average annual rate of 1.2 percent, while real stumpage prices increased. There are several possible reasons for this decline in real harvest cost. New Hampshire's forests have been growing steadily over the study period and larger per-acre volumes generally reduce per-unit harvest cost. Sawtimber volume increased 26 percent since 1973 (Frieswyk and Malley 1985). Also integrated multiproduct harvesting has become more common, spreading fixed harvest costs over more products. Harvest cost and price trends for eastern white pine, a predominant and commercially valuable species in New Hampshire, are shown in Figure 1. Real pulpwood harvesting cost declined at a 0.8 percent average annual rate during the period.

Harvest cost data for fuelwood were available only for 1973 to 1983. During this period, real harvesting cost increased at an average annual rate of 3.2 percent. Demand for fuelwood increased substantially over the past decade. Fuelwood use is estimated at 375,100 cords in New Hampshire for 1983 (Frieswyk and Malley 1985). Fuelwood harvesting typically involves lower quality and smaller diameter wood, increasing handling cost per unit of volume. Increasing demand has also brought more operators into the woods, sometimes using smaller less efficient equipment (that is, chainsaw and pickup). Harvesting costs have remained relatively stable during the last few years of the study period. This stability is probably due to an established pattern of multiproduct harvesting by loggers as opposed to entering the woods to harvest just fuelwood, as was often done to satisfy the newly expanded demand at the beginning of the period.

Table 1.—Averaging harvesting cost for sawtimber, pulpwood, and fuelwood in New Hampshire, 1964–83

Year	Sawtimber[a]		Pulpwood[b]		Fuelwood[c]	
	Nominal	Real	Nominal	Real	Nominal	Real
	Dollars per Mbf		*Dollars per Cord*			
1964	20.31	61.55	9.17	27.78	—	—
1965	20.50	61.09	9.17	27.32	—	—
1966	20.46	59.05	9.50	27.42	—	—
1967	19.92	56.82	10.00	28.52	—	—
1968	19.32	53.60	10.00	27.74	—	—
1969	19.15	51.23	12.00	32.11	—	—
1970	19.11	49.41	12.00	31.03	—	—
1971	19.16	48.05	12.00	30.10	—	—
1972	18.52	45.07	12.50	30.42	—	—
1973	21.76	48.51	12.50	27.87	15.00	33.45
1974	21.17	52.54	13.67	26.43	16.00	30.94
1975	27.08	47.27	15.00	26.18	23.50	41.02
1976	30.14	50.38	15.50	25.91	23.00	38.45
1977	31.70	49.76	17.33	27.21	20.50	32.18
1978	33.40	48.63	17.00	24.75	39.00	56.78
1979	36.47	47.78	22.17	29.04	41.50	54.37
1980	42.18	48.71	22.00	25.40	41.50	47.92
1981	44.66	47.21	24.17	25.55	41.50	43.87
1982	45.90	46.63	24.00	24.38	41.50	42.17
1983	48.58	48.58	24.83	24.83	41.50	41.50

[a]Weighted average of low-, medium-, and high-quality sawtimber classes.
[b]Northern counties in New Hampshire—costs for hardwood, spruce fir, and other softwood.
[c]Data available only for 1973–83.

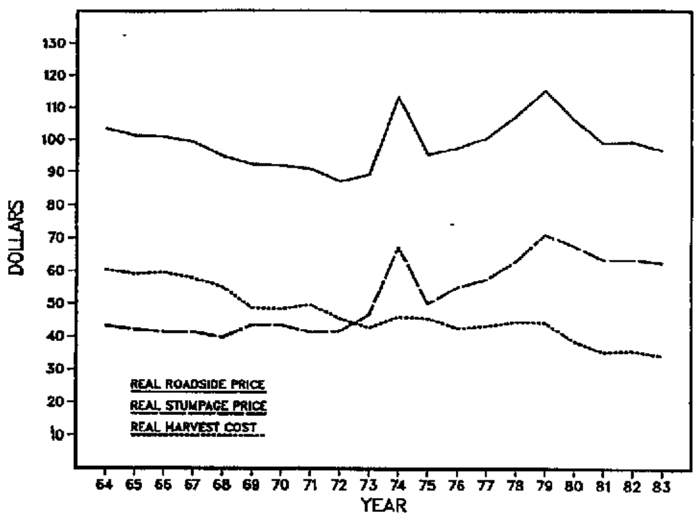

Figure 1.—Trends in harvest cost and prices for eastern white pine in New Hampshire, 1964 to 1983.

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