

Disintegration of the U. S. Industrial Forest Estate: Dynamics, Trajectories, and Questions

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Abstract In the past decade ownership of the corporate forestry sector in the USA has undergone remarkable transformation. Corporate consolidation, separation of processing capacity ownership from timberland ownership, and disinvestment from timberland ownership altogether have occurred rapidly and on a global scale. Vertically-integrated forest products companies, once the standard model for publically-traded corporations, have all but disappeared. A new class of timberland investors now dominates the timberland estate. These new owners can be viewed as the most recent manifestation of capital from the core seeking rent in the distant periphery. While in this respect they resemble their industrial forestry predecessors, they differ markedly with regard to landholding objectives, time horizons, management capacities and other characteristics. This transformation has created new challenges and opportunities for other forest owners and for rural communities. Many timber processing mills have closed, restricting markets for smallholder wood. While much former industrial timberland remains in industrial-style timber management, some has been subdivided for ‘highest and best use,’ and conservation buyers have assumed control of a few large blocks. Further fragmentation of the industrial forest estate is anticipated, presenting both challenges and opportunities to small-scale forest owners and rural communities. This paper outlines the dynamics of forest ownership restructuring, posits alternative future scenarios for small-scale forestry, and points to potentially useful future research.

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Introduction

Ownership establishes the right to decide how a piece of land will be used and fixes responsibility for that use. The benefits arising from land ownership are closely related to the size and value of land holdings and to the type of ownership interest. Land not only produces income but serves as a store of wealth and power (Lewis 1980).

Over the past decade, the map of private timberland ownership in the USA has been redrawn; ownership boundaries have shifted, and entirely new forms of ownership have emerged. Driven by intense competition in global forest products and timber markets and a quest for tax-efficient ownership structures, vertically-integrated forest products companies have spun off their timberland holdings to timber investment management organizations (TIMOs), real estate investment trusts (REITs), individual private owners, and (to a lesser but important extent) land trusts and conservation groups.

Four factors compel this investigation of these dramatic changes. First, change in corporate timberland tenure in the past decade is unprecedented in modern US history. Not since the privatization of the public domain at the end of the 19th century has timberland so rapidly moved from one ownership type to another. Second, this transformation occurs at a time when many rural communities are already in precarious positions, having lost timber-related jobs, endured shrinking populations, and struggled to maintain critical social services. Many communities are striving to make the transformation from commodity-based economies to alternative economic structures (Stauber 2001). Third, these changes may open up opportunities for rural communities to engage in new ways with the forests that surround them; some high capacity communities with strong leadership and access to capital are developing innovative timberland ownership structures. Finally, this timberland tenure transition has occurred with such rapidity that it has yet to attract substantial scholarly attention.

Vertically-integrated companies divested timberland to pay down corporate debt, to improve corporate financial performance, and to restructure for tax benefits (Clutter et al. 2005). During the 10-year economic boom starting in the mid-1990s, capital markets were awash in funds and investors were looking for opportunities; timberland ownership emerged as an attractive option for portfolio diversification and institutional investors snapped up the timberlands from forest industry (Clutter et al. 2005). Institutional investors, including endowments, pension funds and wealthy individuals usually purchase timberland through TIMOs, which do not typically own land, but acquire, manage and sell land for investors. REITs, on the other hand, do own land. They are often former vertically integrated companies that have restructured for tax purposes, separating timberland from mill ownership.

Corporate disintegration has occurred in multiple and sometimes incremental stages. One early step was the practice, beginning in the 1980s, of hiring contract labour rather than in-company labour. Next was the separation of timberlands and mills on financial ledgers in the 1990s, a change that precipitated the current ownership separation. Also in the 1990s, forest industry consolidation led to debt accumulation across the industry (Roberts et al. 2004).

A brief review is provided of relevant literature on land tenure and resource dependency. The current state of ownership change as derived from the best available data is then documented. Three probable trajectories for the industrial forestry estate are then described and implications of each for small-scale forestry and rural communities are explored. Finally, questions for future research are suggested.

Literature Review

Land Tenure

The literature on land tenure is a rich source of insight into how changes in timberland ownership patterns might influence rural communities. Land and resource tenure has long been a foundation for scholarly research on rural development in developing countries (Bruce and Fortmann 1992). Tenure analysts and scholars have built compelling arguments for the centrality of tenure institutions to understanding social organization and relations (e.g., Geisler 1993; Bliss et al. 1998a; Singer 2000; Ribot and Peluso 2003), described the complexity of land tenure arrangements in the USA (e.g., Geisler 2000; Stanfield et al. 2002), and challenged prevailing, simplistic assumptions about rights and responsibilities in the US tenure system (Bromley 1998; Yandel 2000). In the words of environmental law scholar Eric Freyfogle, 'Property law today vests landowners with considerable power, particularly in the case of vital resources such as water and land for housing. To own such resources is to wield power over other people whose lives and activities depend upon them' (Freyfogle 2003, p. 106).

Changing timberland tenure patterns have received considerable attention in recent years, with forest policy analysts focusing on parcelization and concomitant forest fragmentation and loss of working forests (e.g., Egan and Luloff 2000; Sampson and DeCoster 2000; Butler et al. 2004; Franklin and Johnson 2004). Institutional investment in timberland has received attention from forest economists (Binkley et al. 1996; Clutter et al. 2005), conservationists (Block and Sample 2001), and in the popular press (Braxton-Little 2005), but significant scholarly attention has yet to be paid to social consequences of the emergence of institutional ownership of industrial timberland.

Natural Resource Dependency

Relationships between communities and forests have drawn the attention of social scientists for more than half a century (e.g., Kaufman and Kaufman 1946). A large literature on forest and other natural resource dependency informs the research

reported here (e.g., Bailey et al. 1996; Bliss and Bailey 2005; Bliss et al. 1998b; Joshi et al. 2000; Machlis and Force 1988; Schallau 1990; Freudenburg 1992; Freudenburg and Gramling 1994; RSS Task Force 1993). The central point of this literature is that rural communities dependent on forest resources are vulnerable to forces outside their control, including technological change, change in market demand, change in governmental policy, and change in ownership. The dramatic change in timberland ownership documented here is simply the most recent in a long series of challenges faced by timber dependent communities. That said, the changes documented, combined with the financial crisis currently unfolding, are likely to be especially profound.

Research Methods

A database was obtained reporting 428 timberland transactions over 4,047 ha (10,000 ac) in the USA from 1996 to 2007, compiled by market analysts at the Bank of America. Individual transactions were verified through: (1) securities and exchange commission filings for publicly-held companies; (2) phone calls to timberland owners and analysts; and (3) cross checks with periodicals, including RISI, Timber-mart South, and regional business journals. While timberland transactions between non-publicly traded companies are underrepresented in this database because they may not be announced in any periodical, the authors believe that the bulk of major transactions have been captured, and the database reflects a conservative estimate of the area that has transitioned from industrial private timberland to institutional investor, REIT and private individual ownership. In addition, the second author conducted more than 45 semi-structured interviews between 2007 and 2009 with community and industry leaders, TIMO and REIT executives, industry analysts, consultants and others with experience in the industrial forestry sector. Most of these interviews were conducted in person in the field, and lasted 1–2 h. Field notes were taken and later coded and analyzed following the method described by Strauss (1987).

The Changing Industrial Forest Estate

The timber industry in the USA has a long history of undergoing changes in its structure and operations in response to economic opportunities. At various times in the past it has shifted geographic focus to exploit areas with the most accessible timber (Williams 1989), engaged in large-scale land speculation (Robbins 1985), divested cutover land following timber liquidation (Williams 1989), acquired large tracts of timberland through means both legitimate and fraudulent (Ficken 1987; Gates 1968; Puter and Stevens 1908), suppressed federal timber sales in order to increase prices for privately owned timber (Clary 1986), and applied pressure to open up federal forestland for harvest once private supplies were depleted (Hirt 1994). All of these trends carried implications for both the management of the land and the well-being of surrounding communities. The process referred to here as

‘disintegration’ is far from the first example of the timber industry restructuring itself in the pursuit of profits, yet it is a notable contemporary change, and one worthy of close inspection.

In 1992, prior to the bulk of recent ownership changes, there were an estimated 28.5 M ha of industrial timberland in the USA (Powell et al. 1993). In 1994 all of the 10 largest private US timberland owners were industrial owners; by 2006, eight of the 10 were TIMOs or REITs (Table 1). One of the remaining largest industrial owners in 2006, Temple-Inland, sold its holdings in 2007 to The Campbell Group, a TIMO.

Figure 1 shows the total timberland sales in the database, including hectareage sold from industry, timberland investors (including TIMOs, REITs and private individuals), and conservation and government sellers, at almost 24 M ha (60 M ac). The area is cumulative in order to represent the total number of sales over the years. However, some of the same hectares have sold multiple times. The sales are further broken down by the two largest groups of timberland sellers, industry and timberland investors (TIMOs, REITs and private sellers). Figure 1 shows that forest industry has been the largest timberland seller by far, with almost 76% of total sales. The majority of the remaining area, about 23%, was sold by timberland investors. Other sellers, including conservation sellers, made up the small remainder.

Figure 2 shows the total timberland sales in the database, also with cumulative area sold per year. The purchases are broken down by the two largest purchaser groups—timberland investors and industry buyers. Approximately 77% of total purchases were by timberland investors, and 18% were by industry.

The overall story of these two graphs is that the bulk of timberland sales tracked, almost 24 M ha, are transferring from industrial ownership to timberland investor ownership. The remainder of this article explores some of the implications of this ownership change, derived primarily from interview data.

Table 1 The 10 largest private timberland owners or managers, USA, 1994 and 2006

	1994 Owners	Type	Area (1,000 ha)	2006 Owners	Type	Area (1,000 ha)
1	Georgia-Pacific	IPF	2,428	Plum Creek	REIT	3,402
2	International Paper	IPF	2,388	Weyerhaeuser	IPF	2,752
3	Weyerhaeuser	IPF	2,266	Hancock Timber Resources	TIMO	1,342
4	Champion International	IPF	1,818	Forest Investment Associates	TIMO	1,108
5	Bowater	IPF	1,497	Wagner Forest	TIMO	1,011
6	Boise Cascade	IPF	1,097	Resource Management Service	TIMO	1,003
7	Plum Creek Timber Co.	IPF	809	Forestland Group	TIMO	859
8	Temple-Inland	IPF	769	Forest Capital	TIMO	850
9	Scott Paper	IPF	676	Temple-Inland	IPF	834
10	Louisiana-Pacific	IPF	651	Rayonier	REIT	824

Sources: Yin et al. (1998), Clutter (2007)

IPF industrial private forest, REIT real estate investment trust, TIMO timber investment management organization. (Notes: TIMOs do not typically own land; they manage land for investors)

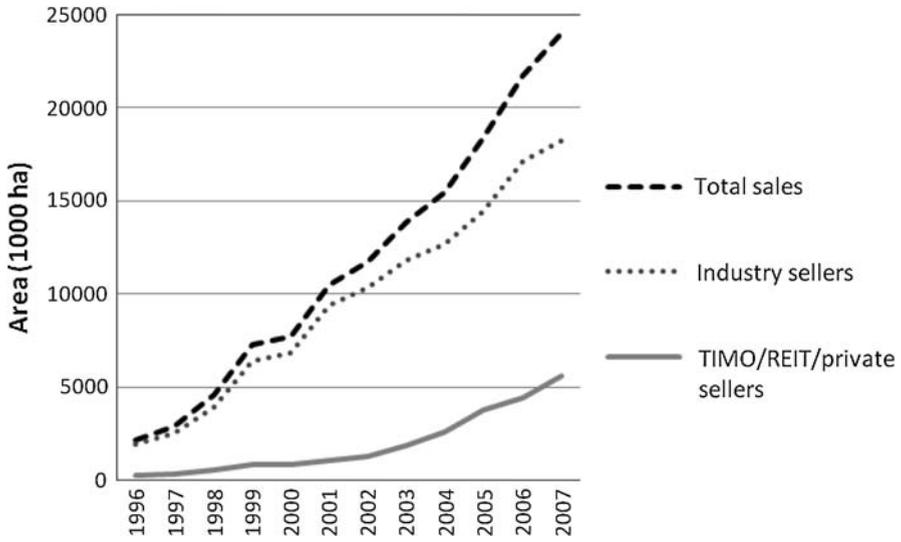


Fig. 1 Cumulative timberland sales greater than 4,047 ha (10,000 ac), by all categories (*dashed line*), industry (*dotted line*), and TIMOs and REITs (*solid line*), USA, 1996–2007. *Source:* Unpublished data, Bank of America (2008)

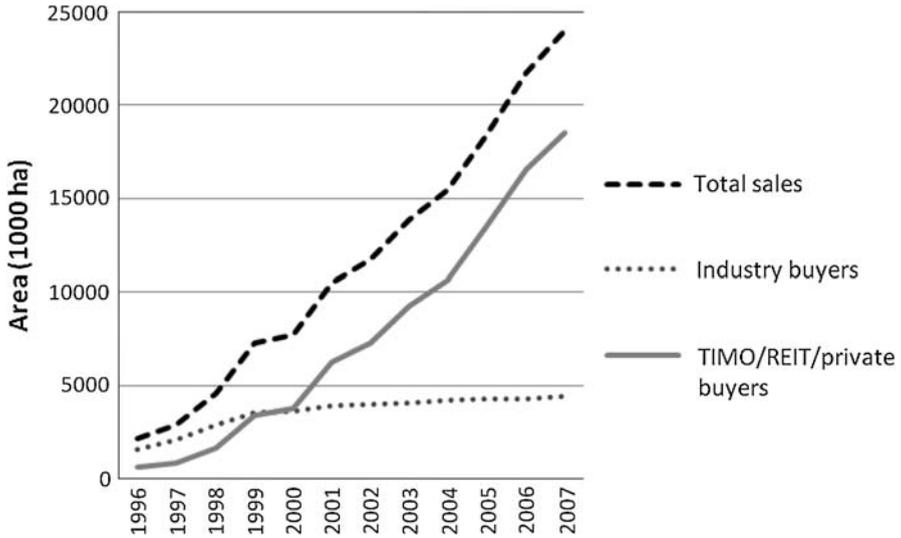


Fig. 2 Cumulative timberland purchases greater than 4,047 ha (10,000 ac), by all categories (*dashed line*), industry (*dotted line*), TIMOs and REITs (*solid line*), USA, 1996–2007. *Source:* Unpublished data, Bank of America (2008)

Three Divergent Paths for The Industrial Forestry Estate

At the present there are many more questions than answers regarding the future disposition of the industrial forestry estate. Even with the imperfect, tentative available data on timberland ownership reported here, rapid change continues unabated. As of this writing a number of industry analysts have surmised that the last publicly-traded industrial forest company in the USA (Weyerhaeuser) is in the process of restructuring as a REIT (Edwards 2008). Any predictions about future ownership patterns and their implications for small-scale forestry and rural communities are necessarily highly speculative, but three trajectories appear to be common: intensive timber production forestry, 'highest and best use' parcelization and conversion, and conservation forestry.

Intensive Timber Production Forestry

In the first alternative, highly productive timberlands that have been purchased by timberland investors have been kept in forest production under intensive management. Industry participants and observers consistently said that for all corporate ownership types, management practices are tending toward shorter timber rotations, fewer non-commercial treatments (e.g., pre-commercial thinning), and less investment in management infrastructure (e.g., road and culvert maintenance). All of these imply a shortened time horizon, borne out by the tendency within the current timberland market to 'churn' hectares, or sell them again and again. As with most ownership transfers, some observers have noted a dramatic increase in harvesting activity on this land as the new owners seek to reduce acquisition debt.

Investment forestry differs from industrial forestry in several key ways, including the reason for owning timberland; supplying a mill is no longer a primary concern of the forest owner. Thus mill viability continues to be a concern for rural communities that are still reeling from the mergers, takeovers and acquisitions of the past decade. For small-scale forest owners, local mill viability is vital because they are less able than their corporate competitors to access distant markets.

The separation of the timberland owner from the mill also leads to a separation from the community in which the mill is located. Community leaders as well as mill and forest managers generally confirmed the impression that the new timberland owners are less engaged with the communities in their wood-producing regions. Complex ownership arrangements and frequent turnover have increased the degrees of separation between rural people and the corporate landowners that control much of the landscape. Moreover, the staffing levels of these new owners are thinner than those of their industrial forestry predecessors. Generally, fewer field forestry professionals are employed relative to hectares owned, reducing the level of attention that company land receives. Fewer forestry professionals are available to interact with neighbouring forest owners, participate in forestry associations, or contribute to local stewardship initiatives such as watershed councils. In short, accompanying the reduction in field staffing is a reduction in human and social capital—those stocks of education, expertise and social networks—available to rural communities. All of these factors lead to the conclusion that new timberland

investment owners may be less likely to be involved in local community affairs, or make investments in community capacity.

‘Highest and Best Use’ Parcelization and Conversion

In the second alternative, properties designated ‘highest and best use’ have been slated for sale, usually for development as recreational or residential real estate. Both the remaining vertically-integrated companies and the new timberland investors are selling land designated as more valuable for non-timber production uses. Researchers with the USDA forest service have raised alarms that urban sprawl represents a threat to the US South’s forest resource base (Prestemon and Abt 2002). In rapidly growing parts of the West, private wilderness retreats in Montana and Idaho (Johnson 2007) are prominent examples of this path. There, Plum Creek, Potlatch other REITs and TIMOs, and even some closely-held, private, vertically-integrated companies, have aggressively marketed amenity-rich properties, moving them out of the ‘working’ forest landscape (Miller 2007).

The long-term impact of such parcelization and conversion varies with location, development density, and state and local zoning laws, but there is reason to be concerned about the negative ecological impacts of parcelization and development (Maestas et al. 2003; Huston 2005; Radeloff et al. 2005). Land parcelization can lead to forest fragmentation, thereby influencing wildlife habitat and migration patterns (Hansen et al. 2005). Federal forest managers are greatly concerned about the increasing risks of wildfire ignition and the added complications and costs of fire suppression. Fragmentation of the working forest can directly affect timber management and harvest viability, because new residents may not be comfortable with intensive forest management next door to their newly-acquired wilderness estates. This puts downward pressure on log supply, thereby affecting mill viability.

The relationship between land use change and environmental quality is complex; in some cases a shift from productive to recreational or lifestyle uses can result in improvements in environmental quality (Haskell et al. 2006; Walker et al. 2003). ‘Equity migrants’—that is, individuals who purchase properties in rural communities using profits from sales of urban real estate—are not a new phenomenon, but their numbers and influence are growing. They bring to rural America expectations, demands and political views that conflict with those of longtime rural residents (Egan and Luloff 2005). These owners are often well-educated, successful professionals with rich lifetime experiences. They can be seen as sources of human and financial capital potentially available for community development.

An alternative way of framing the land parcelization and forest fragmentation phenomenon is that it represents a democratization of the landscape. In this view, as the former industrial forestry estate is broken up into smaller ownerships, new opportunities may be created for a more diversified ownership pattern. Theoretically, small-scale owners including families, local entrepreneurs and community organizations could benefit as land long controlled by a handful of extra-local corporations is transferred to the hands of a larger number of individual landowners and community institutions. In western USA, much of the present-day corporate timberland estate has a basis in grants of public domain land to railroad companies

(Robbins 1994) or in fraudulent homestead claims by ‘dummy’ entrymen (Hine and Faragher 2000). In essence, these represent former pieces of the public domain that never functioned to fulfill the Jeffersonian vision of a broad distribution of land to independent families. The current round of corporate land divestment could be interpreted as a long-delayed fulfillment of this democratic vision.

The economic imperative underlying the transition to ‘highest and best use’ divestment of timberland is based in a transformation of rural places, particularly in the developed world, from sites of commodity production to arenas of symbolic and material consumption (Smith and Phillips 2001; Travis 2007; McCarthy 2008). Tracts of timberland identified for sale as real estate are those for which market values far outstrip their productive potential, usually because of their scenic or recreational attributes or proximity to exurban population centers. To the extent that ‘highest and best use’ conversion of forestlands is geared toward vacation homes, private hunting resorts and wooded rural estates for the wealthy, the end result may represent a trend of rural gentrification (Phillips 1993; Darling 2005) rather than democratization. The greater potential for democratization may come in the form of community forests and other new commons-type arrangements.

Conservation Tenures

The third trajectory encompasses land with exceptional ecological value or community attachment, and for which conservation buyers can be found. These may be thought of as ‘highest and best use’ sales in which land trusts, conservation organizations, local communities and other conservation-oriented entities are the buyers. Alternatively, TIMOs and other investors may retain ownership but place hectares within conservation easements that are purchased by land trusts such as The Nature Conservancy and Trust for Public Land. In 2006, The Nature Conservancy conducted possibly the largest private land conservation purchase in US history, involving about 283,000 ha (700,000 ac) of former International Paper and Plum Creek Timber Company land in 10 southern states, Maine, and Wisconsin (Woodard 2006). The database for this study includes about 930,000 ha (2.5 M ac) sold from 1996 to 2007 from various owners to conservation ownerships, including TIMOs that place all land under conservation easements. About 60% of these sales have been in the US northeast, almost 30% in the southeast, and the remainder in north central and western USA.

Some TIMOs have pursued forest certification of their management practices, and courted conservation easements on some properties. Potential income streams, including carbon and ecosystem markets and the production of cellulosic biofuels, have been topics of interest at timberland investor conferences, indicating that management may shift to accommodate these new markets. In an example from Oregon, Fidelity national Financial, a financial services company, is in negotiations with the Deschutes Land Trust on a project that would carve a community forest from land formerly owned by Crown Pacific, a forest products company (Deschutes Land Trust 2008). After protracted negotiations and legislative efforts, Fidelity is in the position to create a new residential community on land formerly designated forest only. In exchange, Fidelity would sell the remaining area (about 26,000 ha) to

the Deschutes Land Trust. The ‘Skyline Forest’ is envisioned as a working forest in which ecological restoration, recreational access, and protection of the viewshed for the city of Bend are primary goals. This arrangement could provide a model of balanced development and conservation with relevance elsewhere in the West, though it also illustrates that contested, high-value land in amenity-rich areas may become community forest or conservation forest, while other timberland quietly changes hands and management.

The emergence of conservation ownership types presents a mixture of challenges and opportunities. Some of the land available to conservation purchasers is in need of substantial investment in restoration. The proposed Skyline Forest, for example, was heavily harvested as its former owners sought to avoid bankruptcy. Elevated protection and investment in restoration may indeed be warranted for such lands. It remains to be seen where funding for costly restoration activities will be found. To the extent that conservation ownerships remove timber from local markets, they may be seen as potentially having negative impacts on adjacent communities. On the other hand, the breaking up of the industrial forestry estate has created many opportunities for communities to purchase and manage their own community forests.

Questions for Future Research

Given the rapid disintegration of the industrial forest estate in the US, there will obviously be impacts of this phenomenon on owners of small-scale forestry. The research reported here has led to many more questions than answers, and hopefully others will be motivated to explore this area further. A set of researchable questions of significance to small-scale forestry has been identified, and are organized below according to the three trajectories identified earlier in the paper.

Intensive Timber Production Forestry

Anecdotal evidence concerning the new investor owners’ management practices and future intentions has been presented above, but these claims need more thorough study. How are timber management practices changing with changes in ownership? How do these changes affect forest conditions? How will new harvest rotations and species mixes affect regional milling capacity? What will be the effect of these changes on local markets for wood from small forest ownerships? More fundamentally, will investor-owned land stay in timber production, or be sold into more profitable uses? Will this land continue to supply wood to local mills, or will the owners find other markets for the wood they produce? If today’s investors do move out of timberland ownership, what new owners might emerge? With what consequences?

‘Highest and Best Use’ Parcelization and Conversion

The parcelization and sale for ‘highest and best use’ of the industrial timber estate can be seen to affect smallholder forestry through changes in land owners,

management activities and community dynamics. Research is needed to identify the important parameters of this change (e.g., extent and patterns of development and residence, landowner demographics, expectations and motivations) and their implications for small-scale forestry. It was posited above that the buyers of former industrial land may hold the potential to contribute to the local community (through the importation of human capital). Might they also contribute to solving pressing ecological needs (through privately-funded or 'sweat equity' restoration)? In what ways might new ownership patterns alter social and ecological dynamics that make small-scale forestry more challenging? What needs might arise in terms of outreach, education and estate planning? How do patterns of rural gentrification, where they occur, affect neighbouring forest owners? More research is needed to understand how these complex dynamics play out in individual landscapes.

Conservation Tenures

As large tracts of timberland come on the market, opportunities arise for land trusts, local and state governments, tribes and private owners to acquire land for conservation purposes. Coalitions of TIMOs, land trusts and government agencies have formed to prevent the loss of working forestland and to preserve open space and public access. An untested hypothesis is that these coalitions emerge where the required community capacity is high. This raises questions about the geographic unevenness of conservation ownerships. What is their geographic distribution? What are the relationships between community capacity, conservation priority, and large tracts of available forestland? What is the appropriate role for government vis-à-vis development of the conservation estate? With regard to the forest sector, how does establishment of conservation tenures affect the local forest sector economy and infrastructure? To what extent do such tenures represent a net withdrawal of forestland from timber production? What are the impacts of conservation tenures on local economies? In particular, how are small-scale ownerships affected? What role do conservation tenures play in rural development? What conflicts exist between divergent interest groups regarding use of this land?

Conclusion

The global financial crisis that came to a head in 2008 has dramatically altered the timberland investment landscape. The timber industry has suffered as housing starts have stagnated, the real estate market has soured, and many timberland investors have experienced financial difficulties. Timberland transactions have slowed considerably, but hectares have continued to change hands; at least one prominent TIMO put up 700,000 ha for sale in 2008, though it pulled the offer off the market in early 2009 (Mendell and Hamsley 2009). Thus, the US timberland investment scene continues to be extremely dynamic. The financial crisis illustrates the degree to which national economies, financial institutions and their investment decisions are inter-twined in a complex global system. Understanding the dynamics of timberland ownership in any country now requires attention to global patterns of

investment, ownership and control. Although this paper has confined attention to ownership change within the USA, the reorganization of timberland ownership is clearly a global phenomenon with global impacts. The questions raised in this paper will hopefully inspire other researchers around the world to critically examine how continuing changes in landownership patterns affect prospects for rural communities and small-scale forest owners.

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