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Forestland Ownership in Oneida and Vilas Counties, Wisconsin, 1975–1994

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Land Tenure Center

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ABSTRACT

Privately owned forests in the United States are being divided, roaded, and developed by increasing numbers of second-home buyers, retirees, and recreation enthusiasts. Forested parcels adjacent to or embedded in public land are considered especially desirable and a premium is being paid for the aesthetic or recreational amenities associated with such properties. However, virtually all information on variations in forestland prices in northern Wisconsin is anecdotal. One objective of this study was to identify parcel characteristics that influenced forestland prices in Vilas and Oneida counties, Wisconsin, between 1975 and 1994. A second objective was to ascertain what impact the creation and expansion of the Northern Highland-American Legion State Forest (NHALSF) had on the forestland market in Vilas and Oneida counties during this time period. Several trends suggest that the drive to acquire forestland for the construction of second homes in Vilas and Oneida counties is strong and that the NHALSF continues to impact forestland prices. Forestland in Vilas and Oneida counties was shown to react to macroeconomic forces as if it were a luxury good (that is, declining sales during a recession, increasing sales during an economic upturn) and not simply a timber resource. Positive relationships were identified between the per-acre price of forestland, the presence of highway frontage, and parcel size for the years 1975, 1980, and 1990. Forested parcels adjacent to the NHALSF were shown to have higher per-acre prices than parcels without frontage on the NHALSF. The acquisition of land by the Wisconsin Department of Natural Resources (WDNR) to expand the NHALSF has continued in recent decades, taking large quantities of land off the "open market." The reduced supply of available parcels in and near the NHALSF, as well as the highly desirable nature of owning forestland with frontage on public land, has caused the price of the remaining privately owned forestland in Vilas and Oneida counties to increase faster than similar forestland in other northern counties of Wisconsin.

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I. INTRODUCTION

A. PRIVATE FORESTLAND OWNERSHIP IN THE UNITED STATES

Private citizens and corporations hold 80 percent of all forestland in the United States, accounting for 393 million acres. Private forestland ownership is concentrated east of the Mississippi River, while western states have substantially less privately owned forestland and a predominance of federal ownership. Since 1978, private forestland acreage in the United States has increased by 60 million acres, primarily due to agricultural abandonment, while the number of private forestland owners has increased by nearly 2.2 million (Birch 1994).

Greater personal income and a more aesthetic orientation to forest management make today's private forestland owners less likely to harvest timber than previous generations of owners. In a study of private forestland owners in New York, Rosen (1995) reported declining interest in timber harvesting between 1983 and 1992. Most small, private forestland owners in the United States (54%) have not harvested timber on their land and 35 percent expect never to harvest timber (Birch 1996). Owners of the growing numbers of smaller parcels believe that timber harvesting conflicts with other uses, especially recreation, that they have for their land (Fleury and Blinn 1996).

Recreation-minded forestland buyers de-emphasize many traditional forest-parcel characteristics, such as timber volume and proximity to mills, when placing a value on forested property. Their buying patterns consequently favor those characteristics that fulfill their needs and desires for recreational activities. A study of land sales in northeastern Minnesota found that water frontage, smaller tract size, quality of road access, timber quality (i.e., mature forest characteristics), and intended use of the land were all associated with increased forestland price (Baughman 1988). Turner et al. (1991) concluded that forestland prices in Vermont increased with proximity to ski areas, more open land on the property, the presence of road frontage, and faster county population-growth rates.

B. FORESTLAND OWNERS IN THE LAKE STATES

Private forestland owners in the Lake States (Michigan, Minnesota, and Wisconsin) share some characteristics common to all forestland owners. Most private forestland owners in the Lake

States have purchased their land since 1970, and most own parcels of 50 acres or less. Nearly half these private forestland owners are over 55 years of age and nearly one-third are over 65 years' old (Birch 1994). Of those private forestland owners in the Lake States who cited aesthetic enjoyment as the primary benefit expected from their forest, 45 percent had not harvested timber on their land (Birch 1994).

Seasonal home owners in the Lake States appear to account for a large portion of recent forestland purchases, with 52 percent of these owners acquiring their homes since 1981, and 74 percent since 1971 (Stynes 1997; Stynes, Zheng, and Stewart 1997). Most of these properties (96%) were 5 acres or less in size and 42 percent had property values greater than $100,000, especially if they included lake frontage. These owners have a potentially large economic impact, since 52 percent of Michigan owners had an annual income greater than $60,000, with 20 percent of the tourism-related spending and half of the participation in outdoor recreational activities attributed to this group (Stynes 1997).

Forestland owners of Wisconsin have a number of characteristics that differentiate them from the typical forestland owners of the United States as a whole. Ownership tenure tends to be longer in Wisconsin than in the United States, and a greater percentage of Wisconsin forestland owners are farmers who maintain a portion of their farm as wood lot for a variety of reasons. About two-thirds of Wisconsin owners (holding about 46% of all private forestland in the state) have never harvested timber from their land, and over 60 percent (holding about one-third of all forestland) indicated they definitely or probably would not harvest in the future (Roberts, Tlusty, and Jordahl 1986; Birch 1994; Birch 1996).

C. RECREATION USE AND FOREST ACCESS

The wide variety of recreational activities available year-round appears to be an important factor driving the forestland buying boom in the Lake States. Michigan, Minnesota, and Wisconsin rank among the top six states in the number of registered boats and among the top four states in the number of registered snowmobiles, attesting to the Lake States' prominence as a recreation destination (Bilek and Stier 1997). Roberts, Tlusty, and Jordahl (1986) found that the largest proportion of Wisconsin landowners cited scenic enjoyment and wildlife habitat as the most important reasons for owning forestland, with viewing nature, hiking, hunting, and berry picking as the most preferred recreational activities. For Michigan timberland owners, hunting was found to be the most common recreational use of forestland (38% of respondents owning 45% of the land base), followed by hiking (29% and 33%) and bird watching (25% and 25%) (Leatherberry, Kingsley, and Birch 1998).

There are a number of indications that the popularity of hunting is declining when compared to other recreational activities. Since 1980, the number of hunters nationwide has decreased (Heberlein and Beckley 1990) and participation in hunting is expected to decline in the future (Heberlein 1991). Of private forestland owners in the Lake States, 38 percent cited aesthetic enjoyment as the benefit they expected from owning forestland compared to 20 percent of owners who cited recreation as the benefit they expected (Birch 1994). The aging of the "baby boomers" is paralleled by a shift in the popularity of consumptive activities such as hunting and fishing to nature appreciation activities such as watching birds and walking for pleasure (Marcin 1993).

The desire to pursue more nonconsumptive activities may be one reason for private forestland owners to restrict public access for hunting or other activities. Studies in Michigan (Leatherberry, Kingsley, and Birch 1998) and Illinois (Leatherberry 1993) found that 47 percent and 26 percent, respectively, of privately owned forestland had restrictions on public access. Private forestland owners restrict access to their land because of user misconduct, concerns about liability, loss of privacy, the ability to control hunting, and the owner's personal use of the land for recreation (Cordell, English, and Randall 1993; Leatherberry, Kingsley, and Birch 1998).

D. WISCONSIN'S FORESTS: A BRIEF HISTORY OF OWNERSHIP

Following World War II and the beginning of a "recreation and tourist" economy (Weiler and O'Leary 1997), interest in northern Wisconsin as a recreational destination began to grow. The development of paved roads, an affluent and aging population, and proximity to large population centers (e.g., Minneapolis, Milwaukee, Chicago) all contributed to the growth of recreation/retirement forestland markets in Wisconsin. Most of the estimated 245,800 private forestland owners in Wisconsin are urban, white-collar professionals and retirees. A substantial portion have acquired land since 1970, and 43 percent are over 55 years of age (Birch 1994). In fact, the proportion of people 65 years' old and older in the counties of north-central Wisconsin has doubled, and in some cases tripled, whereas the proportion for Wisconsin as a whole has increased by only about one-third during the past three decades (Klase 1998). Finally, Radloff (1990) found that 30 percent of second-home owners in Vilas County were from Chicago and 31 percent were from Milwaukee

Wisconsin's northern forests have many of the characteristics that make them prime candidates for the kinds of development that are taking place throughout the nation. The high density of lakes, the quality and expanse of the forests, and the relatively low population densities all represent amenities that people are seeking in northern Wisconsin when they want to "get away from it all" and enjoy the outdoors (Laas 1996). Another reason for the drive to acquire land in northern Wisconsin is the fact that more than 12,400 lakes are scattered across the northern third of Wisconsin (Laas 1996). Development along these lakes has continued at astronomical rates: during the past 30 years, 80 percent of the undeveloped lakes greater than 200 acres in size have been developed, and lakes of 500–999 acres have had an 800 percent increase in total development. The average density of dwellings per mile of shoreline for all of northern Wisconsin has increased by 60 percent since the 1960s (Laas 1996).

E. FORESTLAND PRICES IN VILAS AND ONEIDA COUNTIES, WISCONSIN

In general, "real" forestland prices for the counties of north-central Wisconsin are below the statewide average except for Vilas and Oneida counties (see figure 1, p. 6). "Real" prices are the actual or "nominal" prices adjusted so comparisons between years can be performed without the influence of inflation. Per-acre prices were adjusted to 1997 dollars using the Consumer Price Index to adjust for inflation from year to year. Two factors appear to be the cause of the disparity in prices between Vilas and Oneida counties. First, the 222,000 acres of the Northern Highland-American Legion State Forest (NHALSF) are located primarily in Vilas and Oneida counties, making this an attractive setting for recreation-minded home buyers. The NHALSF is open to the

public for a wide variety of outdoor activities including hunting, hiking, fishing, bicycling, camping, wildlife viewing, cross-country skiing, and snowmobiling. Visits to the forest have increased dramatically from 1.2 million visitors in 1970 to 1.9 million in 1993 (Wisconsin Legislative Reference Bureau 1995). Second, Vilas and Oneida counties enjoy one of the highest concentrations of fresh water lakes in the country, perhaps the world (Laas 1996). Between 1990 and 1994, lakefront property values increased by 100 percent along the Three Lakes Chain and South Twin Lake near Conover, by 150 percent on Big Sand Lake in Phelps, and by more than 380 percent on the Eagle River Chain (Laas 1996).

The belief that Vilas and Oneida counties are equally endowed with amenities attractive to second-home owners is probably incorrect because forestland prices in Vilas County are generally higher than in Oneida County (figure 1). There are several factors that appear to be at the root of this difference:

1) The quantity and quality of lakes: Vilas County has more lakes (93,889 acres) than Oneida County (68,447 acres), more lakes per square mile (93 versus 55), and more lakes where sport fish (e.g., muskie, northern pike, walleye, large and small mouth bass) are common (190 versus 163) (WDNR 1995).

2) The presence of public forests: A majority of the NHALSF (68%) is located in Vilas County and a larger portion of the Nicolet National Forest is in Vilas County (45,700 acres) than in Oneida County (10,900 acres) (USDA Forest Service 1997).

3) The quantity and quality of all forests: Oneida County has more timberland acreage than Vilas County (567,000 acres versus 459,000 acres), but a larger percentage of timberland in Vilas County is mesic forest (66% versus 52%) and a smaller percentage of timberland is hydromesic (a transitional forest whose soils are saturated part of the year) or hydric (a forest whose soils are saturated most of the year) (15% versus 24%) than in Oneida County (USDA Forest Service 1997). This suggests that a larger portion of the landscape in Vilas County is upland forest with better development potential and therefore commands a higher per-acre price than lowland forests.

Vilas and Oneida counties are popular recreational destinations making them useful regions for a study of changing forestland prices. Understanding which parcel characteristics influenced land price changes in the past can provide clues as to which may be important in the future. This knowledge may minimize potential conflicts surrounding public land acquisition and help land managers determine which forested parcels they should purchase and which may be "hot spots" for development now and in the future.

F. NORTHERN HIGHLAND-AMERICAN LEGION STATE FOREST (NHALSF)

The NHALSF appears to be an important focus for the booming Northwoods forest real-estate market since many private buyers wish to live "in" or adjacent to this large body of public land. The role the NHALSF plays in forestland price is twofold:

1) the acquisition of land within the boundaries of the state forest ("in-filling") diminishes the pool of available parcels for sale in the real estate market; and

2) the presence of the state forest causes inholdings, adjacent, and nearby lands to become more desirable as seasonal, retirement, or rental home sites.

The NHALSF, located in Iron, Oneida, and Vilas counties in northern Wisconsin, was established in 1925 with the goal of protecting the source of many of the important rivers in Wisconsin (Wisconsin Conservation Department 1955). A large portion of the property was acquired in the early part of this century as tax-delinquent land that had been cut of its "virgin" timber, had succumbed to wildfires, and/or had been abandoned by farmers due to poor soils (Carstensen 1958). County governments and the federal government also acquired a great deal of land in this manner and today public agencies own 34 percent of the timberland in Vilas and Oneida counties (USDA Forest Service 1997). The NHALSF is not one contiguous block, but is peppered with private inholdings amounting to approximately 20 percent of the land within its designated borders. These private inholdings can be completely contained in or adjacent to the NHALSF, with the result that a great deal of private land abuts the NHALSF.

Conventional wisdom suggests two primary reasons for parcels adjacent to public lands to be viewed as highly desirable. First, landowners who share a property line with public property are virtually assured that development cannot take place adjacent to their property. Second, owning recreational land adjacent to public lands effectively extends a property owner's land to the bounds of the public holding.

G. CONFLICTS OVER PUBLIC/PRIVATE FORESTLAND OWNERSHIP

Considerable controversy exists in northern Wisconsin between those who desire continued recreational development and expansion and those who want to minimize development and protect land in a wild or primitive condition. Ironically, many citizens wishing to "preserve" forestland frequently acquire small parcels and contribute to the fragmentation they are trying to stem. Public land managers who must make management decisions while working within an ecological framework that already limits their options are often caught between these opposing "utilization versus preservation" forces.

An article in the 29 August 1997 issue of the *Isthmus* summarized the situation in Vilas and Oneida counties quite well:

> John Anderson, the former zoning administrator of Vilas County, knows the numbers by heart. In 1971, his office handled a total of 8,000 "items," such as building permits, complaints and investigations. In 1996, the last full year before Anderson retired, the number of items had risen to 27,000. This includes 368 new homes—nearly twice as many as in 1987. There are an estimated 8,000 homes in the area that are uninhabited much of the year. Real estate prices for lake frontage have increased more than fourfold since 1990, and building is constant. Parcels are being bought and split up; old cabins and cottages are being torn down and turned into large, family-sized homes.

Of particular interest are parcels within and at the fringes of blocks of public land which are viewed as highly desirable for recreation access. Efforts to manage public forest at a "landscape scale" often conflicts with the intended use of small privately held parcels leading to political and legal "solutions" to land management issues.

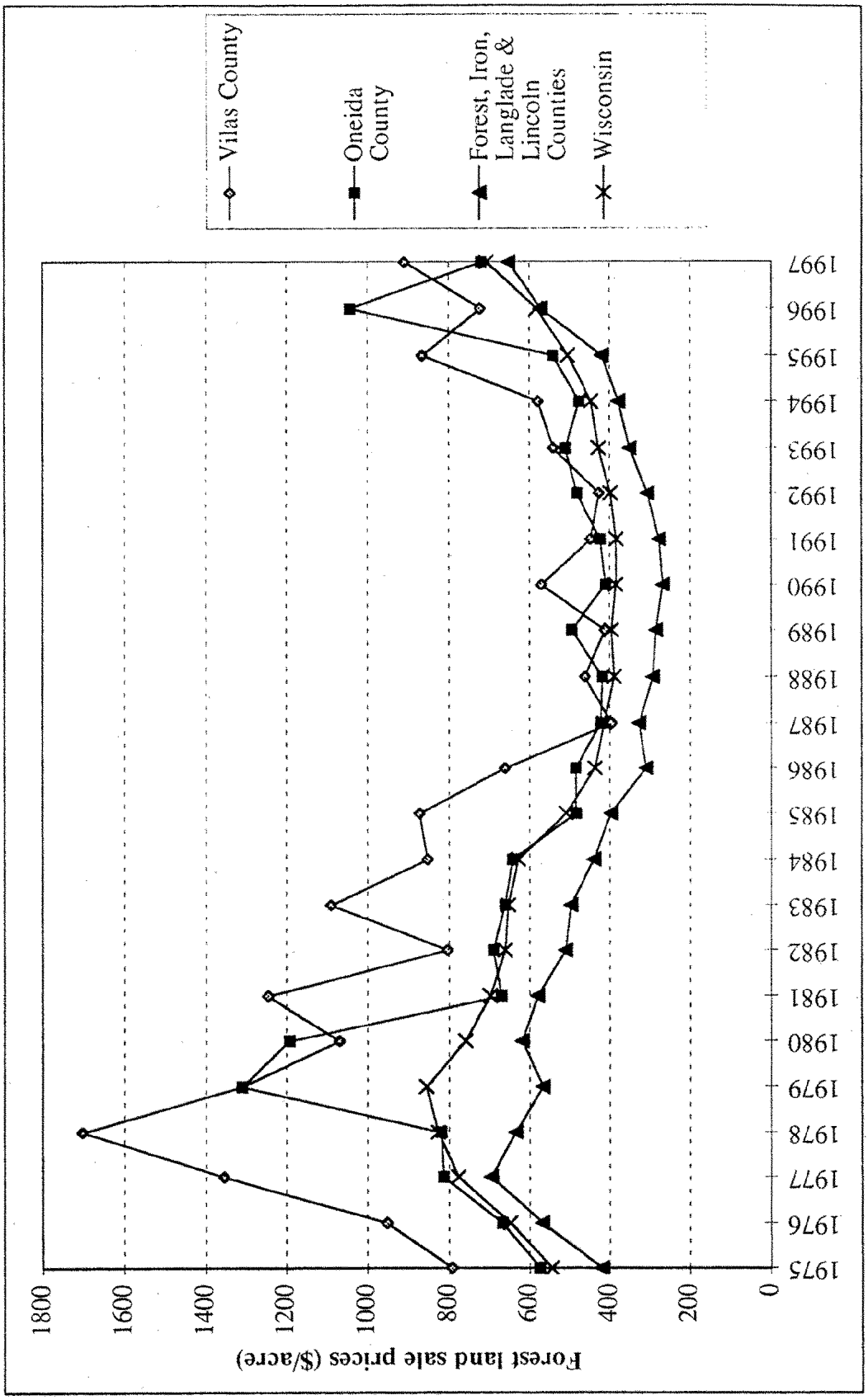

Figure 1. Trends in forest land prices (corrected for inflation using the C.P.I.; 1997=100) in selected Wisconsin counties, 1975-1997.
Source: Klase 1998

H. INFLUENCES ON FORESTLAND PRICES

What effect has the creation and expansion of the Northern Highland-American Legion State Forest had on forestland prices in Vilas and Oneida counties during the past 20 years? Which parcel characteristics appear to have influenced forestland prices here during the past 20 years? Answers to these and other questions help guide important policy decisions when allocating scarce resources for public land acquisition and in promoting recreation and tourism development.

A review of published literature on forestland prices and recreational use identified several characteristics that may influence forestland prices in Vilas and Oneida counties including:

1) the size of the parcel,
2) the presence of wetlands,
3) proximity to amenities (e.g., lakes, state and national forests, etc.),
4) "negative" amenities,
5) the population growth rate of the area,
6) the level of annual tax burden,
7) the presence of road frontage and distance to major highways, and
8) the type and quality of the forest present.

Most of these characteristics are incorporated, either directly or indirectly, in the Wisconsin Department of Revenue's Bureau of Equalization (BOE) database derived from land sales information.[1]

II. TRENDS IN OWNERSHIP AND PRICES OF FORESTLAND

A. INFLUENCE OF THE NHALSF ON FORESTLAND PRICES

The Wisconsin Department of Natural Resources (WDNR) acquired large quantities of land for the NHALSF during the late 1970s and early 1980s (figure 2, p. 8). As the WDNR reached the limits of its land acquisition budget and approached the acreage goals which had been set in the 1982 NHALSF Master Plan, it became more difficult to find affordable parcels to purchase that fit their management goals. Consequently, the number of acres acquired for the NHALSF declined by 1990 while the price paid for land increased (figure 2). Between 1975 and 1989, the purchase price for WDNR acquisitions generally mirrored county averages (figure 3, p. 9), but beginning in 1990, NHALSF land purchase prices increased sharply above county averages.

1. A detailed description of this database and its values and limitations for surveys of forestland price trends are included in Klase (1998).

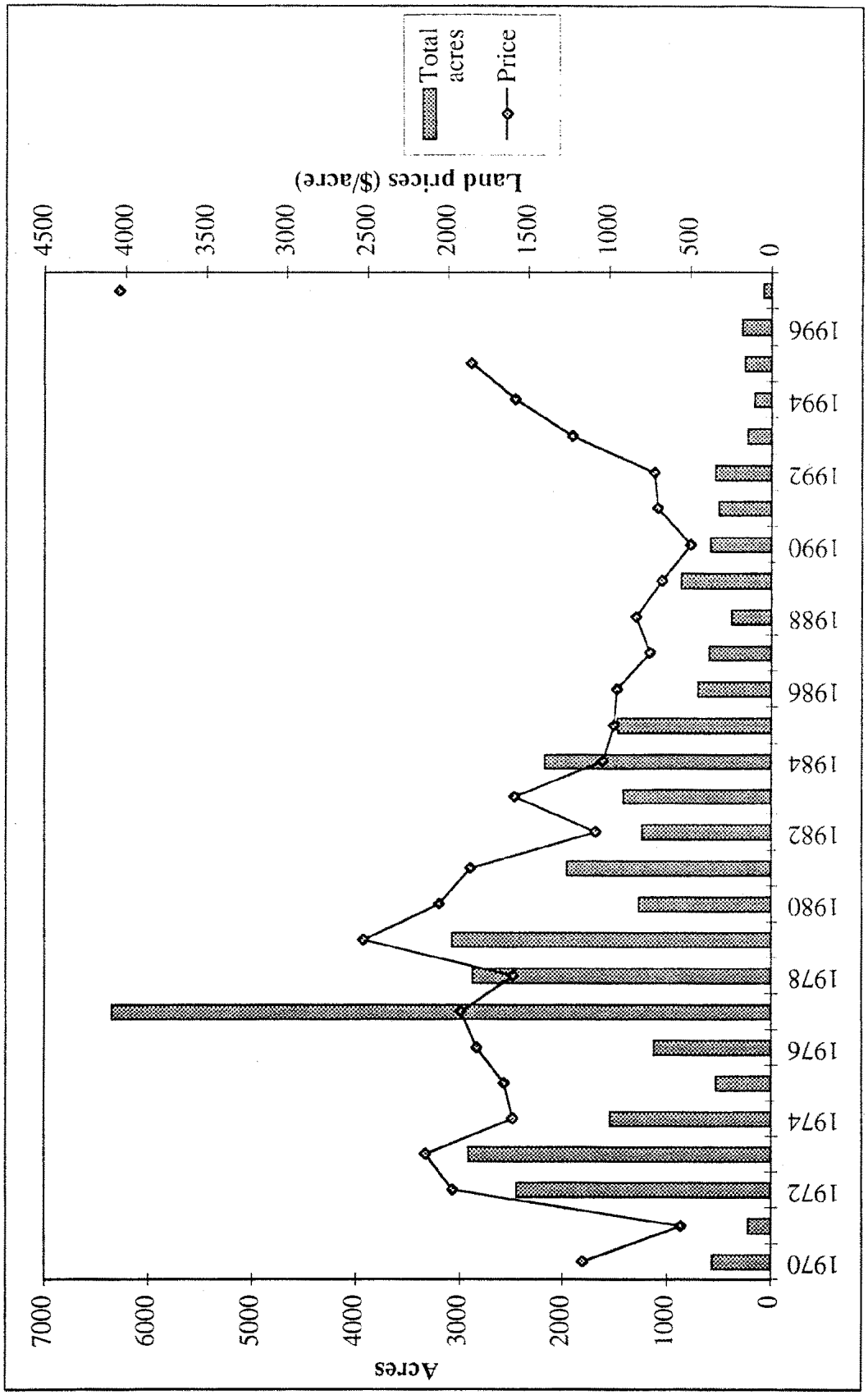

Figure 2. Total acres and the average per-acre price for land (corrected for inflation using the C.P.I.; 1997=100) acquired by the WDNR for the NHALSF, 1970-1997.
Source: Klase 1998

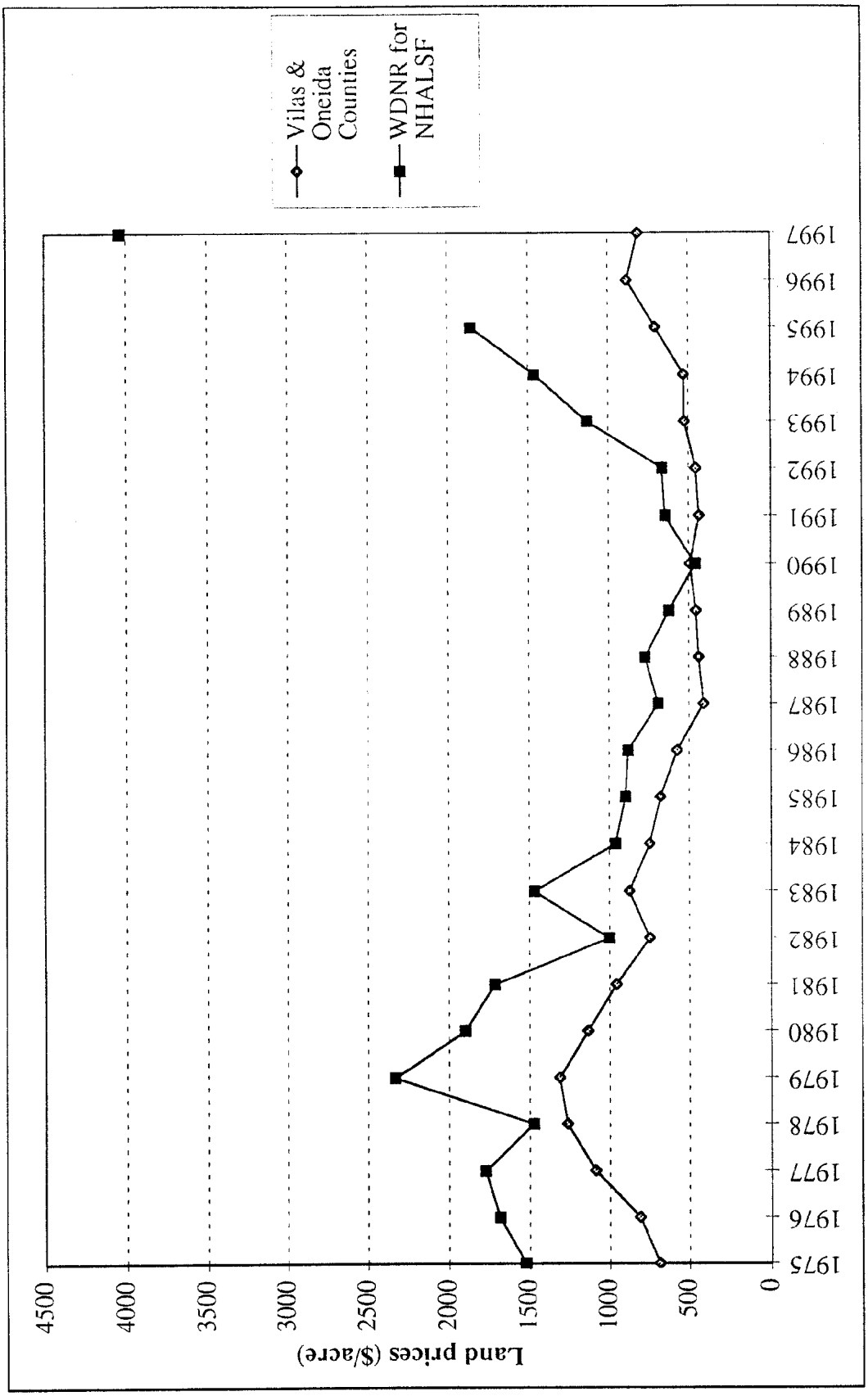

Figure 3. Sales prices for land (corrected for inflation using the C.P.I.; 1997=100), 1975-1997.
Source: Klase 1998

An analysis of forestland sales in Vilas and Oneida counties for the years 1975, 1980, 1985, 1990, and 1994 suggests that even as early as 1975, the availability of parcels within the borders of the NHALSF had declined. The townships of Manitowish Waters, Boulder Junction, and Saint Germain in Vilas County and Lake Tomahawk and Woodruff in Oneida County, all completely within the NHALSF, had the lowest number of transactions among townships in their respective counties for almost the entire period (Klase 1998). The total number of sales within the NHALSF also declined over time, as did the privately purchased parcels. Other townships such as Conover, Land O' Lakes, and Phelps in Vilas County and Cassian and Hazelhurst in Oneida County, mostly outside the bounds of the NHALSF, all continue to enjoy significant numbers of transactions. It appears that sales activity within the boundaries of the NHALSF reflects the fact that state ownership was more or less complete for many townships by 1980, and the few remaining private parcels rarely change hands. None of the sales for the years studied included purchases by the WDNR for the NHALSF because it was only recently that the WDNR began to submit transfer return forms to the BOE for land purchases.

B. DEMAND FOR RECREATIONAL FORESTLAND IN VILAS AND ONEIDA COUNTIES

The fluctuations in forestland value in Vilas and Oneida counties over time coincide with regional macroeconomic trends taking place during the same time period. During the mid to late-1970s, the overall economy was doing well and the demand for recreational land was high, as reflected in forestland prices (figure 1). The demand for forestland for recreational purposes declined rapidly during the early to mid-1980s when a recession struck the state and the nation, driving land prices downward.

Forestland prices began to recover after 1987 (figure 1). Following the stock market decline in 1987, investors may have been looking to diversify their portfolios by purchasing forestland in Vilas and Oneida counties for a number of reasons. Real estate is generally regarded as a more stable investment than corporate stocks, and the Vilas-Oneida counties area was identified as a tourist and second-home-buyer magnet, with the possibility that investments here might appreciate substantially over time. Finally, there is always income potential via timber harvesting if tourism declines. As the economy began to recover in the early 1990s, forestland prices increased (figure 1).

C. INFLUENCE OF PARCEL CHARACTERISTICS ON PRICE

An analysis of forestland sales in Vilas and Oneida counties for the years 1975, 1980, 1985, 1990, and 1994 revealed that a number of parcel characteristics consistently influence (either positively or negatively) the per-acre price of forestland (Klase 1998). Consistent trends or relationships noted include:

1) Parcels located in Vilas County had higher per-acre prices than those located in Oneida County.
2) The greater the acreage of a parcel, the lower its per-acre price.
3) The higher the population growth rate in a township, the higher the per-acre price of parcels within that township.

4) The presence of road frontage on a parcel, resulted in greater per-acre prices.

5) The greater the distance a parcel is from a major highway, the lower its per-acre price.

However, while increasing parcel distance from a major highway appeared to result in lower parcel prices (i.e., a "trend" exists), the relationship was statistically insignificant for all years studied. Perhaps Vilas and Oneida counties are "well roaded" and distances here are not regarded as large. What follows is an interpretation of the forestland sales data for Vilas and Oneida counties across different eras starting, arbitrarily, in the mid-1970s.

1. Boom years, mid- to late-1970's

There is substantial evidence to support the notion that a growing forestland market for recreational purposes existed during this era. First, the importance of access and ownership of small parcels is evident by the relationships between forestland prices and road frontage and parcel size. These relationships imply an interest among buyers in the acquisition of sites for homes. Second, the significance of a parcel's location in Vilas County (as evidenced by higher per-acre prices) suggests the importance of proximity to a greater abundance of recreational opportunities. Third, the effective mill rate was positively related to per-acre price of forestland suggesting that buyers were more concerned with acquiring desirable forestland than with property tax assessments. Prior to 1990, property taxes were relatively low and probably not an immediate concern for recreational buyers of small parcels. However, by 1990 effective mill rates were significantly adjusted upward, and buyers now had to consider future tax burdens.

2. Bust years, 1980–1987

The nation experienced a recession during this era causing the forestland buying "boom" to end and the influx of new immigrants to decline in Vilas and Oneida counties. Average "real" forestland prices in 1980 were the highest of all the years studied and then declined to their lowest level in 1987 (figure 1). The decreased number of new home-building permits issued between 1980 and 1987 compared to previous years (Klase 1998) is additional evidence that the buying boom had peaked and was in decline.

The decrease in per-acre price due to increasing parcel size and the increase in per-acre price due to the presence of road frontage were both low during this era. This implies that either the demand for smaller parcels was low or the value of parcels without frontage was increasing. Buyers of forestland during this era may have been more likely to utilize their timber resource to help offset the cost of purchasing their property than previous land buyers. Therefore, they may have favored parcels with higher quality timber over those parcels with little income potential (e.g., those parcels with wetlands) as evidenced by a strongly negative relationship between the presence of wetlands on a parcel and its per-acre price. The impact of past WDNR purchases for the NHALSF become evident for the first time during this era. The increase in per-acre price for parcels inside the NHALSF is substantial, an average of $143 per acre. This suggests that demand for the limited number of private parcels had increased, and a continuing WDNR acquisition program effectively set a lower limit for the price a parcel could command causing prices to be higher than similar and even adjacent parcels outside of the NHALSF.

3. Stable years, 1987–1991

A recovering economy and low forestland prices (figure 1) fueled an increase in the number of sales of forestland and an increasing demand for recreation land or second homes during this era (Klase 1998). The relationship between the per-acre price of a parcel and the presence of road frontage and increasing parcel size during this era suggests an increasing demand for properties that are easily accessed for homes (i.e., smaller parcels with frontage). However, township population growth rates are not related to parcel price during this period, suggesting that acquisition is not necessarily accompanied by home construction, and demand for forestland may be shifting to more rural townships. The low supply and high demand for forestland within the NHALSF is also evident during this era, while the disparity in per-acre price between parcels in Vilas and Oneida counties is the lowest of all the years studied. The effective mill rate seems to play a larger role in purchasing decisions of forestland as evidenced by declining per-acre prices with increasing mill rates. The increased effective mill rates during this era require that buyers of forestland consider future tax burdens, along with all of the other characteristics they desire, in decisions on forestland purchases.

4. Current Boom, 1992–present

There are a number of indications that another forestland buying "boom" may have begun during the early- to mid-1990's. After 1992, per-acre prices increased (figure 1) and population growth increased slightly faster than during the previous era. However, this buying "boom" had several characteristics that distinguish it from the earlier era, including the relatively low increase in per-acre price due to the presence of road frontage; the relatively low decrease in per-acre price due to an increase in acreage; and the lack of a relationship between per-acre price and the presence of road frontage, increasing parcel size, and a township's growth rate. These could be the result of an increased supply of smaller parcels with road frontage either via the fragmentation of larger parcels, the construction/completion of new roads, or perhaps the arrival of more affluent buyers wanting larger parcels. Conversely, the lack of a relationship between per-acre price and road frontage, the population growth rate and the size of the parcel may be an indication of the desire for forestland of greater size in a more remote locale. This could be a response to the overdeveloped nature of some areas of Vilas and Oneida counties and a movement to acquire land that is more secluded. Evidence that the initial rush of buyers may have given way to more sober buyers is suggested by the relationship between per-acre price and the effective mill rate. Recent buyers appear concerned with the amount of property taxes to be paid along with all of the other parcel characteristics they may have been considering. There are a number of possible explanations for stable or declining building permits issued in the mid-1990's in Vilas and Oneida counties (Klase 1998). Most of the waterfront properties with potential for development in Vilas and Oneida counties may have been saturated by construction (Marcouiller et al. 1996). Also, high forestland prices may be forcing potential buyers to pursue properties in other counties.

III. TRENDS AND CONCLUSIONS

Forestland in Vilas and Oneida counties has been under considerable pressure from private land buyers for personal recreation and the construction of second homes. Information on forestland

transactions from the Wisconsin Bureau of Equalization's "fielded sales" database for the years 1975, 1980, 1985, 1990, and 1994 was used to determine which parcel characteristics had the greatest influence on the per-acre price of forestland in Vilas and Oneida counties during the last twenty years.

The recent literature covering forestland prices emphasizes the importance of proximity to recreational amenities in rapidly developing regions. Throughout the United States, an aging "baby boomer" population with more disposable income is identified as one important force behind the recent forestland buying "boom." These new buyers are considered to be less apt to conduct timber harvests and more likely to restrict access to their land. This puts more pressure on public land managers to satisfy the needs of a growing recreational constituency while still producing timber.

Several trends suggest that acquisition of forestland for recreation and second homes in Vilas and Oneida counties is real and that the NHALSF has an impact on forestland prices. Forestland in Vilas and Oneida counties was shown to react to macroeconomic forces as if it were a luxury good (i.e., declining sales during a recession, increasing sales when the economy is strong). Positive and negative relationships were identified between the price of forestland and the presence of road frontage and the number of acres in a parcel, respectively, for the years 1975, 1980, and 1990. This suggests that buyers of forestland during these years preferred parcels with easy access, possibly as home sites.

Forestland parcels adjacent to the NHALSF were shown to have higher per-acre prices than parcels not adjacent to the NHALSF. The acquisition of land by the WDNR for the NHALSF has been substantial in recent decades, the state's taking large quantities of land off the "open market." The reduced supply of available parcels in and near the NHALSF and the high demand for forestland with frontage on public land have caused the price of the remaining privately owned forestland to increase dramatically. This is evident in the increase in the significant and positive relationship between the per-acre price of forestland and the location of a parcel within the NHALSF for the years 1985 and 1990, and in the price paid for land by the WDNR for the NHALSF in recent years (figure 1). This suggests that many owners attach considerable significance to owning land adjacent to public forests and attests to the influence the state has had in forestland real-estate markets. However, this influence may not extend far beyond the borders of the NHALSF; prices for parcels adjacent to large blocks of forestland on the Lac du Flambeau Reservation carry no price premium. Access to recreational opportunities, perceptions of forestland as an investment instrument, and other market forces may be more important on a regional scale.

There appears to be a shift from locating recreational/second-home parcels near highly developed areas and toward more remote areas in Vilas and Oneida counties. The escalating price of forestland in or adjacent to the NHALSF may be beyond the means of many prospective buyers. Also, forestland in rapidly developing areas of Vilas and Oneida counties may become too expensive and too "crowded" for buyers looking for seclusion. Therefore, it is possible that the demand for larger parcels in more remote areas of Vilas and Oneida counties may increase, but a spatial analysis of the transactions would be required to verify this.

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