



Large Timberland Transactions in the Northern Forest 1980 - 2006

Analyzing an Historic Landownership Change

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Introduction

Since the mid 1990's, the North American forest products industry has been buffeted by a number of stresses and has begun a painful program of restructuring, corporate consolidation, and capacity downsizing. A significant change has been a continuous reduction in industry ownership of large tracts of forest land. In the past, fiber supply controlled through land ownership was regarded as a necessity by these companies (Irland, 1999 and 2005; Block and Sample, 2001, Whitney, 1989). Today, they are increasingly relying on open market purchases and on long-term fiber contracts. Nowhere has this trend proceeded with greater speed or thoroughness than in the Northern Forest of upstate New York and northern New England.

Because these lands are remote, contain abundant recreational values and cultural associations, and were owned in large contiguous blocks, they were seen as having high importance by citizens and environmental groups (The Wilderness Society, n.d.). Since 1990, several major, federally funded as

assessments of these changes and their implications were conducted (Anon. 1990; Anon. 1994; Northern Forest Lands Council 1994; Kingsley, Levesque, and Peterson, 2004). In the present work, we report on an assessment of these land ownership changes and their impacts on management policies. This work was funded by the National Council on Science for Sustainable Forestry and conducted by the Manomet Center for Conservation Sciences (Hagan, Irland and Whitman 2005)

This paper analyzes the largest transactions occurring in this region from 1980 to 2006. By reaching back to 1980, we can provide a context for recent events. It comments on the significance of new owner categories that have emerged during this period and on issues raised for future forest management. Issues related to biodiversity are discussed in Hagan, Irland, and Whitman (2005).

Data and Methods

Information was assembled on land transactions in the region from 1980 to 2006. To deepen understanding of the land ownership history of the period, personal and telephone interviews were conducted with persons who had been closely involved in land management and property transactions. This process relied on available sources and on interviews with appraisers and other experts, and current and retired industry employees. This effort has likely captured virtually all of the sales above 50,000 acres. A full analysis of the entire dataset, including all transactions from 5,000 acres and up, is reported in Hagan, Irland, and Whitman (2005).

A number of points about this information and the way it is presented need to be mentioned. First, there are often minor differences in public sources as to the precise acreages involved in transactions. However, for the purposes of this paper, the acreage data are sound. Additionally, because of interest in regional conservation issues, "transactions" are defined in a specific way. There were a number of transactions involving ownerships spanning two to four states. When this occurred, the acreage in each state was depicted as a separate transaction. In this way, it was possible to depict how transaction activity changed over time in each of the four states studied. This approach does, however, lead to understating the average size of transactions.

Once the transactions data were assembled, the information was grouped into meaningful categories for analysis. This proved to be a complex undertaking; probably there is no classification that will be perfectly defensible from all points of view. Appendixes tables 1 and 2 provide the basic data on the large transactions, together with the ways they are categorized, and the definitions of the categories used. Finally, the term "transaction" as used here is not synonymous with "tract" or parcel. Many, if not most, of the transactions recorded

here consisted of numerous individual parcels and, at times, scattered over considerable areas. With this dataset, one cannot determine the extent to which the process of ownership turnover led to the fragmentation of pre-existing contiguously owned tracts of forest land. This being said, our impression is that such fragmentation has been, to date, the exception rather than the rule. As we have seen, several smaller owners have been re-assembling fairly contiguous holdings of land.

The greatest potential for retaining important landscape values and for supporting technically skilled and well equipped land management arguably exists for the very largest properties. While a number of cutoff points could be defended, this paper analyzes sales above 50,000 acres to examine their special traits (the Maine Forest Service, for example, in its management practice reports, separately reports data for owners above 100,000 acres). A total of 68 transactions from 1980 to 2006 exceeded 50,000 acres (Appendix Table I). These totaled more than 21 million acres across the region.

General Summary

This section discusses the total amount of the 68 large transactions occurring over the period, 1980-2006 (Figure 1).

- Four of these large sales exceeded one million acres.
- Ten more were between 500,000 and one million acres.
- Eight were between 250,000 and 500,000 acres.
- 23 were between 100,000 and 250,000 acres.
- 23 were between 50,000 and 100,000 acres.

The great bulk of the transactions occurred in Maine, partly due to the sales and re-sales that affected several major ownerships. Over this period, 44 of the sales, for a total of 18.6 million acres, were in Maine. Twelve sales accounting for about 1.4 million acres occurred in New Hampshire. Eleven sales above 50,000 acres occurred in New York (total of 1.2 million acres) and only one in Vermont (84,000 acres).

Measured by acres transacted in this size class, the busiest years were 1999 and 2004 with eight transactions each:

Year	Thousand Acres	Number of transactions
1999	2,216	8
1990	2,050	1*
1991	2,050	1*
2000	1,139	3
1998	1,905	2
2004	1,825	8

*Same property

Over the period, large transactions exceeded one million acres in 11 of the years (Figure 2).

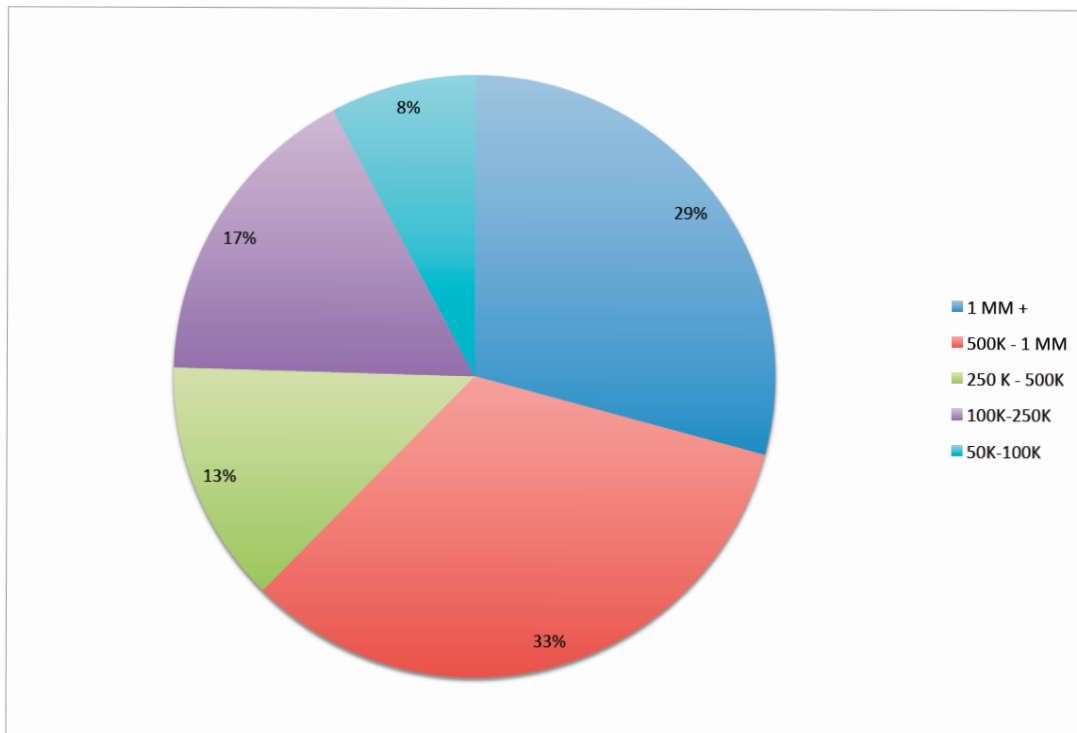


Figure 1. Acreage of Large Transactions by Size Class, 1980-2006. Over this period, almost two acres out of every three sold were in ownerships 500,000 acres and larger.

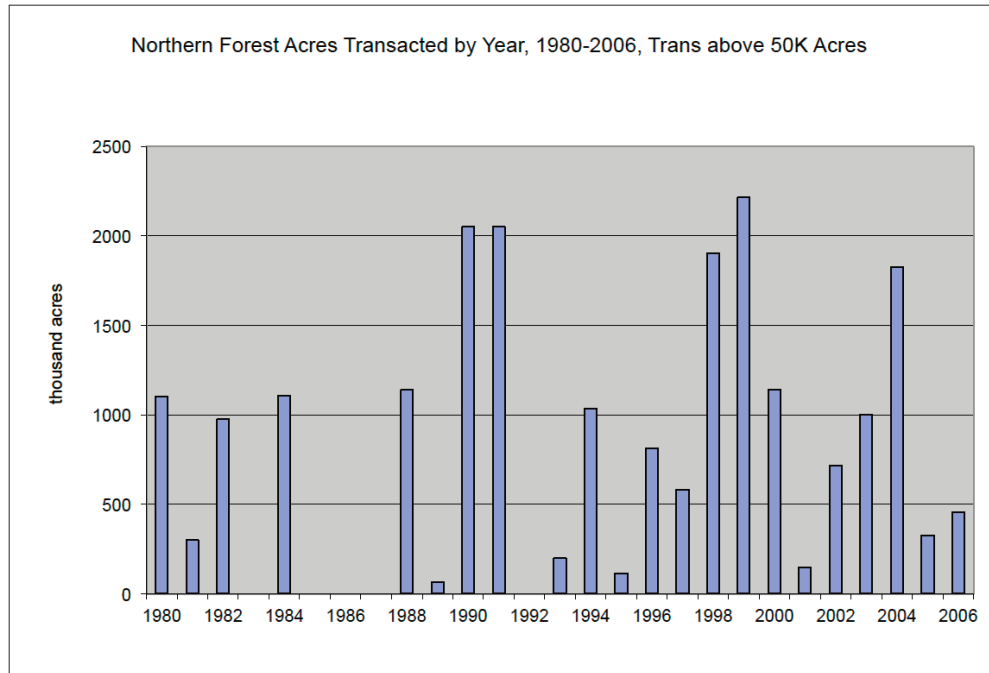


Figure 2 shows the acreage of Northern Forest transactions each year between 1980 and 2006. These are only transactions greater than 50,000 acres. Large sales occurred in pulses throughout the period.

By Transaction Type

We classified the type of transaction according to a commonsense approach. The transactions types give us a somewhat more detailed picture of events. A merger, for example, is a particular kind of transaction. By recognizing these transaction types, we can show that a number of different kinds of “sales” exist and that they could have different consequences. The most important is what we term a “breakup”, which is any situation in which the ownership within the Northern Forest is sold in more than a single package (Figure 3 and Table I). Several sales possessed multiple relevant characteristics. We do not attribute too much significance to these types but feel it is important to observe that merely describing some 21 million acres of property as having been “sold” is to overlook some important differences in the ways the transactions came about.

The *breakup* was the largest single transaction type measured by acreage involved (5.6 million

acres). The most important were the late 1980’s Diamond breakup and the late 1990’s Great Northern sales. In the Diamond case, its largest successor owner, James River, went through a process of accumulating lands and then sold them all. In the process, further “breakup” transactions occurred.

Another important type of transaction is one in which *mills or supply contracts* for wood are involved. Taken together, transactions of these two kinds outweighed the breakups, accounting for 7 million acres. The amount of land involved in this sale type indicates that the industry is not indifferent to controlling fiber supply – it has found ways to do so other than owning the land.

Corporate *takeovers* accounted for a total of 2.8 million acres, with two examples, the 1982 takeover of Diamond and the 1990 takeover of Great Northern (note that because we have kept track of Diamond lands by state, this summary counts three tracts acres of Maine lands as larger than 50,000 acres).

Corporate *mergers* accounted for 5 transactions totaling 2.8 million acres of land. In a merger, there is typically a high degree of continuity of management, though policies may change at the time. Mergers and takeovers together amounted to 5.6 million acres, equaling breakups in total acreage. In other types of transactions, the degree of continuity of management has varied. In some acquisitions by financial buyers, for example, staff reductions have occurred. *Our distinction between takeovers and mergers is open to debate. At least one of the mergers was to forestall a takeover threat. Readers may add these two together if they find the distinction unhelpful.*

Sales of *intact properties without mills or supply contracts* were in the minority, and typically smaller. There were 13 of these, totaling about 1.9 million acres.

It is noteworthy that there was only one instance of a *public land acquisition* larger than 50,000 acres. In this region, conservation efforts have been led by nonprofit groups and by the use of easements instead of outright purchases.

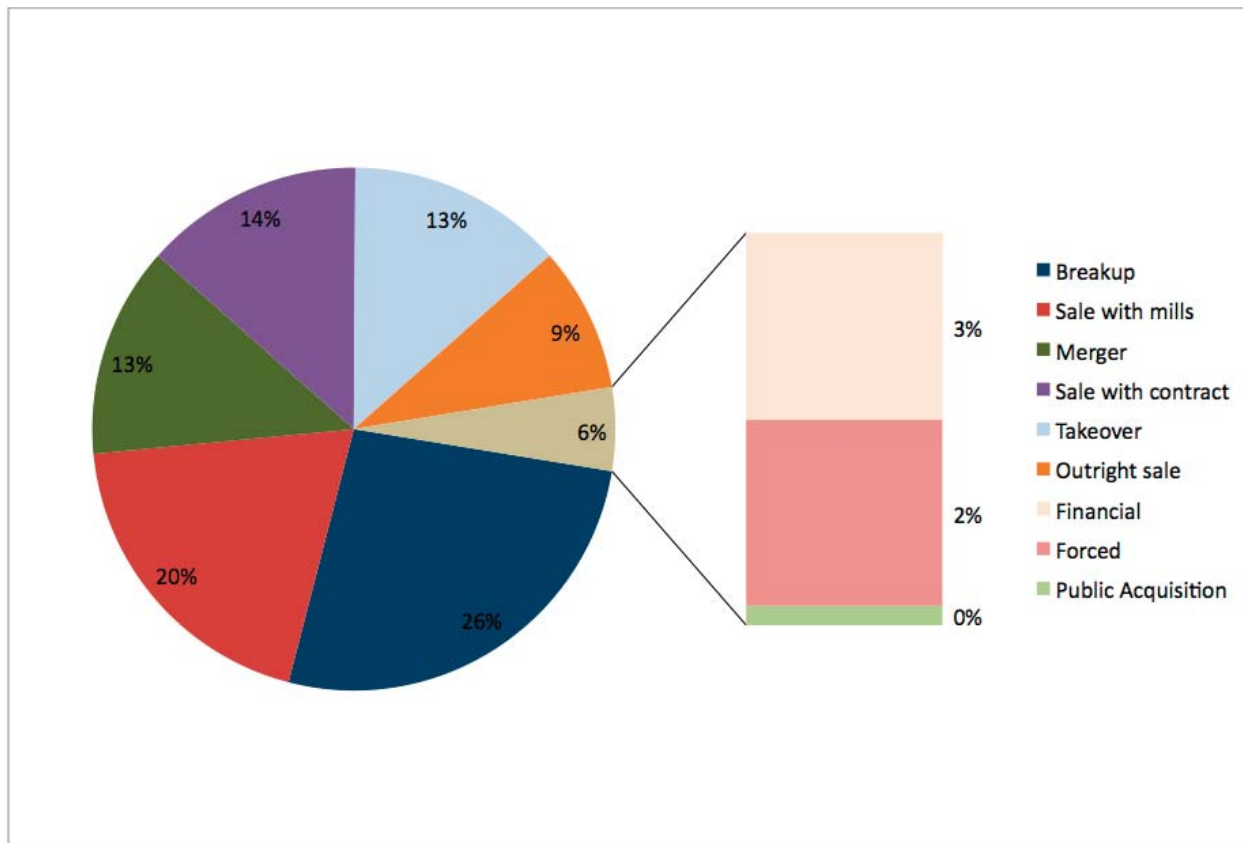


Figure 3. Acreage of Large Transactions by Type, 1980 – Spring, 2005. Transactions commonly lumped together as “sales” actually comprise a wide variety of situations leading to different outcomes.

Table I. Large Sales by Transaction Type, 1980-006.

Type	Short explanation	No.	Acres	Percent Of acres
Breakups	Sale of portion of ownership in region*	27	5,622	27
Sale with mills	Sale of entire property plus mills	6	4,141	20
Sale with Contract	Land sold with supply contract	5	2,881	14
Takeover	Corporate takeover	2	2,840	13
Merger	Lands acquired thru merger	7	2,777	13
Sale	Sale of intact ownership	13	1,908	9
Financial	Financial transaction only**	2	523	2
Forced	Forced sale***	5	520	2
Public acquisition		1	54	
			21,266	

* This category does not include instances in which sales represented breakups at a national corporate level, only those in which ownerships within the Northern Forest region were broken up. The Irving purchase from Bowater in 1998 came with a sawmill, but it tallied as a breakup here.

** Examples are GP to TTC "spinoff" through creating special class of stock. TTC later acquired by PCT. Also spinoff of New Hampshire lands to Crown Vantage by James River.

*** There were 2 Tribal acquisitions, and three resulting from bankruptcies. In a number of other instances, Public Lands trades were conducted that gave more acres to the state than the private owner received in return. In one instance, a private owner donated the lands with Timber and Grass rights to the state. These transactions are not tracked here, as the property came to the public sector, the acreages were not large in total, and tracking them would be laborious. Most of these trades had been completed by the early 80's.

Transactions by Seller Category

In this size class, there were 46 sales of industry land, totaling 84% of all acres sold. In addition, all sales by large private investors consisted of former industry land, in some instances held for only a brief period. Canadian industrial owners accounted for only a small portion of the largest sales during this period. (Figure 4, Table 2) The

large amount of industry land changing hands was inflated by the fact that most of the properties as of 1980 had changed hands two or more times over the period.

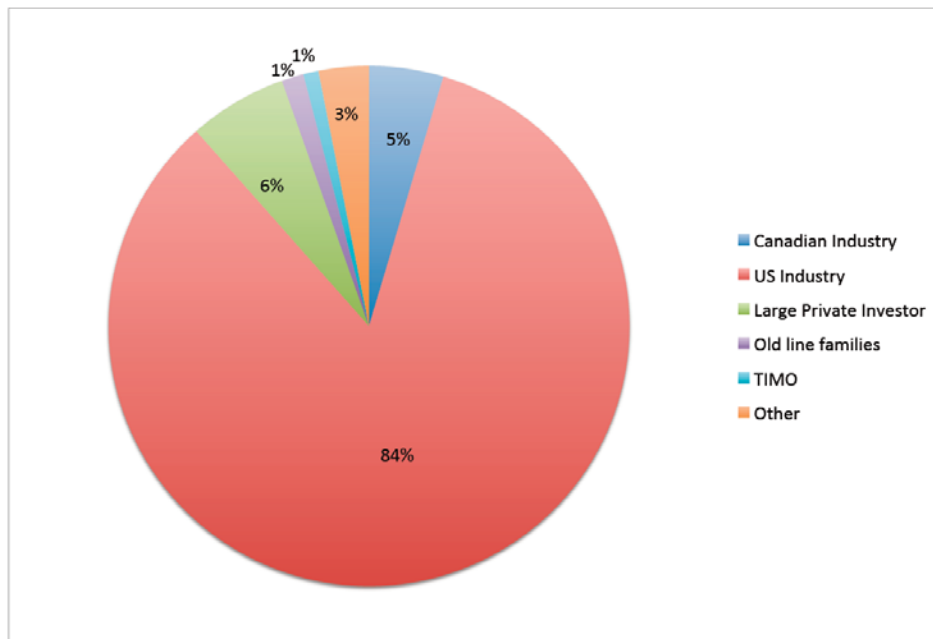


Figure 4. Acreage of Large Transactions by Seller, 1980 - 2006. Over the period, industry was the primary seller of land. This is largely because so many large ownerships passed through several industry-to-industry transactions before being sold to non-industry buyers.

Table 2. Large Sales by Seller Type. 1980-2006

Type	Short Explanation	No.	Acres	Pct.
IUS	US industrial owners	46	17,833	84
LPI	Large private investors	9	1,370	6
ICAN	Canadian industry	5	981	5
Other categories		8	1,082	5

Transactions by Buyer Category

US industrial owners accounted for almost half of the acreage purchased during the period (Figure 5). Yet, the industrials ended the period with less than 2 million acres, and by far, the bulk of this was held by Canadian firms. The mergers and other acquisitions within the industrial sector had a short lifespan, in a few instances less than a single year.

An earlier study for the Northern Forest Lands Council found that, through about 1994, sales had been predominantly between industrial owners. This pattern continued through the 1990s although the typical length of tenure on large transactions became very short. After about 1999, however, the tide turned, and the bulk of the transactions were away from industry to other owner categories.

Large Private Investors and Canadian industrial firms accounted for roughly similar acreages of transactions, and later in the period these groups also made some sales themselves. Because of the shrinkage of industrial ownership, these owners, together with the timberland investment management organizations (TIMO's), the one real estate investment trust (REIT), and the new timber barons are now important factors in the ownership picture. The new timber barons do not loom large in this tabulation, as their acquisitions have been below 50,000 acres in size with only one exception. Several of them have been accumulating land, creating new ownerships that are partially offsetting the more general trend toward fragmentation.

Other very thin slices of this pie indicate how modest has been the role of nonprofits, state and local governments, and native groups in acquiring tracts above 50,000 acres.

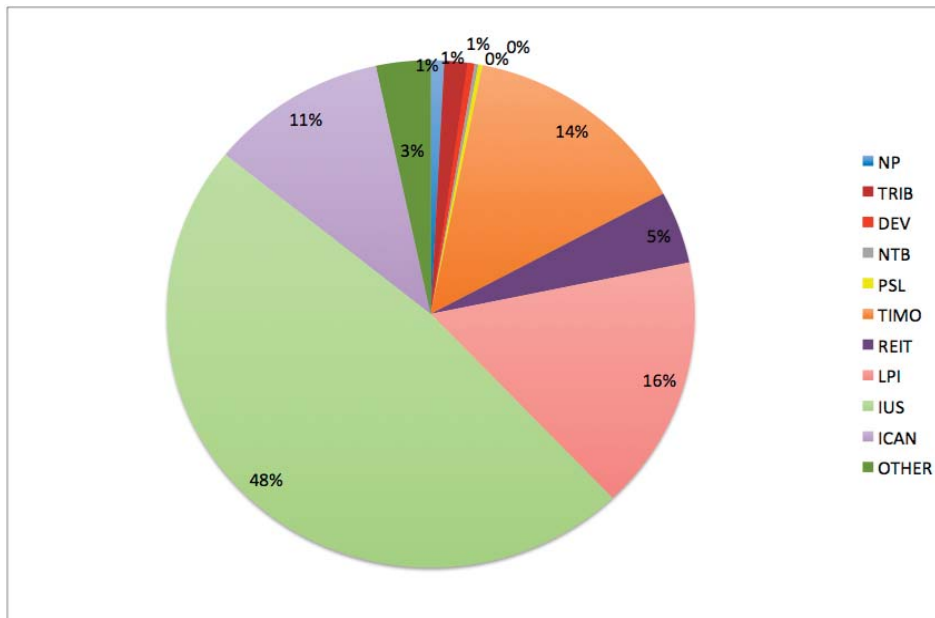


Figure 5. Acreage of Large Transactions by Buyer, 1980 - 2006. Industry was a large buyer of timberland in the region. The other buyer categories increased in importance later in the period.

Table 3 Large transactions by Buyer Type.

<i>Type</i>	<i>Short explanation</i>	<i>No.</i>	<i>Acres</i>
IUS	US industrial owners	19	10,186
LPI	Large Private Investor*	14	3,440
TIMO's	Timber investment management organizations	16	2,974
ICAN	Canadian industry	7	2,307
REIT	Real estate investment Trust (PCT)	2	980
DEV	Developer	1	90
NP	Nonprofit	1	175
NTB	New Timber baron	1	51
PSL	Public state/local	1	54
TRIB	Tribes	2	300
Other		4	268

* All Wagner-managed partnerships are in this category.

Transactions by Pathway

To further analyze the data, we defined *pathways* as identifiers of the seller and the buyer for each transaction. We analyzed only the 44 transactions larger than 500,000 acres. (Figure 6, Table 4).

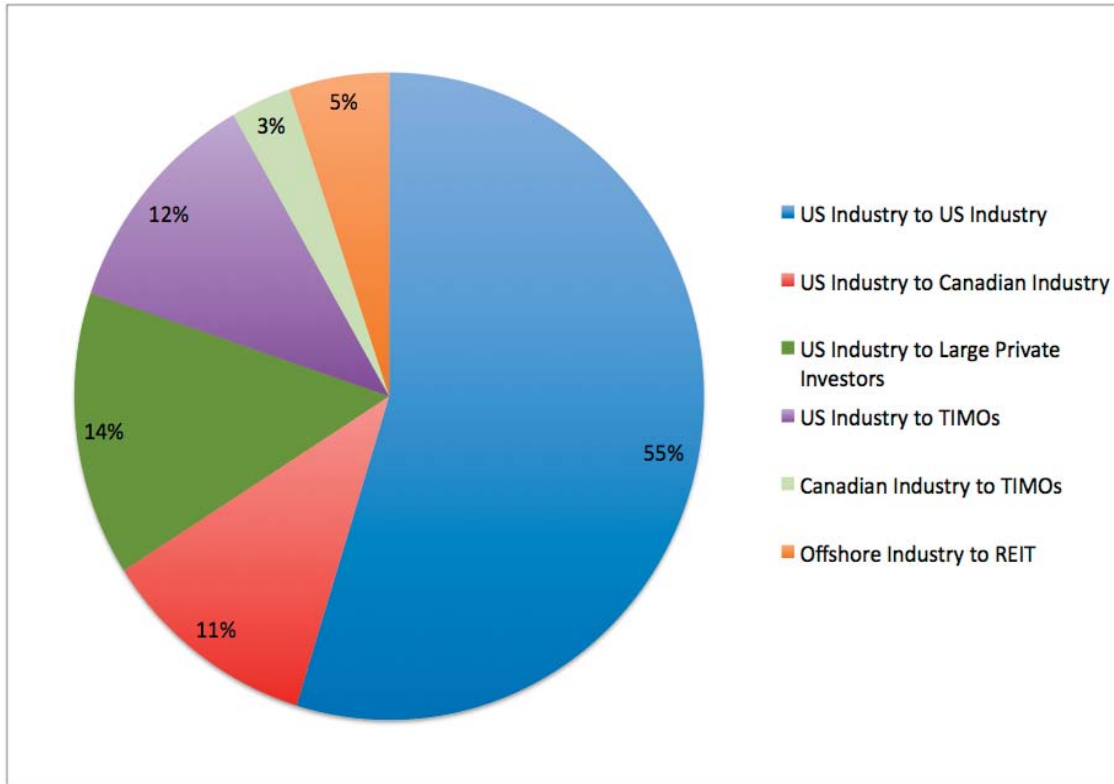


Figure 6. The Pathway from industry to industry dominated the period, followed by industry to TIMO's, Canadian Industry, and Large Private Investors.

Table 4. Transaction pathways with total transactions exceeding 500,000 acres in the Northern Forest, 1980-2006.

Pathway	Acreage	No. Transactions
US Industry to US Industry	9,626	18
US Industry to Canadian Industry	1,968	5
US Industry to Large Private Investors	2,501	9
US Industry to TIMOs	2,037	9
Canadian industry to TIMOs	544	2
Offshore Industry to REIT	905	1

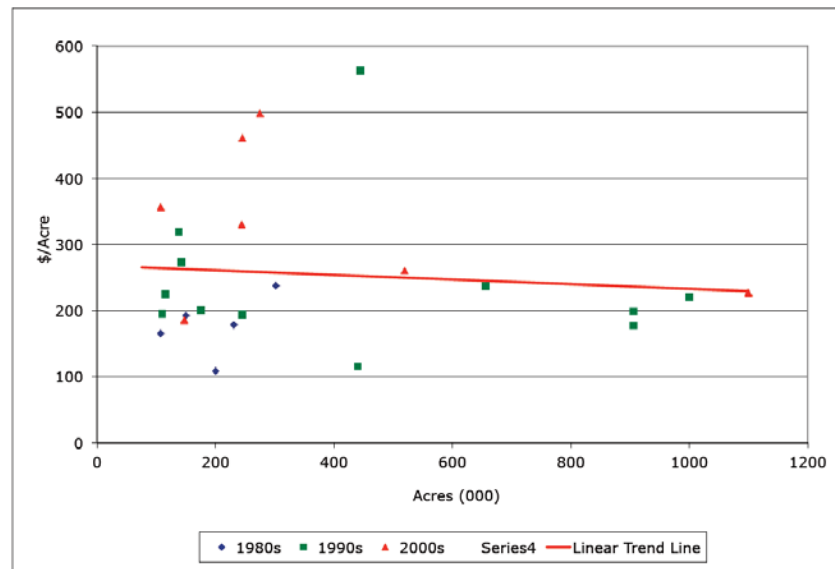


Figure 7. Large Transactions: Price per acre by transaction size and year (color), Real 2005 Dollars

Land Transactions and Prices: Partial Dataset

Price data was obtainable only for a subset of the transactions studied. Separately reported prices for the land are not available because some sales were in larger regional aggregates or together with mills; in other instances, prices were not publicly reported. Out of 68 transactions, price data were obtained for 23 of them (source: Forest Research Group proprietary files). While this dataset will not support very strong conclusions or predictions, it does illustrate some important aspects of the changes being studied. When these are arrayed by transaction size, they illustrate the familiar size-price curve (Figure 7). This curve is

illustrative; for actual application, a curve would only be made using recent transactions. Data on stocking levels of these properties were not available to permit adjustment for varying levels of timber stocking. Loosely speaking, the size-price relationship is based on the fact that a smaller dollar size of purchase can attract a larger number of interested buyers, leading to a wider market and more competition for the property. Buyers of large tracts understand this situation and plan to take advantage of it in the future.

The average price per acre for these transactions over time has risen (Figure 8). These are consistent with the general rise in prices reported in other sources (JWS, 2005)

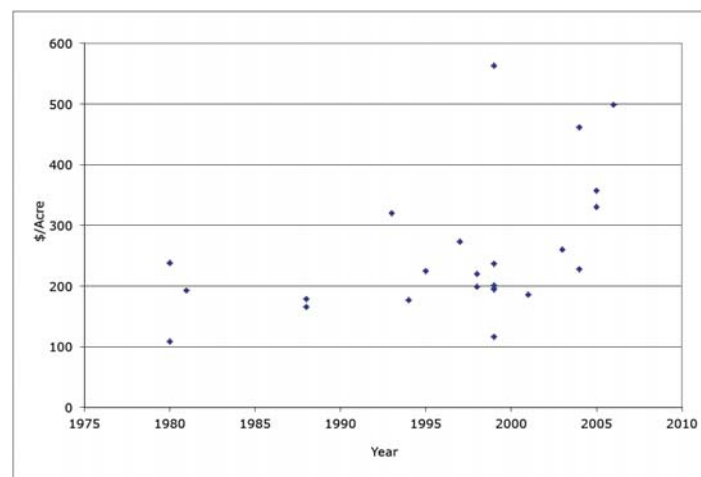


Figure 8. Price per acre by year. Current dollars.

Large Land Owners by Duration

We can classify owners by their duration of ownership. When doing this, an interesting fact that emerges is the survival of leading old-line family owners. Several family lumber companies remain landowners. The Irving's, who first purchased timberland in Maine in the 1940's, have expanded their ownership substantially. Further, large numbers of entities came and went – they owned lands briefly in this region during the 1980-2005 period and then vanished. Also striking is the number of longtime owners, part of the region's history, that vanished from the landowner rolls, especially after about 1990. Finally, the current landowner roster includes large areas owned by organizations entirely new to the Northeast. We offer here a selective listing illustrating the different patterns of duration of ownership in the region.

Survivors

J. M. Huber
 Pingree Heirs (managed by Seven Islands)
 Clients of Prentiss & Carlisle
 Dunn Heirs
 Baskahegan Co.
 Hancock Lumber Co.
 Robbins Lumber Co.
 Irving

Came and Went From 1980-2005

Goldsmith/DOFI
 James River
 Hancock Timber Resources Group
 Fraser, Inc.
 Champion
 Mead
 MeadWestvaco
 Daishowa
 Enron
 White Birch
 Inexcon
 Kruger/Daaquam
 SAPPI Ltd
 The Timber Company

Longtime Owners – Gone by 2005

St. Regis
 Diamond International
 International Paper
 Brown Company
 Boise Cascade
 S.D. Warren
 Sherman Lumber
 Lyons Falls
 Yorkshire
 Domtar
 LaValley
 Whitney Estate

New Owners during Period – Still in Region in 2005

Lyme Timber
 Timbervest
 GMO Renewable Resources
 Brascan (now Brookfield)
 Canfor
 Wagner - managed Partnerships
 The Nature Conservancy
 Appalachian Mountain Club
 Tribes
 Timberstar (Sale pending fall 2008)
 Clayton Lake Timberlands (Sold 2008)
 Plum Creek
 New Timber Barons: Haynes, Gardner, Carrier, and others

Case Studies of Ownership Change

The research led to a series of case studies of land ownership changes in the region that shed light on the complexities of the process. The Diamond sales are well documented by the Northern Forest Lands Council (1994). After 1994, the remaining Diamond lands went through a bewildering maze of sales and re-sales, with additional tracts ending up under easements or in public hands. Some of those lands became the cores of the short-lived James River holdings and then later of the Hancock Timber Resource Group holdings in the region. Two cases are described here: the Great Northern lands, and the Hancock Timber Resources ownership, which quickly reached a large size and then was equally swiftly wound up and sold. The lands of the Great Northern paper Company were sold 3 times just within the 1990's, and then broken up.

Great Northern Paper Company

The Great Northern Paper Company was the largest private landowner in the Northeastern US for several decades, having completed assembly of its 2.3 million acre ownership by the late 1950's (Figure 9). The company originated in Maine but became engaged in operations across the East as a result of several mergers, creating the Great Northern Nekoosa. By the late 1980's the Maine lands supported two large paper mills and a large sawmill. Until the late 1980's, the ownership was stable, except for re-arrangements due to land trades, the state's recovery of the "Public Lots" and the Indian land claims settlement. By the late 1980's the loss of volume and growth to the spruce budworm outbreak had limited the land's cash generating potential, and the mills began to feel the effects of increasing regional and international competition in groundwood paper grades.

In 1990, the entire company was acquired by Georgia Pacific. As GP had no other operations in

newsprint and groundwood papers, it soon sold the Maine operations with all the land to Bowater, Inc., a leading newsprint producer. In the late 1990's, Bowater sold the company off in pieces (Figure 9).

One million acres were sold to JD Irving Ltd, a privately held New Brunswick firm that already owned about 600,000 acres in northern Maine. At the same time, 656,000 acres were sold to partnerships managed by Wagner Forest Management Ltd. Principal investors in these were the McDonald interests of Alabama. These lands are involved in the "West Branch" project, a 47,000 acre fee sale to the state in 2003 and the 282,000 acre conservation easement completed in 2004.

The two paper mills and the remaining lands were sold to Inexcon Maine, Inc. a private group, which operated the business under the old name of Great Northern. Several conservation land transactions followed as part of efforts to sustain the company financially. In early 2003, Inexcon Maine went bankrupt. Fraser, Inc, a unit of Brascan International of Toronto, bought the operations out of bankruptcy and placed the timberlands into a TIMO-like structure, Katahdin Timberlands, which manages the remaining 300,000 acres (282,000 forested). Of this acreage, 200,000 acres were covered by the conservation easement held by TNC. In 2005, the Katahdin lands were folded into a new investment entity, Acadia, including former Fraser freehold lands in New Brunswick.

In sum, perhaps 1.9 million or more of these lands remain in working forest under new ownership, and 100,000 acres are in outright reserves, while about 500,000 acres are covered by conservation easements. The 300,000 acres of Katahdin Timberlands are held in a TIMO-like structure that is separate from the operating company managing the mills. Hence, these are no longer "industrial" timberlands.

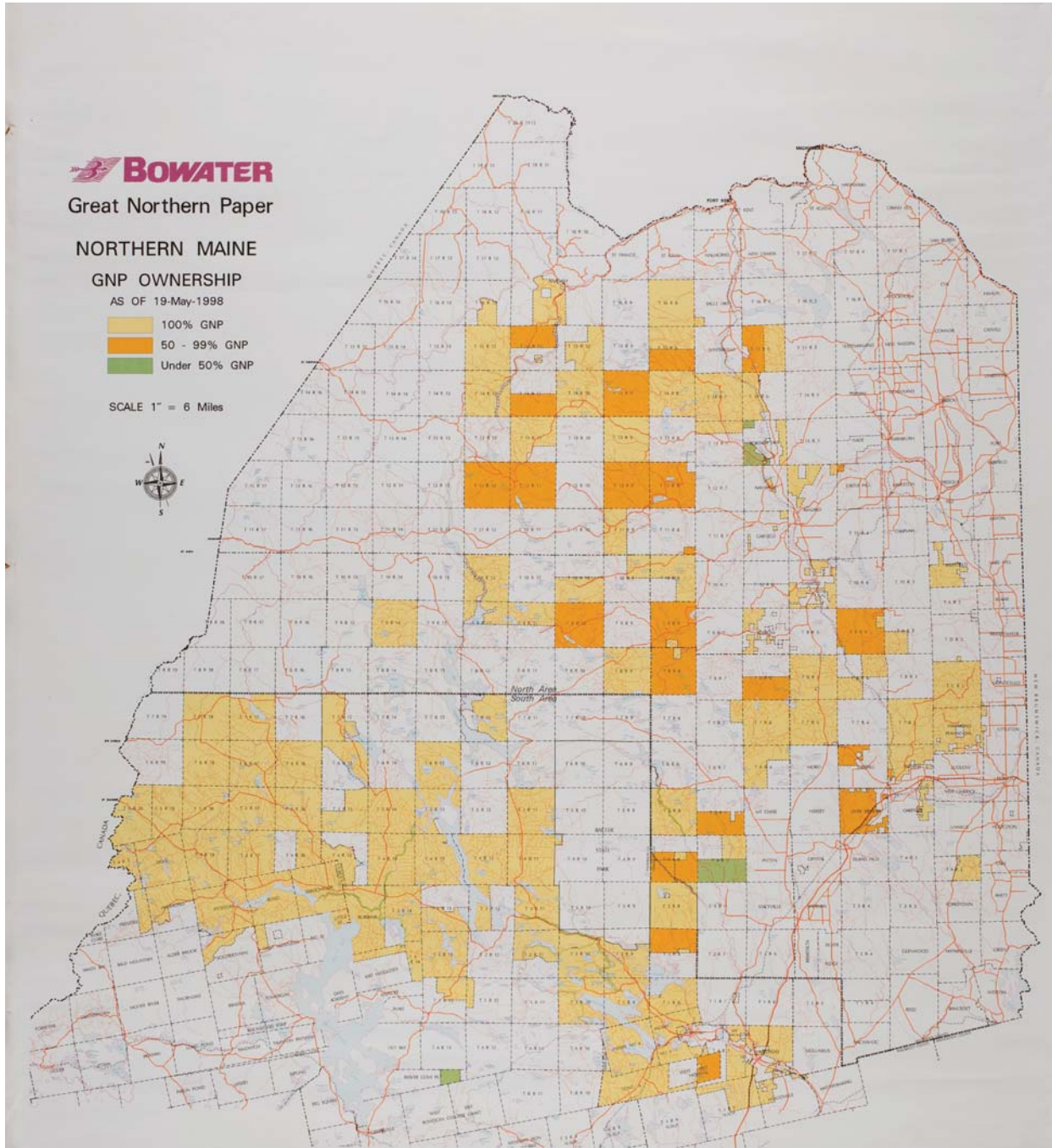


Figure 9. Great Northern Paper Company Ownership, 1989, prior to GP takeover. Some of the towns shown are common and undivided interests. This was the largest private holding in the region at that time, yet it did not consist of a single contiguous block.

Hancock Timber Resources Group

In the late 1980's, Hancock took an early lead in the emerging TIMO industry. Until the early 1990's, all of its acquisitions had been in the South and Pacific Northwest. Hancock began acquiring land in the Northeast in 1993. By about 2001, they decided to sell the properties and by the end of 2004 the task had been completed. Its role as a leading landowner in the region lasted perhaps a dozen years. Its story of accumulating a regionally significant timber investment portfolio from a variety of pieces may never be repeated again as available tracts become smaller and land prices rise. (The region's current leading ownership, GMO's former IP holding, was acquired in a single piece.)

a. Hancock Purchases

Hancock's purchasing coincided with a period of rising interest in monetizing timberland on the part of industry owners. In a period of four years, Hancock amassed a holding of about 680,000 acres across the Northern Forest (Figure 10). About 2/3 was purchased from industry in just five transactions. The largest of these was the 238,000 purchase in 1993 from James River, a company that had a general policy of avoiding timberland ownership, but had made an exception by

acquiring lands in the Northeast. Some of the James River land had previously been owned by Diamond. Two firms essentially in liquidation, Lyons Falls and Crown Vantage (a successor firm to James River), sold Hancock large tracts in New Hampshire and New York. The other third of its purchase were from two "old line families" and an investor group. The average acquisition was 85,000 acres; although, this average is a weak indicator considering the great differences in tract sizes.

b. Hancock Sales

In our background interviews, we were often told that TIMO's like to avoid buying from other TIMO's. But as Hancock faced the task of unwinding its position in the Northeast, it found that other TIMO's were the largest single category of buyer. Three other TIMO's purchased from them a total of 123,000 acres, their average purchase being just less than 25,000 acres. The largest was the Yorkshire property in New York - 72,000 acres sold largely intact since its 1995 acquisition. When a TIMO purchases land for investment, title is typically divided among the "sponsors" whose funds are invested. The TIMO continues to manage the properties as a unit, but, when it is time to sell, these units of the property are often available for separate purchase.

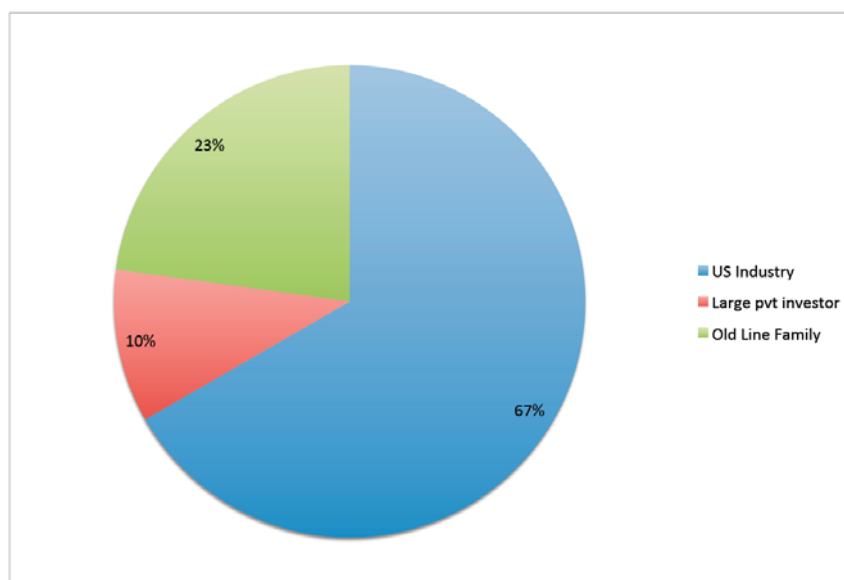


Figure 10. Purchases and Sales in Northeast by Hancock Timber Resource Group

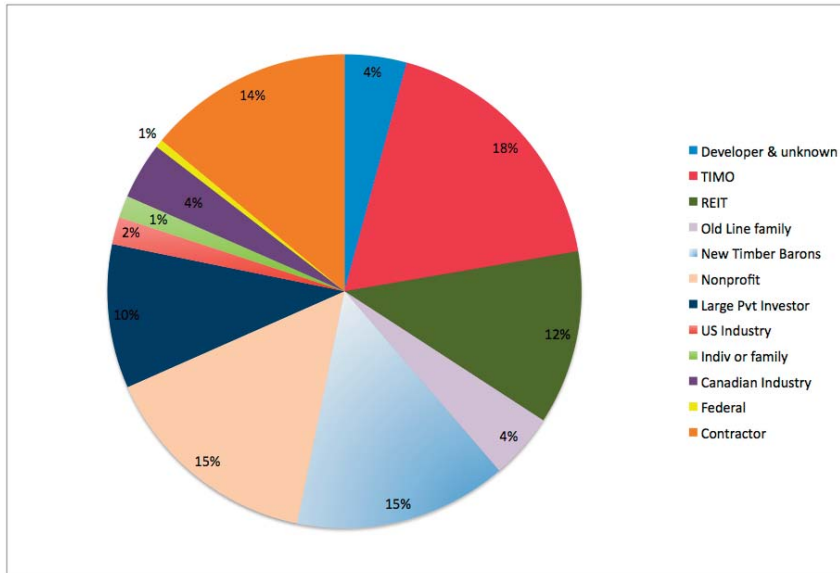


Figure 11. Hancock Sales by Buyer Category. Total of 683,462 acres with an average size of 11,770 acres.

A total of 58 sales were made by Hancock from 1995 to 2004 (Figure 11). Their average size was 11,770 acres, which is somewhat misleading because the sizes are skewed towards smaller acreages. Many of the sales were likely already outlots that did not result in subdivision of previously contiguous parcels. The size distribution of sales was:

22,000 acres (one town) and larger	10 sales
10 - 22,000	12
5,000 - 9,999	15
4,999 or less	21

Although the number of sales was higher in the small-acreage categories, fully 56% of the acreage sold, or 382,000 acres, remained in ownerships larger than 22,000 acres.

The nonprofit sector acquired a significant part of the lands sold, 15% or 103,000 acres. Direct sales to state, federal and local governments were very small. Plum Creek Timber acquired 81,000 acres in New Hampshire and Maine.

The New Timber Barons and Contractors together purchased almost 200,000 acres of the Hancock lands, virtually all in Maine and New Hampshire (as we classify them, the principal difference between the contractors and New Timber Barons is one of size... none of the Contractors owns properties on the scale of the NTB's, and the NTB's usually have more diversified businesses as well). The ability and willingness of this group to mobilize capital for long-term ownership is a new development in Maine.

Many of the ownerships purchased by Hancock were moderately to highly fragmented when purchased; smaller size of sales simply reflects unbundling of ownership and not necessarily cutting up of contiguous parcels. In several instances, large ownerships were sold intact: the New York Yorkshire lands sold intact to GMO (72,000 acres) and the former GNP lands in the Jackman area (55,000 acres) were re-sold to John Malone. In other instances, substantial contiguous tracts have largely retained their identity. Interestingly, the Large Private Investor category was sixth in order of acreage purchased from Hancock.

Land Transactions: Overview

This analysis illustrates how complex the land sales activity has been, in terms of the different kinds of owners and buyers, and how transaction activity has changed over time. Motivations for transactions can be widely different, as can their subsequent effects. Even within the forest industry corporate sector, the process has not been simple or one-dimensional. Not only that, there have been varying trends even within categories. We have found, in fact, that devising a clear and useful categorization of buyers and sellers has been elusive. There has been a striking fluctuation in the incidence of land sales. Certain properties passed through different hands on multiple occasions in just a quarter century, while others remained in the same hands the entire period. Probably one third to one half of the total transaction volume involved repeated sales of identical acres.

Effects on Forest Management

A key result of this process has been the elimination of the very largest ownership sizes. The days of single ownerships exceeding one million acres are virtually over. At present, only one survives – GMO's IP acquisition of late 2004. Today, even ownerships exceeding 500,000 acres are unusual, and those seem likely to be fragmented further in coming rounds of land sales. Investors understand that better prices can be had by selling in smaller pieces. The reduction in average size of ownership is not necessarily a bad thing in itself. Forest management need not be significantly affected by smaller ownership holdings and, in some ways, could actually improve. In the case of some properties covered by extensive conservation easements, limits are placed on how many further subdivisions of ownership can be made. The size of properties in the Northern Forest remains comparable to those seen in other parts of the country.

There is some reason for concern, however, over the short time horizons now envisioned by many of the new financial owners. With sales every decade or so, significant transaction costs must come out of the land. Debt is often incurred, raising the risks. On each sale, more high value lots will be subdivided. To put the matter in extreme terms, there are tracts of timberland in Maine that were formerly owned by one owner for as long as two entire rotations. Under the holding periods now spoken of by many TIMO's, such a tract could change ownership four or five times in one rotation. With short time horizons, many management practices make little sense. Also, it is difficult to think of a single property owned by financial investors that has a higher ratio of professional time devoted to management per acre than under the previous industrial owners. Naturally, they prefer to speak of this as "efficiency." It is said that some investors have noticed that the ten to twelve year holding periods typical in the TIMO world are not adequate to allow owners in the North to be rewarded in the market for practices that boost value. Those investors are beginning to consider longer holding periods. Modern computer mapping and recordkeeping represents an improvement over 1960's methods. These certainly aid in continuity of management and efficiency, but observers may still feel some unease over the outlook for future ownership stability and its effects.

Data on management practices and silvicultural investments are available only for Maine (MFS, annual). They show a complex picture, but as of 2004, they did not indicate any dramatic changes in the amount of silvicultural investment. In the years since, however, such investment has declined sharply. Data on the total harvest level do not show any trend that can be clearly related to the past decade's ownership changes.

The New Owner Categories

It is interesting to note the kinds of organizations new to the region's ownership picture. *Nonprofit groups* such as the Nature Conservancy and the Appalachian Mountain Club have become owners and operators of commercial forests. They aim to manage in a more conservative manner than other landowners, respecting a wide range of environmental values. These ownerships remain relatively small, however. The entrance of a new conservation buyer, Roxanne Quimby, is a new development recalling Governor Baxter, who used personal wealth to advance a conservation cause. Ms. Quimby now reportedly controls about 84,000 acres of the Maine woods and is believed to be an active bidder on other tracts.

The late 1990's brought the arrival in a significant way of *large private investors*. Sir James Goldsmith with his mid-1980's activity, turned out to be a unique figure who spawned few imitators – the opportunities for profiting by the kinds of breakups in which he specialized dimmed as the stock market improved (Fallon, 1991). More recently, large investors have been acquiring tracts of managed forest as portfolio investments, of uncertain planned duration. Certain high net worth individuals have also invested in timberland in the region, both as actual financial investments as well as for recreational preserves for their families.

A most interesting development has been the local entrepreneurs who have been successful in trucking, wood brokering, and land dealing who are now emerging as large scale landowners with a long time horizon. These individuals and their families reportedly control over 800,000 acres of forestland, mostly in Maine. They are termed by some the "*New Timber Barons*" and are so described here. If these operators hold their lands long enough, their descendants will become the "*Old Line Families*" of the later 21st century.

Finally, *institutional investors*, through TIMO's and REIT's, seem likely to be an enduring feature of the region's timberland ownership, despite the complete exit of Hancock from the region. In fact, other TIMO's were major buyers of Hancock's lands. This should continue unless there is a dramatic flight from timber assets on the part of portfolio managers. Thus far, though, there is ample capital seeking timber investments.

In addition, two important *new forms of ownership* have emerged: the conservation easement, and the long-term timber supply contract. At present, there are nearly three million acres of working forest around the region covered by conservation easements that prevent development and limit subdivisions (Table 5). Roughly 10% of Maine's commercial forest is covered by easements. This is a significant fact for future land use in the region.

Several million acres are covered by long-term wood supply contracts, which guarantee large volumes of wood to buyers. Often these mills are retained by the former owners of the lands. This means two things. First, fiber supply is still important to the region's wood-using industries. Second, some observers argue that these contracts amount to a guarantee that the land will remain in commercial forest uses.

One category whose activity was minimal in relation to its ownership was the Old Line Families. While smaller holdings in this category did liquidate, for whatever reasons this ownership class has outlasted the powerful multinational corporations with their mills, access to international capital markets and other supposed advantages as long-term timber owners.

Table 5. Major Conservation Easements in Northern Forest Regions, Spring 2005. (partial listing)

<i>State</i>	<i>Property</i>	<i>Acreage (1,000)</i>
Maine	Pingree Heirs	760
	Katahdin	200
	W. Branch (McDonald)	230
	Downeast Lks	320
	Nicataous	25
New Hampshire	Pond of Safety	11
	Bunnell Mtn	18
	Conn. Lakes Headwaters	147
Vermont	Former Champion	84
New York	IP	255
	Tug Hill GMO	32
	Lyons Falls	18
	Former Champion (FLG)	110
	Great Eastern (FLG)	17
	Former Yorkshire	19
	Lassiter	45
	Domtar	84
Former NIMO (GMO)	10	

Sources: various summaries and contacts. See also DeGooyer and Capen (2004). This estimate is based on a survey by K. deGooyer and D. E. Capen, Analysis of conservation easements and forest management in New York, Vermont, New Hampshire, and Maine, Rubenstein School of Environment, University of Vermont, July 2004, report to NEsFA, processed 75 pp.). They estimated 2.5 million acres. Several more recently completed projects (e.g. IP in NY) bring the total near 3 million.

Role of Government

The activities of the nonprofits far overshadowed the purchasing actions of state and federal governments during this period. Recent years have been marked by a dominance of private initiative, advocacy, and funding in identifying purchasing opportunities, responding to unexpected opportunities, and mobilizing government support in state houses and in Washington. Nowhere did there exist a plan by any government agency identifying priorities and planning out these acquisition programs (see, for Maine, Irland, 1998). Instead, acquisitions of land and easements followed by and large the willingness of private owners to act, and the ability of the nonprofit actors to organize the process. Government was oddly passive, responding to deals initiated by others in many (but not all)

instances. Many of the larger transactions were negotiated by the NGO's, with governments brought in later to pay the bills (for details on leading examples, see, Office of Governor Shaheen, 2001, and New England Forestry Foundation, n.d.). Though not involved in deal structuring to any extent, the federal government was a major funder of these efforts – to the tune of \$172 million (Table 6). These funds made possible acquisitions of easements in the four states totaling 1.2 million acres. The four northern forest states received 58% of all the Legacy funds committed to the 20-state Northeastern region of the US Forest Service's State and Private Forestry Region.

Table 6. US Forest Service Forest Legacy Funding, Cumulative to Nov 10, 2008.

State	Tracts	.Acres	Total Value (\$thousands)	FLP Payment	Legacy Percent
Maine	20	646,896	101,768	45,112	44%
New Hampshire	36	215,104	47,829	30,998	65%
New York	11	51,482	22,226	10,575	48%
Vermont	38	64,841	19,037	12,743	67%
Four Northern Forest States	105	978,323	190,860	99,428	52%
NE Area Total*	291	1,167,070	357,569	171,561	48%
Northern Forest As % of NE Area	36%	84%	53%	58%	n.a.

The region's two National Forests, primarily in New Hampshire and Vermont, received funding from a variety of sources. These focused on locally important additions and inholdings. Compared to the scope of the entire amount of transactions over this period, however, their net change in ownership was small (Table 7). Additionally, each state in the region had its own acquisition program. In the "Forever Wild" region of the six million acre Adirondack Park, considerable pressure was exerted for major purchases both of lands and easements. Yet, the Park, over the entire period, added only 211,000 acres in fee ownership over 25 years, or 8%, to its 1980 holding of 2.5 million acres. Easements, roughly 500,000 acres, far exceeded fee purchases.

Table 7. Major Public Ownerships.

	Fee Acres			Easement Acres		
	1980	2004/5	Change	1980	2004	Change
Federal						
GM/FFNF*	279,874	392,194	112,320		310	
WMNF**	742,648	779,216	36,568		40,278	
			148,888 (total)		40,588	
New York						
Adirondack Park	2,489,966	2,701,102	211,136	14,86	500,000	485,139

*Green Mountain/ Finger Lakes National Forest

** White Mountain National Forest





Conclusions

The Northern Forest was one of the earliest regions in North America where private paper companies established extensive landholdings to support their mills. Up to the 1970s, in the aggregate they were continuing to add to their holdings. While sales of these large tracts did occur, in virtually every instance they were from one industrial owner to another who continued to operate them much as before. Up to the mid 90's, industry executives, publicists, and outside experts continued to state that timberland ownership was a key to the industry's business model. Wall Street experts seemed to agree (Binkley, 1989; Hagenstein, 1989). Yet, even as industry ownership of land has declined, the supply motive has not disappeared: 2.9 million acres of the property sold was covered by long-term supply contracts.

Yet accumulating adverse competitive forces overwhelmed this consensus in the late 1990's (see, e.g., Irland, 1999, 2004, 2005). Ownership of vast tracts of forest could not shield the companies from these forces. Fortuitously, new pools of capital interested in owning large forest properties emerged. A booming market in remote lakefront and "view lots" emerged, affecting the entire region and increasing the opportunity cost of growing wood. In a brief time, then, the ownership of forest in this region shifted from domination by lumber and paper companies to domination by financially motivated investor groups. It is now clear that the significant role played by the large owners in this region depended on a special set of historical circumstances. As those circumstances no longer apply, the ownership picture has changed dramatically. The future holds still more



uncertainties (Beardsley, 2003). Both the interested public and governments continue to be concerned about the future for traditional uses of these forests (National Community Forest Center, 2004; Nadeau-Drillen, 2005; Governor's Task Force, n.d., Maine Land and Water Resources Council, 2001.

Several new ownership types emerged from this shift, most prominent being the so-called "New Timber Barons" who are local businessmen who were able to accumulate significant timberland holdings. As well, the private conservation groups, NGO's with access to foundation and private donor capital to acquire land, were able to secure large areas in the form of easements and fee ownership. The region's conservation estate has increased dramatically. Most observers agree that without this significant re-sorting of private ownership, these conservation gains would not have occurred.

The federal government, through ongoing programs and earmarks, supplied a considerable amount of the funding for the conservation acquisitions that accompanied and, in some ways, facilitated these ownership changes. The federal government, however, ended up owning only nominal amounts of this land itself.

In many ways it is too early to appraise the effect

of these ownership changes on forest management and on important public values such as public access and biodiversity. Too much significance should not be read into the ownership changes themselves. Had the industry owners of the early 1990's remained in control, market forces would have compelled them to make some of the same decisions the new owners are making. Further, despite the reductions in average size of large ownerships, significant fragmentation of actual landscape units is not common, and the ownerships remain quite large by national standards.

An era has indeed ended in the North Woods of New York and New England. The past, whatever its other problems, did have elements of stability and predictability that are now gone. New ways to manage shared problems and public values of these lands will have to be found.

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Appendices

Appendix Table 1. Basic transactions data, Northern Forest, 1980-2006.

STATE	YEAR	SELLER	BUYER	Acres (000)	SellerType	BuyerType
ME	1990	GNP	GP w mills	2,050	IUS	IUS
ME	1991	GP	Bowater	2,050	IUS	IUS
ME	2004	IP	GMO	1,100	IUS	TIMO
ME	1998	Bowater	Irving	1,000	IUS	ICAN
ME	1994	SDW	Sappi	905	IUS	IUS
ME	1998	Sappi	PCT	905	IUS	REIT
ME	2000	Champion	IP	887	IUS	IUS
ME	1982	Diamond	Goldsmith	790	IUS	LPI
ME	1984	St. Regis	Champion	743	IUS	IUS
ME	1999	Bowater	MacDonald	656	IUS	LPI
ME	1988	DOFI	James R.	560	LPI	IUS
ME	1996	Boise	Mead	550	IUS	IUS
ME	2002	Mead	MVW	550	IUS	IUS
ME	2003	MeadWestvaco	Bayroot (Wagner)	519	IUS	LPI
ME	1997	GP	TTC	440	IUS	OTH
ME	1999	TTC	undiscl (Wagner mgt)	440	OTH	LPI
ME	1999	Bowater	Inexcon ME	415	IUS	ICAN
ME	1980	Brown Co.	James R	351	IUS	IUS
ME	1980	James R.	Boise	302	IUS	IUS
ME	2003	Inexcon (GNP)	Brascan	300	ICAN	TIMO
NY	2006	IP	Lyme Timber	275	IUS	TIMO
NH	1980	Brown	James River	250	IUS	IUS
ME	1999	IP	Clayton L. Tids	245	IUS	ICAN
ME	2004	Irving	Timberstar	245	ICAN	LPI
ME	2005	Fraser	The Forestland Group	244	ICAN	TIMO
ME	1988	DOFI	Fraser	231	LPI	ICAN
ME	1980	IP	JDI	200	IUS	ICAN
ME	1999	IP	TNC	175	IUS	NP
NH	1984	St Regis	Champion	172	IUS	IUS
NH	2000	Champion	IP	172	IUS	IUS
ME	1981	Various	Tribes	150	VAR	TRIB
ME	1981	Dead River Co	Tribes	150	IUS	TRIB
NH	2001	IP	Lyme (via TPL)	147	IUS	TIMO
ME	1997	James R.	Champion	142	IUS	IUS
NY	1984	St Regis	Champion	140	IUS	IUS
ME	1993	James R	HTRG	138	IUS	TIMO
ME	2004	Bayroot (Wagner)	Pending	125	LPI	VAR
ME	1995	J.M. Huber	HTRG	115	OLF	TIMO
NH	1996	Boise	Mead (MOC)	113	IUS	IUS
NH	2002	Mead	MWV	113	IUS	IUS
NH	2003	MWV	Bayroot (Wagner)	113	IUS	LPI
NY	1999	Champion via TCF	Forest Land Gp	110	IUS	TIMO
ME	1988	Boise	Daaquam/ Kruger	108	IUS	ICAN
ME	2004	Daaquam	Canfor	108	ICAN	ICAN

Appendix Table 1. Continued...

ME	2006	Pingree	Timberstar	105	OLF	LPI
NY	1982	Diamond	Goldsmith	96	IUS	LPI
NY	1988	Goldsmith	Lassiter	96	LPI	LPI
ME	1999	United Timber	Wagner partnerships	91	IUS	LPI
NH	1982	Diamond	Goldsmith	90	IUS	LPI
NH	1988	Goldsmith	Rancourt	90	LPI	DEV
NY	2005	DOMTAR	Lyme Tbr	84	ICAN	TIMO
VT	1999	Champion via TCF	Essex Timberlands	84	IUS	LPI
NH	1996	J R	Crown Vantage	83	IUS	IUS
ME	2000	McDonald	Dillon	80	LPI	CON
NY	2006	GMO	Rayonier	75	TIMO	REIT
NY	1994	Yorkshire	HTRG	72	LPI	TIMO
NY	2003	HTRG	GMO	72	TIMO	TIMO
NY	2004	National Fuel	FIA	72	OTH	TIMO
NY	1996	Lyons Fls P&P	HTRG	67	IUS	TIMO
ME	1989	IP	Daishowa	63	IUS	IOF
ME	2004	Enron (Daishowa)	White Birch	62	IUS	LPI
ME	2004	White Birch	TimberVest	62	LPI	TIMO
NH	1993	James River	HTRG	62	IUS	TIMO
ME	1994	GNP/Bowater	HTRG	55	IUS	TIMO
ME	1984	United Tbr	Boise	54	IUS	IUS
NH	1988	Rancourt	State of NH, VT & USFS	54	LPI	PSL
ME	2002	HTRG	Malone (Frontier LLC)	53	TIMO	LPI
ME	2004	IP	Haynes Dwelley Haynes	51	IUS	NTB
		68 transactions		21,266		

Sources: published information plus extensive interviewing with appraisers, market participants, and andowner officials. Because our purpose was to tabulate transactions by states, in several instances, "transactions" shown here as separate ones actually formed part of a single regional transaction. The effect is to reduce the average size of transaction somewhat from what actually took place.

Appendix Table 2. Landowner categories

We used a series of categories to identify the owners. Our full database of the large transactions is in the appendix to this report, so that any analyst wishing to apply a different set of categories may do so. The database can also be available electronically on request to the authors.

This list has been developed following considerable discussion. We concluded that that no one set of categories will be fully satisfactory, because the situation we are analyzing is very complex. To avoid excessive rigidity, we apply this categorization with some flexibility. In some instances, for example, a single individual or company may actually fall into more than one category. In few instances we were not able to locate sufficient information to place an owner into a category; those were listed as “unknown”.

Summary List of Categories

<u>Category</u>	<u>Code</u>
<i>Industry – US</i>	<i>IUS</i>
<i>Industry – Canada</i>	<i>ICAN</i>
<i>TIMO</i>	<i>TMO</i>
<i>Large private investor</i>	<i>LPI</i>
<i>New Timber Barons</i>	<i>NTB</i>
<i>Nonprofits</i>	<i>NP</i>
<i>Developers</i>	<i>Dev</i>
<i>Public – state or local</i>	<i>PSL</i>
<i>Real estate investment trust</i>	<i>REIT</i>
<i>Tribes</i>	<i>TRIB</i>
<i>Other</i>	<i>Oth</i>

There is no category for federal as no federal purchases in the region exceeded the 50,000 acre size that we are including in this report.

*Explanation of Categories**Industry – US (IUS)*

This category includes companies with manufacturing plants in the area supported by fee timberlands. US domiciled companies. This category includes smaller, locally owned sawmill companies owning land.

Industry – Canada (CAN)

Includes Canadian companies owning land with mills using wood from Maine lands.

TIMO (TMO)

Timber Investment Management Organizations, which manage land for various clients, usually but not always institutional investors. Leading examples include Hancock, Forest Land Group, Timbervest, and GMO.

Large private investor (LPI)

This category includes individuals owning substantial tracts, apparently with moderate to long time horizons for ownership. Their motives are largely if not purely financial. Since Goldsmith was not in the wood products industry on his acquisition of Diamond, we treat him here as a large private investor. Also so treated are clients of Wagner Forest Management, officially anonymous or known by names of the partnerships, such as Yankee, Merriweather, or Typhoon. Ideally, this category would not include institutional investors, though some partnerships are rumored to be owned by institutions.

New Timber Barons (NTB)

In the past, logging contractors typically owned only small parcels of land. Since the industry switched from stumpage sales to “contract for logging services” (CLS) operations, larger tracts became available, and several large companies spun off their company crews and camps, several larger contractors have accumulated and held land. In total these operators are estimated to own some 800,000 acres in Maine, some say this is a low estimate. Some observers term these individuals the “new timber barons.”

Nonprofits (NP)

Only in recent years have nonprofit conservation groups become significant owners of land in their own right, notably the TNC (IP lands, 175,000 A in N. Maine, and AMC). They are now especially active as easement holders.

Developers (Dev)

Developers are a very small category, virtually precluded from this database by the size category discussed in this report. These would be firms actually doing some construction and development on property and not merely selling lots.

Public, State and Local (PSL)

State, county, or local government agencies.

Real estate investment trust (REIT)

The only known examples active in the Northeast during the period of this dataset are Plum Creek and Rayonier. A REIT is a special corporate structure, designed under tax laws to enable the firm to avoid tax at the firm level by passing all earnings through to shareholders. PCT does manufacture wood products in other parts of the US, but not in Maine, so it is not considered "industrial" for purposes of this analysis.

Other

In a number of instances, for smaller tracts we were unable to determine enough details to establish a category, or there was only one example of a distinct owner type.

Appendix Table 3

Timberland Sales Since 2006

State	Buyer	Seller	Acreage	Comments	Date
New York	Nature Conservancy	Finch Paper Holdings LLC	161,000	20 yr wood supply agreement	Jun-07
New York	Trust for Public Lands, et al	Rayonier	52,000		Jun-07
New York	New York State	Nature Conservancy	58,000		Jun-07
New York	ATP/RMK	Nature Conservancy	92,000		Mar-09
New York	Rayonier, Inc.	Lassiter	53,800	2/3 under conservation easement	Mar-08
New York	Timbervest LLC	Clerical Medical	77,000		May-08
New York	Forestland Group	Lyme Timber	84,400		Jun-09
			578,200		
Vermont	Plum Creek	Essex Timber	86,200	under conservation easements	Sep-08
Maine	Tall Timbers Trust	Clayton Lake	240,000		Apr-08
Maine	Pinnacle Forest	TimberStar	310,000	under conservation easement	Jul-07
Maine	Tall Timbers Trust	Stetson	110,000		Dec-09
Maine	Conservation Forestry	Huber	64,300		Dec-09
Maine	Haynes	Forestland Group	103,000		Dec-10
Maine	Malone	GMO	1,003,000		Jan-11
			1,830,300		
New Hampshire	Forestland Group	Lyme Timber	146,400	under conservation	Sep-09
Total			2,641,100		

Source: RISI, ForestWeb, Company Press Releases and Web Sites, Bangor Daily News



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Since its founding in 1901, the **Yale School of Forestry & Environmental Studies** has been in the forefront of developing a science-based approach to forest management, and in training leaders to face their generation's challenges to sustaining forests. The School's **Global Institute of Sustainable Forestry** continues this tradition, in its mission to integrate, strengthen, and redirect the School's forestry research, education, and outreach to address the needs of the 21st century and a globalized environment. The Global Institute fosters leadership through innovative programs, activities, and research to support sustainable forest management worldwide.

The Global Institute has become the center for forestry at the School, coalescing and coordinating activities through programs focused on specific areas of research, including Forest Health, Forest Physiology and Biotechnology, Forest Policy and Governance, Landscape Management, Private Forests, and Tropical Forestry. The Institute is home to the Yale School Forests, 10,880 acres of managed forests in New England used for education and research; and is host to The Forests Dialogue, an international group committed to the conservation and sustainable use of forests. The Yale Forest Forum (YFF) is the convening body of the Global Institute of Sustainable Forestry. Through YFF, the Institute holds events at the Yale School of Forestry & Environmental Studies involving stakeholders from diverse sectors.