# Strategic Factors Driving Timberland Ownership Changes in the U.S. South

Mike Clutter
Brooks Mendell
David Newman
David Wear
John Greis[1]

[1] Hargreaves Professor of Forest Finance, Visiting Assistant Professor, and Professor of Forest Economics at the Center for Forest Business, University of Georgia; Project Leader Southern Research Station, USDA Forest Service; Co-leader, State and Private Forestry Forest Resource Specialist, Southern Region, USDA Forest Service. The authors want to thank the Southern Region State and Private Forestry and The Southern Research Station for support and funding of this research, Additionally, technical assistance was provided by the Southern Group of State Foresters and in particular David Fredrick for help with fire resources assessments in the Southern States.

Executive Summary

The U.S. South has experienced an unprecedented change in timberland ownership over the past decade with over 18 million acres of timberland changing hands. The primary sellers of this asset are the traditional vertically integrated forest products companies and the largest identifiable group of buyers is institutional investors interested in timberland as an investment. While these transactions have occurred in all major timber growing regions of the country, the U.S. South, which has the largest concentration of both industrial ownership and non-industrial private ownership in the United States, has been the most significantly impacted.

This research focuses on the primary factors impacting this change in timberland ownership. We report on a series of interviews with senior managers involved in executing timberland acquisition and divestiture strategies. These interviews provide a framework to further analyze questions regarding how such ownership changes impact silvicultural decisions, fire suppression support and activities, and expenditures on forestry research. As expected, the ownership classes studied differ in their approach to these and other timber and timberland management objectives.

Primary factors that companies cite for selling timberlands include (1) poor shareholder returns and the need to increase those returns, (2) debt reduction through the sale of timberland assets (usually in situations where consolidation in the industry has left large amounts of debt on companies balance sheets), (3) increased tax efficiency through the movement to more efficient tax entity structures such as Real Estate Investment Trusts (REITs) or subchapter S Corporations, and (4) the development of tax strategies that minimize the impact of large capital gains tax implications (strategies such as installment notes or certain merger structures). Additionally, most vertically integrated forest products companies have come to recognize that raw materials for use in their mills are readily available in deep and mature markets throughout the United States. These markets clearly establish the value of internally available raw materials – a point of considerable debate throughout the industry for many years.

The purchasers of these timberlands include institutional investors and other tax advantaged entities such as REITs and sub-chapter S Corporations. These entities are attracted to timberland for a variety of reasons including (1) strong historical risk adjusted returns, (2) the low correlation with other traditional asset classes such as stocks, commercial real estate, bonds, etc. - timberland provides substantial diversification opportunities in a large investment portfolio, and (3) its apparent correlation with inflation thus providing a “hedge” against inflation. Consequently, investment inflow from institutional investors to the timberland asset class has been in excess of two billion dollars per year over the last several years. Currently institutional investors have over 15 billion dollars invested in U.S. timber and timberland.

Many of the timberland investments made on behalf of institutional clients are managed by timberland investment management organizations (TIMOs) who are responsible for purchasing and managing the timberland properties. Most of these

investments are of fixed length, usually between 10 and 15 years. Given the short investment horizon relative to the traditional vertically integrated forest products companies, there are expected differences in the management of the timberland properties as they change hands. Generally the institutional investors are more focused on returns over the life of the investment while the traditional companies have a more varied set of objectives including returns, wood supply objectives, and environmental and corporate social objectives. TIMOs and their institutional clients appear to apply less silviculturally intensive particularly during the establishment phase than the traditional forest products companies. They are less inclined to invest in treatments that have long-term benefits (high intensity mechanical and chemical site preparation) and are more interested in shorter duration treatments like midrotation fertilization. In general there is a belief among these entities that the market will not place additional value on higher productivity – particularly if it is in premerchantable timber at the end of the investment horizon. These differences in management objectives, in many cases, lead to changes in silvicultural intensity and productivity as forests change ownership.

Another trend of considerable interest to a wide variety of stakeholders is the phenomena of forest fragmentation as forest properties change ownership. In some cases, as timberlands are sold the real estate parcels are identified and sold separately into the real estate markets. However, in other cases the timberlands are sold as a complete package. One trend is evident, however. All of these owner types are becoming more aggressive about identifying and monetizing real estate opportunities. Turnover in timberland ownership will continue to accelerate fragmentation issues on the urban – rural fringe.

Taken in total, this trend in timberland sales represents a considerable change in ownership pattern across the South. In many cases the timberlands changing hands are managed similarly and there appears to be no direct impact on the properties. However, in other cases – particularly where management objectives change dramatically or where substantial pressure is placed on cash flow requirements for the property, large changes in harvest levels and management objectives can and have occurred. In almost all cases there has also been a substantial increase in the amount of debt used to finance the timberland acquisition.

It is our expectation that these types of timberland divestitures will continue unabated. Overran estimated seven billion dollars of institutional money is currently available for the purchase of timberland, and there is considerable pressure on those holding timberland – particularly in less efficient sub-chapter C corporations--to monetize the asset. We expect that in three years there will be only one traditional vertically integrated forest products company with timberland holdings that exceed one million acres in the U.S. South.

Introduction

Over 23 million acres of industrial timberland has changed ownership in the past five years in large transactions (Wilent 2004) in the United States. The traditional vertically integrated forest products companies have been the sellers and Timber Investment and Management Organizations (TIMOs) have been the purchasers. Trends appear to be continuing with additional timberland sales by integrated forest products companies in 2004 and 2005.[2] Timberland transactions in the South alone account for over 18.3 million acres (Clutter 2005).

Several factors appear to be behind these land transactions. Financial performance has been poor in the forest products industry, including disappointing shareholder returns (Table 1). Consolidation among companies in the industry has left substantial debt on their balance sheets. A change in strategic thinking has occurred that recognizes that timberland ownership may not be required to be in the forest products manufacturing business. Deep and mature markets have developed for most raw materials in most regions of the country, allowing forest products operations to rely on purchasing their raw material needs from the open market. Finally, more efficient tax structures for owning timberland have evolved – such as single-taxed real estate investment trusts (REITs) and S-corporations - replacing the traditional double-taxed C-corporation as the preferred structure in which to own timberlands.

Table 1: Forest Product industry performance relative to key benchmarks

| | 2004 returns | Five-year return | Ten-year return |
|---|---|---|---|
| Dow Jones Industrial | +5.3% | +0.7% | +13.1% |
| S&P 500 | +10.9% | -2.3% | +12.1% |
| Forestry & Paper Group | +5.1% | -0.9% | +6.2% |

Source: Wall Street Journal, 2/28/05

Substantial concerns arise regarding the impact of these timberland ownership changes, including:

- Where are the changes focused and how much change is occurring?
- Will the management objectives and silvicultural practices of the new owners change or lead to change in the foreseeable future?
- Will this trend increase / accelerate fragmentation across forested landscapes?
- What are the potential effects of these changes on forest resource functions?
- What are the potential effects on institutions including forest land managing and landowner assistance agencies and conservation organizations?
- How might this impact the role – and funding – of long-term forestry research?
- Will the changes impact the relationships between timberland owners and the communities in which they have timberlands?

[2] Six of the nine largest timberland transactions in the Southeastern U.S. in 2004 featured industrial sellers: Boise Cascade (two sales totaling almost 800,000 acres); International Paper's sale of 56,800 acres in Arkansas; MeadWestvaco's 55,200 acre sale in Alabama and Georgia; Plum Creek's 137,500 acre sale in West Virginia to The Forestland Group; and Weyerhaeuser's 270,000 acre sale in Georgia.

In one context, these questions address the alternate business strategies employed in the development of a firm's business policy and the implementation of the resulting strategy designed to allow the firm to achieve its objectives. The pursuit of these goals and objectives does not occur in a vacuum, but is subject to competitive business, changing political, and sensitive public environments. The essence of understanding business strategy requires understanding how firms and executives formulate resource allocation decisions. In pursuit of this objective, we conducted a series of interviews with decision-makers in the forestry industry to better understand their objectives for owning – and selling – timberlands, and how these objectives filter down to issues of forest management, investments in forestry research, and community engagement / involvement.

Additionally, through the interviews, we developed a framework for conducting an environmental analysis of the industry by identifying the key factors driving forest industry executives to make their buy/hold/sell decisions. In other words, we want to know:

- What drives industry success (in the eyes of senior managers and executives)?
- What is the outlook for investment and timberland asset management?

The interviews were designed to collect data on the primary factors involved in selling and purchasing large blocks of timberland. These interviews provide a basis for understanding the rationale for such ownership changes.

Literature Review

The last twenty-five years produced a number of studies of land use changes by major uses, i.e., forestry, agriculture, and urban land (i.e. Hardie and Parks 1997; Ahn, Plantinga, and Alig 2002). Additionally, a number of studies have considered the impacts of timberland ownership changes on water quality (i.e. Nagubadi and Zhang 2004), biodiversity (Wear and Greis 2002), and silvicultural activities (Kline et al 2002). Yin et al (1998) summarize industrial timberland statistics and address the rationale and strategies associated with industrial timberland ownership.

Ahn, Plantinga, and Alig (2002) found that forest returns, timber prices, and the ratio of timber-to-crop income (when considering the conversion between timberland and agriculture lands) act positively on increasing timberland acres. This body of research also indicates that increasing inflation favors conversion of land into forestry uses (Hardie and Parks 1997). Alternately, population density drives the conversion of timberland and agricultural land to urban use (Ahn, Plantinga, and Alig 2002; Hardie and Park 1997). The logic is that as population increases, additional land is needed for homes and the requisite infrastructure, such as roads, schools, and commercial, and industrial sites.

Nagubadi and Zhang (2004) note how changes in land can affect water quality and biodiversity (Basnyat et al; Powell et al). Also, forest type changes can significantly

impact forest quality and their ability to provide timber, wildlife habitat, recreation, and environmental amenities (Wear and Greis).

Ahn et al (2002) represents one of several studies seeking to identify the determinants of changes in land use. Assuming constant stumpage prices, they project 1.8 million acres of South Central timberlands will be part of the total land converted to meet population increases over the next 50 years. More recently, Wear and Newman (2004) study spatial patterns of assessed forestland prices in Georgia and find that rising non-timber values, such as household income and population, suggest changing land use patterns, with rising land prices in urbanizing areas a key predictor of the future development of forestlands.

Timberland Ownership Trends

The Center for Forest Business at The University of Georgia's Warnell School of Forest Resources has been tracking large timberland transactions since the fourth quarter of 1996. Currently there are over 400 transactions that identify buyer, seller, acres, sales price, and some information about location(s). The smallest transactions are about 5000 acres and the largest is approximately 4.3 million acres (Georgia-Pacific / The Timber Company and Plum Creek). Sources for the data include personal communication, company press releases, industry trade publications (Paper Loop, Timber Mart South, etc.) and newspaper and wire services. These data represent a cross section of the transactions that have occurred between 1996 and 2004.

Table 2. Acres of timberland sales by state and survey unit (1996 through 2004).

| | | FIA Unit | | | | | |
|---|---|---|---|---|---|---|---|
| **State** | **Total** | **1** | **2** | **3** | **4** | **5** | **6** |
| **Alabama** | 2,583,175 | 13,344 | 443,811 | 621,445 | 775,375 | 607,000 | 122,200 |
| **Arkansas** | 1,633,695 | 146,879 | 12,700 | 1,314,096 | 124,020 | 36,000 | - |
| **Florida** | 1,935,270 | 1,378,930 | 542,340 | 14,000 | - | - | - |
| **Georgia** | 2,326,875 | 952,357 | 337,985 | 806,316 | 205,817 | 24,400 | - |
| **Louisiana** | 3,634,969 | 894,023 | 307,441 | 875,257 | 113,732 | 1,444,516 | - |
| **Mississippi** | 1,782,410 | 1,785 | 387,137 | 588,120 | 350,070 | 455,298 | 0 |
| **North Carolina** | 341,483 | 133,243 | 13,746 | 135,879 | 58,615 | - | - |
| **Oklahoma** | 355,594 | 321,594 | 34,000 | - | - | - | - |
| **South Carolina** | 1,074,512 | 241,780 | 190,131 | 642,601 | - | - | - |
| **Tennesse** | 1,067,954 | 40,200 | 90,500 | 343,000 | 447,500 | 146,754 | - |
| **Texas** | 778,251 | 328,210 | 450,041 | - | - | - | - |
| **Virginia** | 924,852 | 459,172 | 241,680 | 70,000 | 126,000 | 28,000 | - |
| **Total** | **18,439,040** | | | | | | |

As shown in Table 2 and Figure 1, there are some "hotspots" around the South including north Florida, south and central Georgia, south Alabama, Louisiana, and Arkansas. Over 85 percent of the transacted area moved from less efficient tax structures to more efficient tax structures – generally from subchapter C Corporation status to at least subchapter S status or to a REIT or other non-tax entity status. Over 75 percent of the acres which have changed ownership originally started with a traditional vertically

integrated forest products company. Some of the properties have changed ownership several times over the life of the study.

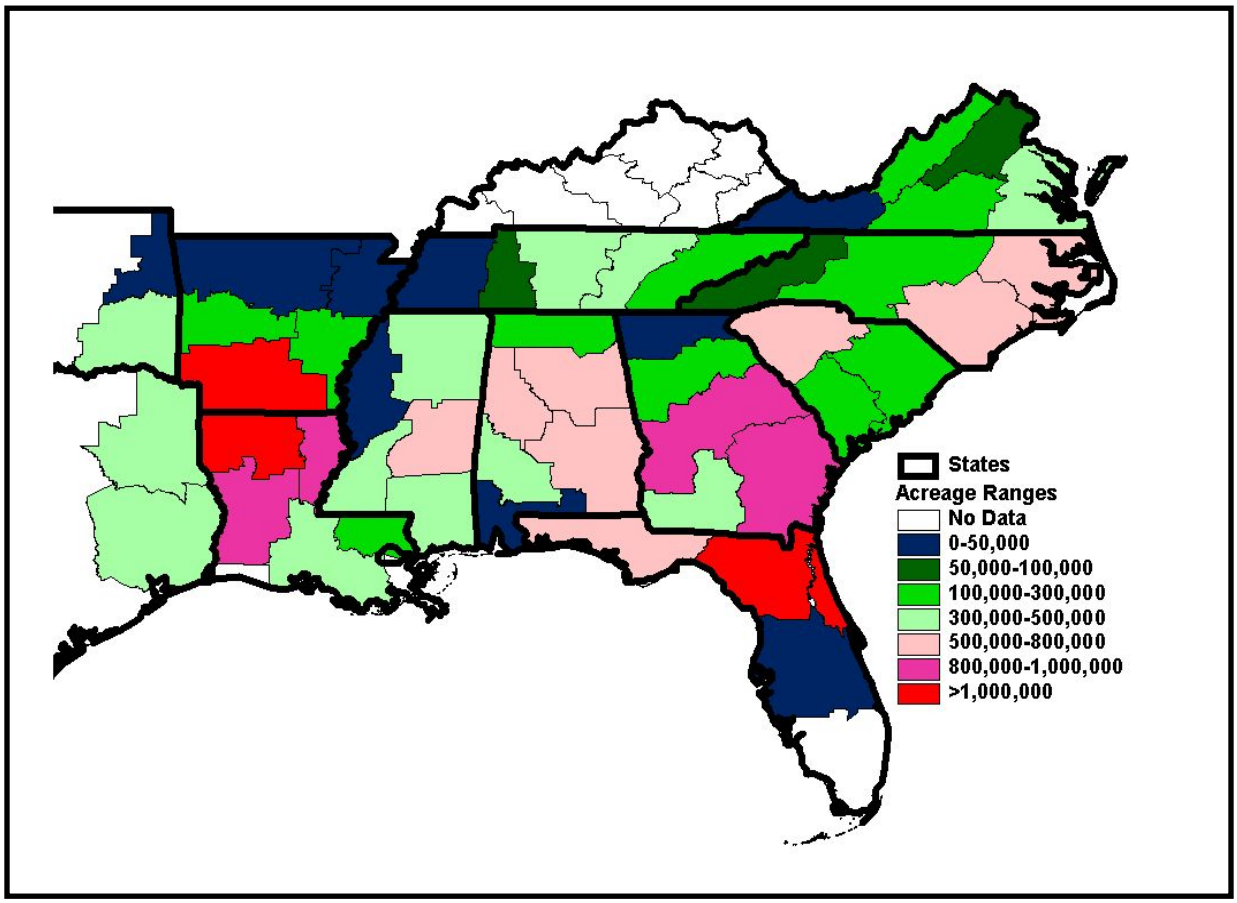


Figure 1. Thematic map depicting acres of timberland sales by state and survey unit across the south.

Methodology

This project relies on interviews across three industry sectors to determine how these entities manage timberlands and how they perceive others are managing timberlands. The question driving the interviews is "How are pine types managed by various entities?"

All interviews worked off of a common set of questions that were organized under four categories:

1. Strategy and objectives for owning/buying/selling timberlands: These questions addressed the specific strategies and factors used to drive timberland ownership (business) decisions and forest management (silvicultural) practices.
2. Criteria and metrics: Questions identified the specific criteria used to measure forest management performance by the organization and, when relevant, which and how these were shared with clients.

3. Research and expenditures: Questions explored perspectives on long-term forestry research, how and when the organization participated in forestry research (i.e., through coops, in-house, outsourced). When relevant, additional questions were asked regarding specific expenditures, such as soil mapping and technology.
4. Community impacts: Questions addressed three specific areas of concern with respect to timberland ownership changes: community presence and relationships, fragmentation, and fire suppression. Discussions address the interviewees' perspectives on these issues, and how their organizations managed or worked with these issues.

Interview Findings

Between October 2004 and April 2005, twenty-three executive managers at integrated forest industry firms, timberland investment management organizations (TIMOs), and regional forestry consulting firms were contacted to participate in structured interviews. Nineteen agreed to participate in confidential interviews, either in person or over the phone. It was understood in advance that all data would be reported in aggregate form, and that quotations would not be attributed directly by name. The nineteen interviews represented fifteen unique firms.

1. Strategy and Objectives

TIMO managers and executives reflect the preferences (and language) of their institutional investors when describing their objectives and strategies for managing and owning timberlands. Client preferences and investment horizons impact the choice of silviculture treatments, leading TIMOs to tend to invest in silviculture early in the life of the investment funds, but not later.

Among these investment managers, there was an explicit recognition of the realities of how their clients judged them, and how the performance metrics are established:

> "Everyone says 'maximizing long-term returns" and that cash flows and short-term results do not matter. In reality, investors are shocked within 3 years at how little cash is generated."

> "We make money on growth."
> "Appraisals drive our business."

Generally, these fund managers advocated a view of forest management as "financially justified, intensive management." Managers, through their in-house foresters or contractors, look at investments incrementally. Any activity is seriously considered if it exceeds the client's hurdle rate and/or falls within the usually 10-year time horizon or if it can be otherwise justified based on client objectives and metrics.

TIMO managers also view their services as specialized, but silvicultural activities themselves as commodities. "Timberland management is a low cost business. Costs must be squeezed from the system. Innovation is one way to do this."

Table 3. Strategy and Forest Management (unique firms)

| | Primary strategy | | Lead forester | |
|---|---|---|---|---|
| | Financial | Non-financial | In-house | Contractor |
| TIMOs | 7 | 0 | 2 | 4 |
| Forest Product firms | 4 | 2 | 5 | 0 |
| Forestry consultants | 0 | 2 | 2 | 0 |

Two forest industry firms identified fiber production for mills they own as the primary role of company owned timberlands. In particular, one firm stated that the primary objective for timberlands is as strategic leverage for fiber supply to support manufacturing.

The remaining four identified financial objectives as driving timberland ownership and forest management decisions. Two firms actively engaged in the use of 1031 like-kind[3] exchanges to upgrade their portfolio of timberland holdings. As one executive noted, "swapping 5% returns for 8% returns makes sense."

Another forest industry executive emphasized that the firm did not focus on "forests or timberlands", but on "asset utilization, from the aquifer to the atmosphere." Their ownership is managed from a land perspective: "This is not a raw materials inventory for our mills."

The forestry consultants emphasized that forest management was dictated by the client. While, at the end of the day, the objective is to "maximize the wealth of the client," the day-to-day silviculture activities are clearly designed to meet the objectives of particular landowners (clients), and these objectives vary widely. However, most forestland owners that hire forestry consultants have financial performance as a primary objective.

2. Criteria and Metrics

Each interviewee category exhibited somewhat unique preferences for the fundamental criteria and metrics used to measure on-going forest management peformance. TIMOs, without exception, focused on the financial metrics of concern to their clients. In six out of nine interviews (five out of seven TIMOs), this measure was

[3] A 1031 like-kind exchange is an Internal Revenue Service regulation that allows the exchange of capital assets. Hence, the original basis in the capital asset is retained by the new owner. This deal structure has become commonplace in small to medium sized timberland sales / acquisitions. The IRS code treats all capital assets as candidates for 1031 exchanges.

some variation of cash return plus asset appreciation, as established through appraisals. The second most common measure was risk-adjusted returns.

These metrics reflected a general attitude toward silviculture treatments. As one TIMO manager noted, the decision criteria are not about "how much timber, or what type will you grow. Rather, it's 'what will the market pay for this treatment if applied?'"

Integrated forest products firms also emphasized financial indicators, but used a broader set of measures. While the preferred metric was return on investment (ROI), firms also use other discounted cash flow (DCF) measures such as NPV and IRR. Operational measures such as fiber generation, with two firms in particular, ranked at or near the top of the list.

While financial performance and "meeting budget" matters significantly to forestry consultants, the resounding mindset was that "client satisfaction is the key." As one forestry consultant executive noted, "this is a repeat and referral business."

3. Research and Expenditures

TIMOs view silviculture information as a "commodity" and, in general, appear reluctant to invest in long-term research or forestry coops. One TIMO manager said they would not invest in research or silviculture if one could not "cut the value out with a saw." In other words, if the impact does not show up in the growth and yield models or appraisals, it does not pay to make the investment.

Though TIMOs viewed long-term research "at risk," this differed by region. There was concern that USDA staffs are retiring and receiving dwindling funds, and that coops appear to have shrinking memberships. Universities are, often, "not a good value because" the administrative overhead is too high, and pricing not flexible enough to allow for different types of memberships in the coops which would fit the objectives of new types of forest owners.

One TIMO that uses and supports coops believes that there are no secrets within the sector and that coops should compete. "We will not have a Westvaco or Weyerhaeuser University in-house. It does not make sense to grow your own seedlings; need to share these research costs with others."

All of the forest industry firms we interviewed invest in research and soil mapping, to some degree or another. Two executives felt that soil mapping had generated significant returns. "It's expensive, but worth it." Also, all of the forest industry firms expressed concerns about long-term forestry research and discontent with their current arrangements with coops. As one executive noted:

> Coops did wonderful work for what they were designed for when they were set up; now they have outlived their usefulness because they have become so "siloed." The coop of the future will be integrated across a region and a range of disciplines.

Executives said, “coops have got to change” to establish flexible pricing arrangements and broader research portfolios in one location. However, interviewees considered the role of coops – and private enterprises – central to plantation growth and improvement, and clonal forestry.

Forestry consultants did not spend time thinking about or investing in forestry research. It “does not make sense” to invest in research or coops when “someone else owns the asset.” However, substantial investments come in applying existing research and technology to lower costs and improve results, and many of these firms would participate in coops if a tiered fee structure existed that better met the needs of their clients – the owners of these assets.

5. Community Impacts

With respect to the importance of community presence and relationships, all respondents recognized value in maintaining, at a minimum, positive working relationships with the communities within which the timberlands they own or manage are located. However, the relative importance and the resources allocated to these activities varied widely.

Integrated forest product firms and forestry consultants spoke explicitly to the direct community relationships established and maintained by their employees. Forestry consultants viewed these activities as necessary and important in maintaining presence and relations within the communities in which they operate and maintain client relationships. Two forest products firms spoke explicitly to the role of “community” in managing for a “triple bottom line” (identical wording used by two different firms), which refers to a focus on financial, environmental and *community* objectives.

TIMOs differ in their approach. The majority of those interviewed (see table) relied on their forestry contractors to establish and maintain sufficient working relationships within the communities. As one TIMO executive stated, “We’re not going to ever build little league fields.” There were exceptions. Larger TIMOs, those with geographically concentrated holdings, and those with more in-house foresters recognized greater value in direct community presence.

Table 4. Community Presence (unique firms)

| | Direct | Indirect |
|---|---|---|
| TIMOs | 3 | 4 |
| Forest Product firms | 6 | 0 |
| Forestry consultants | 2 | 0 |

Interestingly, fragmentation was not viewed as a major concern or priority by any interviewee. Several TIMO executives viewed the opportunistic land sales resulting from fragmentation as a net positive occurrence. Forest industry executives and forestry consultants viewed the consequences of fragmentation as a mixed bag of negatives (increased forest management costs, decreased efficiency, potential impacts on wood

supplies) and positives (increased prices and profits for land sales, increased opportunities to upgrade timberland holdings through 1031 like-kind exchanges, increased edge for wildlife, an increased number of potential clients for forestry consultants). In particular, this is not a concern of senior management, but is an area of concern among operating managers. However, the general belief is that timberland acres will "move to their natural home."

One TIMO links fragmentation and fire issues, noting that when timberlands are held in large contiguous blocks, it makes sense – from an "investment discipline" perspective – to more directly manage fire issues along with efficient timberland management. Fragmentation puts more pressure on the state to mitigate and respond to fires.

Fire suppression (unique firms)

| | Self managed | Rely on states |
|---|---|---|
| TIMOs | 0 | 7 |
| Forest Product firms | 2 | 3 |
| Forestry consultants | 0 | 2 |

This sentiment was reflected in the results of our queries regarding the approach to and resource allocation associated with fire suppression activities. Two integrated forest product firms continue to provide the majority of their own fire fighting resources, with the balance of the firms relying more and more – or exclusively – on state resources. "That's part of where our property taxes go." Generally, these firms coordinate with forestry subcontractors to provide support to state agencies for fire fighting and prevention activities if possible. However, these efforts have not been particularly successful in maintaining availability of private fire fighting resources.

TIMOs and forestry consultants rely almost entirely on state resources. Exceptions exist in high risk areas or during peak fire seasons, where TIMO forest managers may pay forestry contractors to be "on call" or to maintain fire fighting equipment and water tanks near areas of concern in a minority of cases.

To assess the southern States fire suppression assets available for use we talked with all of the Fire Fighting Coordinators for each state. These individuals provided estimates of both State assets and other assets put at their disposal during fire suppression activities. As expected, the reduction in fire suppression assets due to land ownership changes is substantial.

Most southern states have experienced significant reductions in private fire suppression capability during the past 15 years, the time frame during which industry ownership has been declining (Table 2). Historically, forest products companies have largely provided for their own fire suppression needs and have made equipment and crews available for non-company land fire suppression during emergency situations. Based on the interviews conducted as part of this project, it is apparent that this situation

is changing. As a result, state forestry agencies find themselves responsible for fire protection on an increasingly large corporate and small non-industrial forest land base.

The thirteen responding states report reductions in the availability of 700 private cooperator-owned and available tractor/plow units. Of the thirteen states, only Kentucky has not reported a reduction; others ranged from 12 to 142 (Georgia). Notably, Kentucky has the smallest share of forest industry ownership in the South. Limited reductions in air tanker availability (4), 20 person hand crews (1), and helicopters (1) were also reported.

Recent and anticipated substantial reductions in fire fighting assets, combined with the additional complexity of dealing with increasingly fragmented ownerships, will present formidable challenges to states and the federal government alike. These reductions have been across all of the ownership classes. Those vertically integrated forest products companies that still own substantial acreages have chosen to reduce the number of fire suppression crews available. Similarly, much of the site preparation equipment being managed by independent site preparation contractors is not currently configured to be useful in a fire suppression situation, further reducing the assets available for this activity.

Discussion and Conclusions

A primary message from both the interviews and the transaction data is that shareholders, analysts, and executives of the traditional vertically integrated forest products firms believe that returns on industry-owned timberlands lagged alternative investments, a fact complicated by the lack of recognition of asset appreciation and growth on forest products firms' income statement.

The transaction data clearly indicate that markets, as efficient allocators of capital, have redistributed timberlands into more efficient ownership structures which can generate and report returns that include asset appreciation and growth. Selling timberlands has freed up capital for vertically-integrated firms to use in debt reduction and generated shareholder wealth. Additionally, many of the executives commented on the ease of selling timberland assets relative to other mill assets making the strategy even more attractive to those publicly traded entities.

An important consideration in the execution of this strategy is that the assets can be sold or transferred without incurring a substantial tax liability. Most of these timberlands have been on the traditional forest products companies books for many years at very low cost basises – hence the capital gains implications for such sales are substantial. With the recent development of installment notes and other strategies for mitigating capital gains taxes these types of transactions became plausible. Currently, with most transactions the buyer and seller split up the gain in value due to increased tax efficiency and then delay or remove and capital gains tax implications with an installment note or carefully structured merger.

During our interviews it became apparent that it is important to recognize differences in ownership changes versus land use changes in any given timberland divestiture / acquisition. In the preponderance of transactions ownership changes did not

lead to substantial land use changes. For example, Rayonier's change from a subchapter C Corporation to a REIT had large impacts on profitability but essentially no impact on land use and ultimately management objectives. Contrast that transaction with the Weyerhaeuser sale of 270 thousand acres in middle Georgia where four different owners with vastly different management objectives and financing arrangements led to substantial changes in land use on those timberlands. We believe that each acquisition / divestiture must be scrutinized to assess its relative impact on land use change.

Concern from a variety of stakeholders has been expressed about the impact on landscape fragmentation and resulting wildlife habitat changes. Cleary, these trends in ownership will continue to fragment the forested landscape relative to previous ownership trends. These changes will be most apparent in areas close to Metropolitan Statistical Areas (MSAs) where the financial incentive to identify and monetize traditional timberland parcels is the greatest. Furthermore, it is these areas that will experience the greatest ecological change as land use changes spread across the forested landscape. The owners are ambivalent due to the opportunities that such continued fragmentation creates for increasing returns through the sale of real estate on the urban / rural fringe.

In closing, we expect these timberland ownership trends to continue. Within the next three years we expect that there will exist only one traditional forest products company that owns more than a million acres in the southern United States. Institutional investment in timberlands will continue to grow here in the United States and around the world with two to three billion dollars being invested each year during the last half of the 2000s. The largest challenge facing these investors is locating enough investment-grade timberland to meet the investors' demands. The other trend that will continue to impact timberland ownership is the continued growth of rural real estate markets at the urban / rural fringe. Continued emphasis will be placed on identifying those acres and monetizing the assets as they become more valuable for other uses.

Literature Cited

Ahn, S., A.J. Plantinga, and R.J. Alig. 2002. Determinants and projections of land use in the south central United States. Southern Journal of Applied Forestry 26(February 2002): 78-84.

Clutter, M.L. 2005 Transaction database.

Diamond, J., D.E. Chappelle and J.D. Edwards. 1999. Mergers and acquisitions in the forest products industry. *Forest Products Journal* 49(4):24-36.

Hardie, I.W. and P.J. Parks. 1997. Land use in a region with heterogeneous land quality: an application of an area base model. *American Journal of Agricultural Economics* 73(May 1997): 300-310.

Kline, J.D., B.J. Butler, and R.J. Alig. 2002. Tree planting in the south: what does the future hold? *Southern Journal of Applied Forestry* 26(February 2002): 99-107.

Nagubadi, R.V. and D. Zhang. 2004. Determinants of timberland use by ownership and forest type in Alabama and Georgia. Forthcoming in *Journal of Agricultural and Applied Economics*.

Wear, D.N. and D.H. Newman. 2004. The speculative shadow over timberland values in the U.S. South. *Journal of Forestry*. December 2004: 25-31.

Wear, D.N. and J.G. Greis. (eds.) 2002. *Southern Forest Resource Assessment*. Gen. Tech. Rep. SRS-53. Ashville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station, 2002.

Wilent, S. 2004. Investors increase timberland holdings. The Forestry Source 9(December 2004): 1-4.

Yin, R., J.P. Caulfield, M.E. Aronow and T.G. Harris, Jr. 1998. Industrial timberland: current situation, holding rationale, and future development. *Forest Products Journal* 48(10): 43-48.