



America's Family Forest Owners

■ **Brett J. Butler and Earl C. Leatherberry**

ABSTRACT

The number of family forest owners in the conterminous United States increased from 9.3 million in 1993 to 10.3 million in 2003, and these owners now control 42% of the nation's forestland. The reasons why people own forestland are diverse. Some of the more common ones are aesthetic enjoyment, the tract is part of a farm or home site, and to pass the land on to heirs. Half of the family forest owners have harvested trees, but only 3% of them have a written forest-management plan. Trends in owners' ages and future land-use intentions suggest widescale transfers of family forestland in the near future.

Keywords: Nonindustrial private forests; small-scale forestry; landowner survey; forest inventory; National Woodland Owner Survey

There are an estimated 620 million acres of forestland in the conterminous United States (Smith et al. 2004). Nearly two-thirds, or 393 million acres, is in private ownership. Private owners include forest industry companies, other businesses or corporations, partnerships, tribes, families, and individuals. Family forests include lands that are at least 1 ac in size, 10% stocked, and owned by individuals, married couples, family estates and trusts, or other groups of individuals who are not incorporated or otherwise associated as a legal entity.

Family forest owners constitute the dominant ownership group in the United States, holding 4 of every 10 forested acres.

The pattern of forest-landownership in the United States (Figure 1) is rooted in Euro-American settlement patterns and resultant anthropogenic uses of the land (MacCleery 1993). In the East, where Euro-American settlement occurred earliest, 83% of the forestland is in private ownership. In the West, the reverse is true, with two-thirds of the forestland publicly owned. There, prior to settlement, the

federal government owned all land and maintained control of land that was not homesteaded or sold. Much of the latter was too remote or mountainous. Many public forests in the East were acquired following abandonment or tax foreclosures on large tracts of land from the late 1800s through the 1930s.

Family forests provide important environmental, social, and economic benefits. An owner's relationship with her land has important implications for forest sustainability, including the sustainable production of timber and the continued flow of services, such as groundwater recharge, from this valuable resource.

To better understand the factors that affect the use and management of private forestland, private forest owners have been surveyed periodically. National surveys were completed in 1978 (Birch et al. 1982) and 1993 (Birch 1996). In 2002, the USDA Forest Service initiated a new system of annual

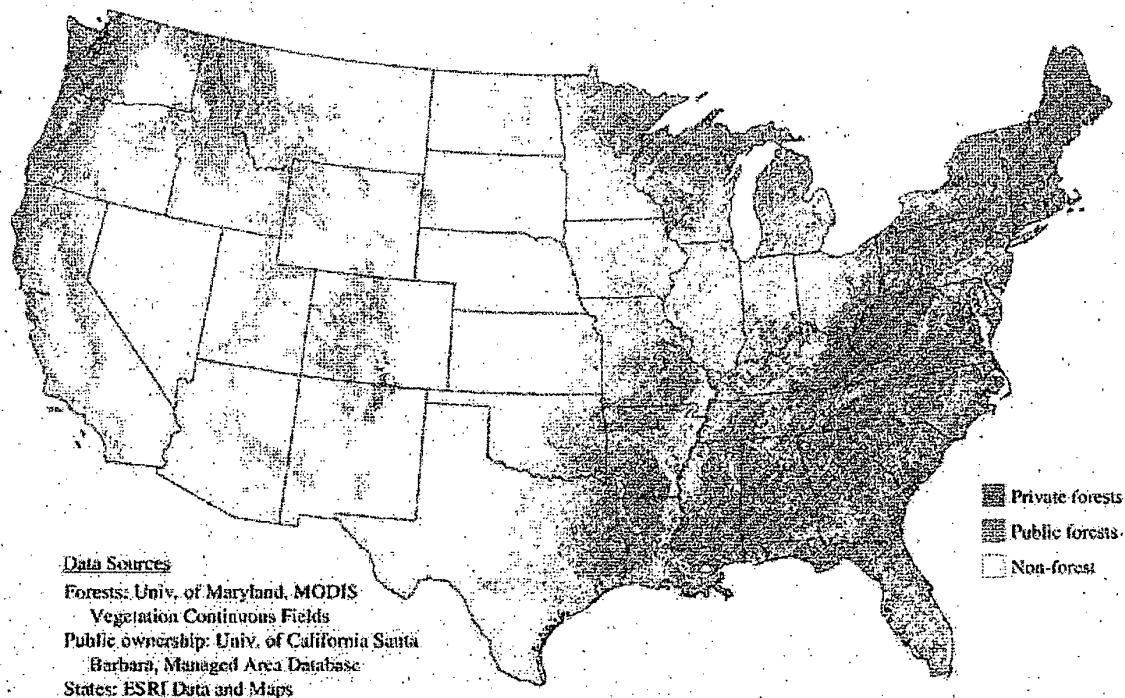


Figure 1. Public and private forest ownership in the United States, 2003.

surveys of the nation's private forest owners. In this article, we present selected findings from the first 2 years—2002 and 2003—of the National Woodland Owner Survey (NWOS).

Methods

The NWOS is carried out as part of the USDA Forest Service's mandate to conduct "a comprehensive inventory and analysis of the present and prospective conditions" of the nation's forests (Forest and Rangeland Renewable Resources Planning Act of 1974, P.L. 93-378). The NWOS is administered by the Forest Inventory and Analysis (FIA) program and represents the social complement to the program's biologic resource inventory.

The objectives of the NWOS are to characterize the private forest landowners of the United States and determine why they own land and what they intend to do with it. Basic demographic information is compiled along with data on forestland characteristics, own-

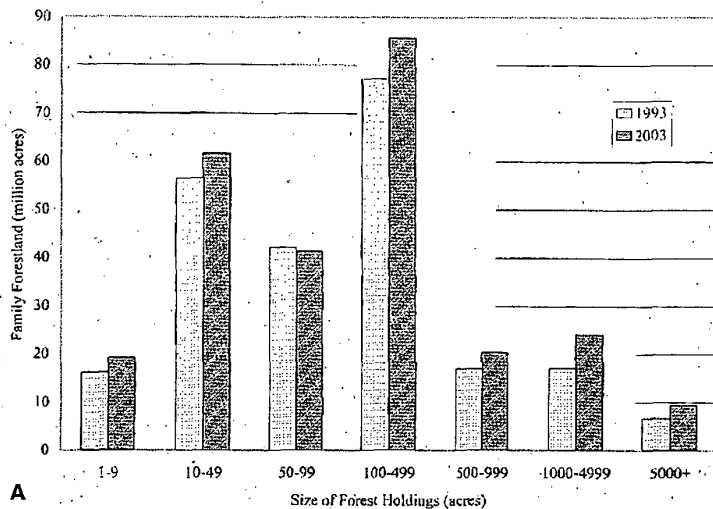
ership objectives, forest use and management, forestry education and outreach, landowners' concerns, and future land-use intentions.

Following survey methods outlined by Dillman (2001), questionnaires were mailed to a random sample of the nation's private forest landowners (B.J. Butler and E.C. Leatherbery, National Woodland Owner Survey manual, in preparation). Attempts were made to contact nonrespondents by means of follow-up telephone interviews. As part of the sampling design, a systematic set of points was placed over the United States. Each point was identified as forested or nonforested through interpretation of remotely sensed imagery and/or ground reconnaissance. For each point that was forested, the owner was identified through public records.

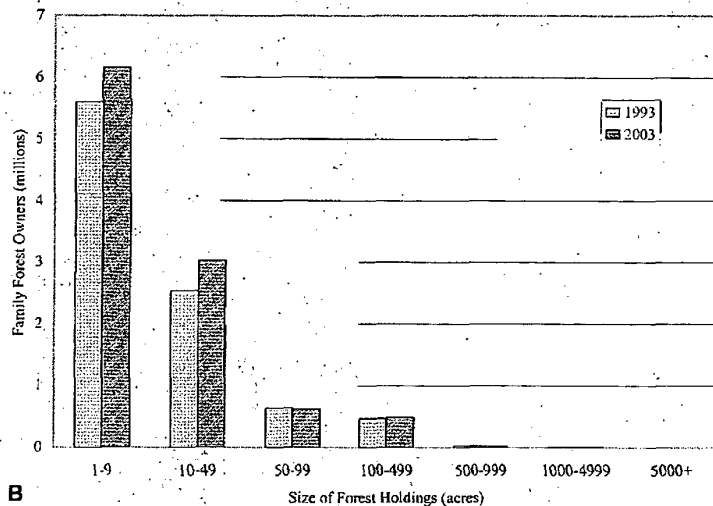
Currently, the NWOS is being implemented annually. Survey cycles for states range from 5 to 10 years. The annual design means that each year, a

randomly selected portion (10–20%) of the full sample of private owners in a state is contacted. Although the sample size during the first several years may not provide adequate precision for estimating state-level parameters, the systematic sampling design allows for reliable national and regional estimates. As additional annual surveys are completed, the precision of the estimates will increase and detailed results will be published.

A total of 17,363 private landowners were mailed surveys as part of the NWOS in 2002 and 2003. Between 27 and 1,412 owners were contacted in each of the 47 conterminous states sampled. The number of owners contacted varied according to the area of private forestland, number of private forest landowners, and sampling intensity in a state. The relatively small amount of private forestland in Nevada hindered us in contacting landowners there, but we assumed that the State's landowners' characteristics were similar



A



B

Figure 2. Distribution of (A) family forests and (B) family forest owners in the United States by size of forest holdings, 1993 and 2003.

to those of landowners from neighboring intermountain states. Although future results will encompass all 50 states, data for Alaska and Hawaii are not included here.

In all, 6,352 family forest owners returned completed surveys. After adjusting for undeliverable questionnaires, the national response rate was 46%. Response rates generally were highest in the western and northern states and lowest in the southern states.

Because the primary sampling units are points on the ground, the probability of a given landowner being in-

cluded in the sample is inversely proportional to the amount of forestland that she owns. As the size of an owner's forest holdings approach the inverse of the state's sampling intensity (e.g., 15,000 ac), the probability of being included in the sample approaches 1. The Horvitz-Thompson Estimator (Horvitz and Thompson 1952) accounts for the probability proportional to size aspect of the sampling design and is used to estimate numbers of owners. For area estimates, simple random sample estimation procedures (e.g., Cochran 1977) are used.

Family Forest Owners of the Northern United States, 2003

Number of owners:
4.8 million

Area of forestland owned:
34.3 million ac
(55% of the region's forestland)

Size distribution of landholdings:

Size (ac)	Acres (thousands)	Owners (thousands)
1-9	29,267	2,026
10-49	28,094	1,265
50-99	18,699	1,260
100-499	29,008	180
500-999	6,596	16
1,000-4,999	2,722	2
5,000+	1,510	1

Average landowner age:
69 years

Education (at least some college):
26% of the family forest owners who own 59% of the family forestland

Absentee owners:
28% of the family forest owners who own 32% of the family forestland

Most common reasons for owning:

1. Enjoyment of beauty and scenery
2. Privacy
3. Protection of nature and biological diversity

Harvesting experience (past 5 years):
27% of the family forest owners who own 39% of the family forestland

Written management plans:
4% of the family forest owners who own 15% of the family forestland

Have sought management advice (past 5 years):
13% of the family forest owners who own 31% of the family forestland

The information presented here reflects family and individual forest owners for the 48 conterminous states. The NWOS covers all private landowners, but results pertaining to corporations, partnerships, tribes, and other nonfamily organizations are excluded so that

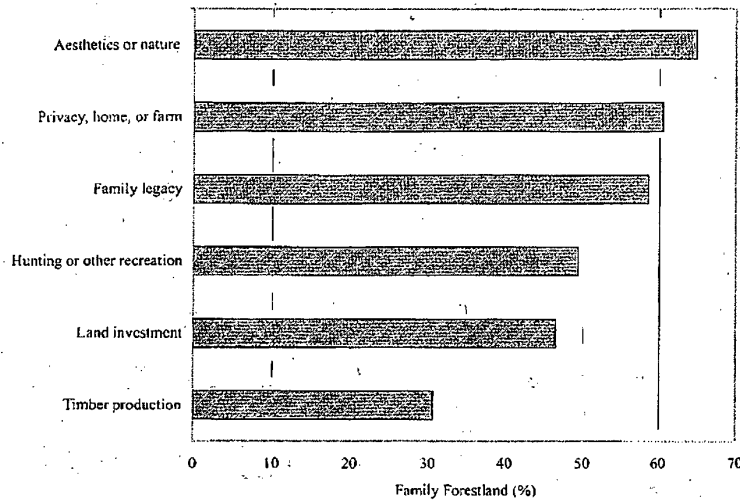


Figure 3. Reasons for owning family forestland in the United States, 2003. Numbers include land-owners who ranked each potential reason as very important (1) or important (2) on a seven-point Likert Scale. Categories are not exclusive.

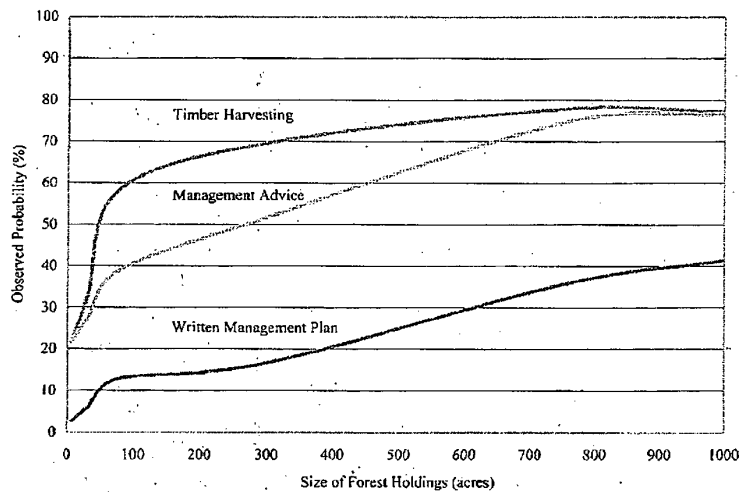


Figure 4. Relationship between forest-management activities and size of family forest owners' landholdings.

the trends in family forests can be highlighted.

Family Forest Owners

How Many Family Forest Owners Are There? There are an estimated 10.3 million family forest owners in the United States. Collectively, they control 262 million acres, or 42% of the nation's forestland. Nearly 9 of 10 family forest owners have their land in the eastern United States. The North accounts for 46% of family forest owners and the South 42%. The remaining

12%, or 1.3 million owners, are dispersed across the West.

Who Are Family Forest Owners? From a demographic perspective, family forest owners are somewhat different than the average American. For example, family forest owners have more formal education: 62% have attended college compared to only half of the general population 25 years or older (US Department of Commerce, Census Bureau 2002). Family forest owners also tend to be older than the general population. The average age of Ameri-

Family Forest Owners of the Southern United States, 2003



Number of owners:
4.3 million

Area of forest land owned:
127.6 million ac.
(59% of the forestland)

Size distribution of landholdings:

Size (ac)	Acres (thousands)	Owners (thousands)
1-9	7,265	2,424
10-49	26,890	1,338
50-99	18,996	288
100-499	43,993	243
500-999	11,132	18
1,000-4,999	13,749	8
5,000+	5,543	<1

Average landowner age:
60 years

Education (at least some college):
65% of the family forest owners who own 70% of the family forestland

Absentee owners:
30% of the family forest owners who own 43% of the family forestland

Most common reasons for owning:
1. Pass land on to heirs
2. Enjoyment of beauty and scenery
3. Land investment

Harvesting experience (past 5 years):
18% of the family forest owners who own 42% of the family forestland

Written management plans:
3% of the family forest owners who own 20% of the family forestland

Have sought management advice (past 5 years):
16% of the family forest owners who own 43% of the family forestland

cans 25 years or older is 49 years. By contrast, the average age of family forest owners is 60 years.

How Familiar Are Family Forest Owners With Their Land? Seven of 10 family forest owners maintain a primary residence within 1 mile of the forestland that they own. Resident forest owners are more prevalent in the North, where 77% of the owners have a primary residence near their forestland compared to 70% in the South and 68% in the West. Some family forest owners have a secondary home—vacation home or cabin—on their forestland. Nationally, 12% of the

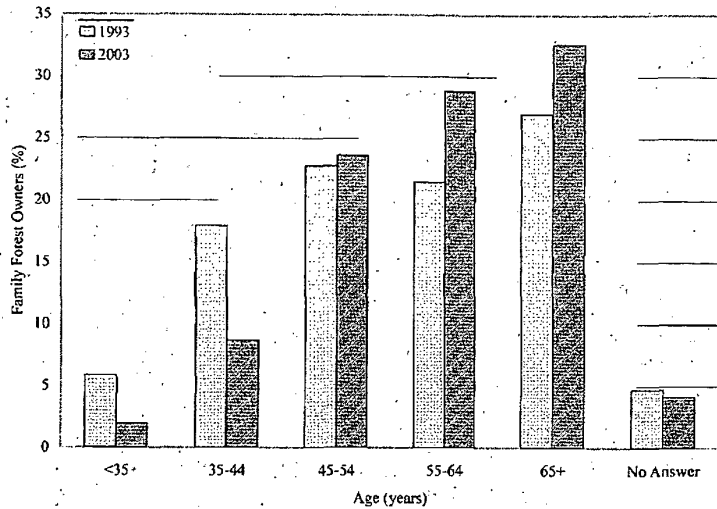


Figure 5. Age of family forest owners in the United States, 1993 and 2003.

owners have a secondary home located within 1 mile of their forestland. The proportion of owners with second homes is greater in the West and North (17 and 15%, respectively) than in the South (7%).

What Size Holdings Do They Have? Most family forest owners hold relatively small tracts (Figure 2): Nine of 10 owners control 1 to 49 ac. Although owners with smaller holdings predominate, those with larger holdings own most of the forestland. Owners with 50 or more acres hold 69% of the family forestland but account for only 11% of the family forest owners.

Holding sizes tend to be smaller in the North than in the South and West. In the North, 40% of family forests consist of fewer than 50 ac; in the South and West, only about one-fourth of family forests are held by owners with fewer than 50 ac.

Why Do They Own Forestland? Family forest owners hold their acreage for multiple reasons. Respondents were asked to rate the importance of a series of potential reasons for owning forestland on a seven-point Likert Scale. The most common reasons cited as very important (Likert value = 1) or important (value = 2) are to enjoy beauty/scenery, to protect nature and biological diversity, that the acreage is part of a farm or home site, for privacy, and to pass the land on to heirs (Figure 3).

There is regional variability in the reasons why people own forestland. Aesthetic enjoyment is cited more frequently in the North and West than in the South; land investment is more likely to be cited as important by owners in the West and South than in the North; and family legacy is ranked as important more often by owners in the South than the North or West.

How Important Is Timber Production? Nationally, relatively few owners—only 9%—indicate that timber production is an important reason for holding forestland; Family forestland in the South is more likely to be owned by people who cite timber production as an important reason for holding forestland than forestland in the other regions. Forty-one percent of the family forestland in the South is owned by people who indicate that timber production is an important reason for owning forestland, compared to 22 and 18% in the North and West, respectively.

How Likely Are Owners to Harvest Trees? Half of the family forest owners have harvested trees at some point during their ownership tenure. When those who harvested only firewood are excluded, 26% of the owners have harvested timber (e.g., sawlogs or pulpwood). Owners who have harvested trees control 71% of the family forestland and 46% of these owners have

Family Forest Owners of the Western United States, 2003



Number of owners:		
1.3 million		
Area of forestland owned:		
27.6 million ac		
(12% of the region's forestland)		
Size distribution of landholdings:		
Size (ac)	Acres (thousands)	Owners (thousands)
0-9	2,714	809
10-49	6,639	325
50-99	3,677	55
100-499	11,708	64
500-999	5,602	9
1,000-4,999	7,550	4
5,000+	2,329	3
Average landowner age:		
62 years		
Education (at least some college):		
76% of the family forest owners		
who own 72% of the family forestland		
Absentee owners:		
32% of the family forest owners		
who own 49% of the family forestland		
Most common reasons for owning:		
1: Enjoyment of beauty and scenery		
2: Pass land on to heirs		
3: Privacy		
Harvesting experience (past 5 years):		
9% of the family forest owners		
who own 34% of the family forestland		
Written management plans:		
5% of the family forest owners		
who own 12% of the family forestland		
Have sought management advice (past 5 years):		
27% of the family forest owners		
who own 33% of the family forestland		

harvested during the last 5 years. The more forestland owned, the more likely it is that the owner has harvested trees (Figure 4).

How Prevalent Is Forest Management? Only 3% of the owners have a written management plan while 16% have sought management advice. Among owners who have harvested trees, 22% sought professional advice during their most recent harvest. The more forestland owned, the more likely it is that an owner has a written forest management plan or has sought forest management advice (Figure 4).

Ownership Dynamics: 1993–2003

The number of family forest owners in the United States increased by 11% between 1993 and 2003. Most of this increase occurred among owners with less than 50 ac of forestland (Figure 2). These changes are happening concurrently with the large influx of people moving from urban to rural areas (Egan and Luloff 2000).

The average age of family forest owners is increasing. Between 1993 and 2003, the number of family forest owners 65 years of age or older increased by 34% (Figure 5). Owners 65 years or older control 44% of the family forestland; 20% is owned by people 75 years or older. The advancing age of these owners portends a large increase in the transfer of forestland in the near future. This supposition is bolstered by the large number of owners who cite family legacy as an important reason for holding forestland.

The reasons for owning forestland have not changed appreciably over the past decade. That the land is part of a home or farm remains important to many owners. However, the relative importance associated with some reasons for ownership has changed. For example, owning land to pass along to heirs, for aesthetic enjoyment, and for land investment have increased in relative importance, while owning for timber production has decreased.

Various dynamic, interrelated forces are affecting family forest owners, how they use and view owning their land, and their view of the future. These forces are social (e.g., demographics and social paradigms), economic (e.g., timber and real estate markets), political (e.g., tax policies and the availability of incentive programs), and biophysical (e.g., the state of the forest and land resources) in nature. In the next 5 years, most landowners plan to do little with their acreage, though a significant number are planning major changes or activities. The most common planned activities are some type of harvesting—for firewood, sawlogs, or both. Within the next 5 years, 10% of the owners plan to pass at least some of their land on to their heirs, 8% intend to buy more forestland, and 5% plan to sell forestland.

Conclusions

New and increasing numbers of family forest owners will present a challenge and an opportunity for the forestry community, but will the forestry community be ready? With more people owning forestland, there will be more people in intimate contact with the land. This affords an opportunity to educate more people about the benefits and responsibilities associated with forest stewardship. However, for effective communication to occur, innovative and sophisticated methods of communicating with forest landowners are needed. New owners likely will have different backgrounds and ownership objectives and be less aware of the potential benefits of good forest management than previous owners. Also, new owners probably will have fewer management options due to smaller holding sizes and, at least currently, weak markets for timber.

Findings from the NWOS indicate that because of the advanced age of many owners and their stated intentions for their land, land transfers will be substantial during the next 10–20 years. The transfer of lands to the next generation could result in minimal or dramatic changes depending on the personal goals of the new owners. Will aesthetic enjoyment as a reason for owning forestland continue to increase and will ownership for timber production continue to decrease?

The fate of much of the nation's forests is in the hands of the 10.3 million families and individuals who control 42% of the forestland. Family forest owners play an important role in supplying the public with timber, outdoor recreation opportunities, and watershed protection. We need to continue to refine our understanding of family forest owners so that we can develop more enlightened opinions and effective policies.

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Responses to "America's Family Forest Owners"

Non-Governmental Organizations: More Owners and Smaller Parcels Pose Major Stewardship Challenges

Constance Best

The results of the new, improved National Woodland Owner Survey (NWOS) shed important light on the changing face and landscape of family forests. A comparison of 2003 and 1993 data reveal some key trends:

- A lot more private forestland is owned by families, with 24 million ac shifting from business or other nonfamily ownerships.
- There are more than 1 million new family forestland owners in the decade.
- There are more owners of small parcels (10–49 ac) and less owners of the next size class (50–99).
- Owners are expecting to subdivide some 5.4 million ac in the next few years, of which 60% is in the South.
- Owners are planning to convert some 9.5 million ac out of forestland altogether. Even allowing for other acres being planted into forest, this portends a net forest loss to development of 1.8 million ac. Almost half of that net loss looks like it will happen in the West.
- Family forest owners as a group are growing significantly older. In fact, more than 100 million ac of forestland are owned by people 65 years and older. No wonder the question of family legacy is a top area of concern.

These findings are consistent with past surveys by the USDA Forest Service and with other available data that I reviewed and analyzed in preparation of *America's Private Forests: Status and Stewardship* (Island Press 2001). There are major structural shifts in forest ownership underway that will shape the forest landscape for generations to come. On the one hand, the economic appeal of development opportunities combined with a massive intergenerational transfer of forest assets appear to be fragmenting and shrinking the size of forest holdings, as well as fueling outright forest loss. On the other hand, the major restructuring of the publicly traded forest products industry over the last decade also appears to have led to a notable shift of forest ownership away from corporate entities in favor of a family ownerships.

What does this changing world of family forest ownership mean for non-governmental conservation organizations (NGOs) such as the Pacific Forest Trust? Together with many others focused on forest conservation and stewardship, we are concerned about the long-term and indeed accelerating trends of forest loss and parcelization. We see the looming intergenerational transfer of 41% of family forestland as a driver to more of the same. Many family forest tracts get broken up when aging owners have too many heirs, or heirs who can't agree on how or if to manage the forest, or no heirs at all. Furthermore, if no other assets are available to pay estate taxes, some larger holdings must be sold to satisfy the IRS.

More owners and more parcels undermine efforts to protect and manage privately owned forest resources for their many public benefits, from timber supplies to water flows to wildlife habitat. Efforts to coordinate management across ownership boundaries for watershed or landscape-scale stewardship benefits are made even more difficult when there are more owners. In general, owners of larger tracts are more active forest managers than owners of smaller parcels, whether the goal is timber production or natural protection. Larger forest tracts also tend to be less fragmented by non-forest development and can therefore be better managed for forest habitat and watershed values. Therefore, maintaining forest ownerships in larger tracts can improve efficiency and effectiveness of conservation and stewardship efforts.

Based on the NWOS data, I would suggest goals for conservation-oriented NGOs and other forestry service providers be different for different size family forest ownerships. With small-scale properties, the challenge is to get owners thoughtfully engaged in understanding their forests as natural systems. We need to reach out to them in a language they can hear, one that is based on assisting the owners in meeting the goals they have for their forest. These may not encompass logging per se but could encompass forest management for habitat values. Gradually, engagement can evolve into active stewardship.

For larger-scale ownerships, the challenge is to keep the forest tract intact and functional as forest. The fate of large-scale ownerships is much more economically driven than smaller ones. Conservation organizations need to help support a viable, sustainable forest products infrastructure as an element of a conservation strategy for larger, inherently more commercial forestry holdings. Furthermore, with a highly competitive global fiber market that has been yielding weak wood prices, conservationists also need to work with larger family forest ownerships to build returns from non-wood commodity sources, whether it is recreation, habitat banking, or carbon sequestration. For families of larger properties who are committed to maintaining forest uses, the sale or gifting of conservation easements is another method that keeps family forests from being broken up, provides financial returns, and meets multiple resource management goals.

In fact, the new NWOS data show 12.3 million ac of family forestland is already under conservation easement. This is a much greater figure than other less statistically rigorous surveys have suggested. Surprisingly, 45% of this total is in the South. Anecdotal data of transactions reported to me by conservation organizations show a strong increase in the use of conservation easements on working forestlands,

regardless of ownership. With almost 5% of family forests already conserved in this fashion, the trends suggest to me that this tool could become even more widely used.

In revealing important facts about family forest ownership, the current NWOS also shows us just how little we really know about the people whose decisions shape 42% of America's forests. We hope that with some basic knowledge now being gleaned regularly, the NWOS and other efforts will seek deeper levels of understanding. We are still very far away from identifying who owns forests in the United States and understanding why they own land and what they intend to do with it. For instance, it is likely that the vast majority

of family forest owners don't even think of themselves as forest owners, as this aspect of their ownership tends to be incidental to other uses. The more we can understand about family forest owners, the more NGOs and others can provide truly meaningful assistance in conservation and stewardship of forest resources.

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Public Forest Policies and the Family Forest

Michael A. Kilgore

The management of the nation's family forests has an extensive and rich history of influence by public policies and programs. The public's interest in private forestry is grounded in two fundamental concerns. One is the need to encourage continued investment in land management for a wide range of benefits provided by private forests. The long-term nature of forestry and lack of markets for many of its products tend to discourage landowners from investing in their forests. Public policies are also used to minimize negative impacts that can be associated with forest management and timber-harvesting activities, such as the loss of wildlife habitat, diminished water quality, soil erosion, and reduced visual quality.

The policies and programs that collectively constitute the nation's "family forest policy" were established in response to specific forest management problems, and within the context of unique economic or political circumstances. Their form varies considerably, as does their ability to influence private landowner decisionmaking. They include:

- developing and delivering to landowners information and education programs on proper stand establishment, management, and timber-harvesting techniques;
- assisting owners who wish to apply certain land management practices by providing technical assistance and advice;
- identifying appropriate forest management and timber-harvesting techniques such as best management practices (BMP) or guidelines;
- providing financial incentives in the form of cost sharing, no or low interest grants or loans, and income and property tax incentives to encourage the application of certain forest management practices or production of forest-based outputs;
- purchasing specific rights (typically development) from willing forest landowners; and

- regulating and zoning the extent and types of practices and activities allowed on forestland.

Some of these policies can be found across multiple levels of government (e.g., taxation), while others are the exclusive domain of certain levels of government (e.g., state governments typically have jurisdiction over the regulation of forestry practices on nonfederal lands).

The latest data from the National Woodland Owner Survey (NWOS) highlight important conditions of and trends in the nation's family forests, as well as the attitudes and perceptions of their owners. They include a continued low level of interest in planning and management of these forests, declining interest in timber production as an ownership objective, parcelization of forest landownership, and owner age and future land-use intention trends that suggest the possibility of large-scale transfers of family forestland in the near future.

These findings have a number of significant implications for the management of private forests. If forest policies are going to be effective at addressing these conditions and trends, attention needs to be given to a number of important factors, including:

- *Target the most important problems.* The issues surrounding the management and use of family forests are extensive. Public policy should focus strategically on those issues that pose the greatest threat to the future condition of these resources.
- *Target problems with the greatest opportunity for influence.* Public policy has varying influence on the management of private forestlands. As such, focus should be on those problems where the potential to positively influence outcomes is the greatest.
- *Recognize diverse ownership and management objectives.* The 2003 NWOS indicates individuals own forests for many reasons in addition to producing timber. Family forest pol-

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icy needs to acknowledge the fact that timber production is not a high priority for most landowners and may simply be incidental to other land management objectives (e.g., improving wildlife habitat).

- *Be realistic about the ability of specific policy tools to influence behavior.* Public policies can be effective tools for achieving specific outcomes society desires of its private forests, such as stimulating greater levels of investment in forest management or applying environmentally sound timber-harvesting practices. The ability of public policies to influence other public objectives for the nation's private forests, such as mitigating forest fragmentation and development, is more limited.
- *Make incentives worth the landowner's while.* Forest policies need to acknowledge the opportunity costs of private forest landowner decisions. It is unrealistic to expect, for example, that programs offering landowners a few dollars per acre in property tax relief will be able to compete with real estate markets that price forestland at several times its undeveloped value.
- *Require landowner commitment in return for benefits provided by public policies.* A recent study (Hibbard et al. 2003) found that only 16 of 66 forest property tax programs require the landowner to obtain and use a forest management plan in return for preferential property tax treatment. Landowner commitments need to be commensurate with the private benefits these policies provide.
- *Be creative in policy design.* The attitudes, preferences, and behavior of private forest landowners continue to evolve. Too often, family forest policy lacks the creativity and in-

genuity needed to effectively respond to these changes. In Minnesota, for example, a new forest property tax law uses annual rebate checks as a means of encouraging landowner participation. Although the law has been in place only a few years, initial landowner response suggests the rebate concept may be a powerful incentive for forest landowners.

- *Monitor policy outcomes and effectiveness.* Once in place, policies need to be periodically evaluated with respect to the degree to which it is accomplishing its intended objectives, who benefits (and to what degree), and who pays (and to what degree). Such monitoring can help decision-makers better understand the right mix of policies and programs directed at the nation's family forests.

The attitudes and actions of the private forest landowners will continue to be shaped by economic and noneconomic forces. By giving attention to these conditions and the aforementioned factors, public policies and programs can positively influence the management of the nation's family forests for a range of economic, ecological, and social benefits.

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Implications for Forest Production

R. Neil Sampson

The continued division of America's private forests into smaller ownerships has important implications for the future of forest production. Impacts on the future supply of timber products, the costs of buying and harvesting timber, and land values seem likely and, to the extent that these changes drive up domestic timber prices in relation to foreign opportunities, they may accelerate the offshore movement of the forest products industry. Adverse impacts on the ability to achieve sustainable forestry goals may reduce public support for active forest management.

Supply of Timber

Smaller ownerships make timber purchasing more difficult, as smaller owners are generally less interested in producing timber as a crop and a neighborhood of small plots makes it more likely that there will be opposition to the impacts of a timber-harvesting operation (Sampson and DeCoster 2000). Mills that rely on private purchases for a significant part of their wood needs may find their operations

increasingly difficult as local forests are split into smaller ownerships.

Costs and Prices

The average per-acre cost of preparing a timber sale, harvesting, and regeneration goes up as the size of the sale goes down, particularly as it drops below 50 ac (Thorne and Sundquist 2001). With over 60 million forest acres in ownerships of 10-50 ac (Butler and Leatherberry 2004, Figure 2), it is obvious that many timber harvests will encounter that higher cost structure. At the same time, for similar reasons, the price paid to landowners for stumpage tends to go down as harvest plots get smaller. The effect is reduced incentive to manage smaller ownerships for timber production.

Land Prices

As the demand for rural land builds, it becomes harder to justify holding large acreages for timber production. Land sales, particularly those that subdivide the property to obtain

the higher per-acre return from smaller parcels, and those that separate out land of higher value (such as anything adjacent to water), become economically attractive to large landowners. Large-lot zoning, which in many areas requires rural lots of 20–40 ac to qualify for home building, coupled with the price premium for smaller parcels, means that many large areas are being carved up into 40-ac ownerships that are largely desired as rural homesites. Much of the recent divestiture of forestland by the large forest industry corporations has been accompanied by careful attention to land merchandising for highest value. The result is an increasing amount of rural land that is too expensive to maintain as commercial forestland in the face of market opportunities.

Forest Sustainability

It is an ironic fact that, as the attention of foresters and the general public turns toward the goals of sustainable forestry, which often rely on large-area (landscape) considerations and long-term planning, the modern state of American forests increasingly involves smaller parcels and rapid ownership turnover. As ownerships drop below 50 ac, the tendency of owners to seek professional management advice or prepare management plans goes down rapidly (Butler and Leatherberry 2004, Figure 4). These factors make it more challenging to achieve sustainability, both for the landowners and industrial corporations. Under the Sustainable Forestry Initiative (SFI) program, for example, timber purchasers are challenged to promote the concepts of sustainability to all landowners from whom they buy timber. While there is no evidence that small landowners are any more resistant to sustainable practices than large ones, there will be more of them with which to deal in the future, and that has implica-

tions both for cost and the probability of success. Because it is generally conceded that the public support of forest management is increasingly based on the demonstrated ability of forestry to maintain sustainable forests, anything that reduces the probability of success is a concern that foresters must consider.

Opportunities and Challenges

The near future may continue to see stress in the forest products industry, largely based on increasing globalization coupled with increased forest fragmentation, parcelization, and land costs in the United States. Over the long-term, however, small forests are going to grow and change into older and larger age classes, and future owners are going to be faced with the challenge of making management decisions in the face of those situations. If good management can be encouraged today, those future forests could be reservoirs of high-quality, high-value timber products for a society in which those commodities are increasingly scarce and valuable.

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Family Forests—The Bigger Picture

Keville Larson

“America's family forest owners” is a warm and fuzzy phrase. This new category is for the first time being separated, surveyed, and reported through the National Woodland Owner Survey (NWOS); however, it may not be a particularly helpful category. The over 10 million owners are too diverse and averages are misleading for most forestry applications. Over 6 million have 1–9 ac. Combining these smallest tracts with much larger properties can give a deceptive picture. There is more consistency based on size of holding than on category. Large ownerships, whether classified as family or business, are run as a business. A 10-ac owner's level of forestry activity does not compare with that of a 1,000-ac owner. Yet a 1,000-ac owner has motivation, concerns, and activity in common with a 100,000-ac owner. Instead of separating the 42% of US forestland in family forests, it would appear more logical and useful to combine and study the family and business owners with more than 100 ac,

which totals 44% of US forestland. This category, which could be called large private forestland, is much more important to the forestry community than the 37% public or 19% small (less than 100 ac) private forestland. Government and private organization policy aimed at encouraging protection, care, and production for forestlands should target this group of owners. On the other hand, political power comes from numbers of people and over 10 million family forest owners carries much more weight than 615,000 large private owners.

Nevertheless, the NWOS is a valuable resource providing data about the private owners who have helped create our healthy, diverse, and productive forests. It is most valuable as a plain database, which anyone is free to analyze, interpret, or use for their own purposes. In my opinion, it should be presented without USDA Forest Service observations, conclusions, or editorial comment. This should be left to the dif-

Responses to "America's Family Forest Owners"

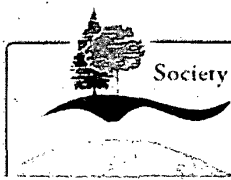
fering interests of others. My opinion is there is good news in the NWOS:

- The number of landowners is increasing. It would be an unhealthy trend if the number was decreasing and forestland ownership was being concentrated in fewer and fewer hands. Property ownership is the basis of our free enterprise economy and possession of a lot, a home, a building, or land is the American dream. The majority of investors say they favor real estate over other investments.
- It is also good news that the owners of 60% of the nation's forestland are so diverse it is unlikely they can all be enticed to act the same way at the same time. Economic disruptions and unhealthy conditions can occur when one policy is applied to a large percentage of forestland, e.g., USDA Forest Service, or everyone reacts similarly and simultaneously, e.g., programmed trading. Private ownership has created such an abundance of productive forestland that we can afford to forego or significantly limit the production of forest products from the 319 million ac of public ownership.
- The increasing average age is a good sign. It reflects the fact people are physically and financially strong. Forest landowners are living longer and are economically able to maintain their property ownership.
- Concentrating on the number of owners instead of acres can produce misleading impressions. This survey cites 3% of family forest owners have a written management plan.

There is little, if any, need for a written plan on the nearly 10 million owners with less than 100 ac. Previous studies suggest that for private forestlands greater than 100 ac (family and business) about 50% are covered by written management plans.

Constant change in land use and land ownership is what keeps our resources and economy dynamic and able to adapt to new social, environmental, or economic conditions. Free markets and the private enterprise system will find the balances society wants. It is only prudent to collect data and study trends. Any person or group may then use the information to design programs or establish policy to influence or deliver their message to the owners they feel are important. However, care must be taken to avoid focusing on the details. Currently, two major trends assure continuing change. One is the break-up of large industrial holdings into both small parcels to be used for other than forestry production and large tracts to be managed for primarily timber. The other is increasing purchase and use of smaller forestland properties for rural homes, recreation, and hobby forests and farms. Future NWOS reports can help track and report such changes.

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Publication of images or essays will depend on available journal space. As an editorial feature, narratives will be evaluated by the editor or an associate editor (or sent for additional expert consultation). English units are preferred. Journal style (including literature citations) is based on The Chicago Manual of Style, 14th or 15th Ed. (University of Chicago Press) and Scientific Style and Formats: The CBE Manual for Authors, Editors, and Publishers (Cambridge University Press). Submit your "Picture the Past" material(s) online at <http://www.rapidreview.com/SAF/author.html>.

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Research Articles—Maximum length is 4,500 words (excluding tables, figures, and literature cited), plus a 150-word abstract and 200-word "Management and Policy Implications" sidebar. Literature citations should in most cases number 20 or fewer. Journal style (including literature citations) is based on The Chicago Manual of Style, 14th or 15th Ed. (University of Chicago Press) and Scientific Style and Formats: The CBE Manual for Authors, Editors, and Publishers (Cambridge University Press). English units are preferred. Manuscript guidelines are presented below. Submit your manuscript online at <http://www.rapidreview.com/SAF/author.html>. Because the review process is double-blind, please ensure that authors are not identified anywhere in the manuscript (including running heads and feet).

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As a membership benefit of the Society of American Foresters, the *Journal of Forestry* represents the forestry profession in the United States. Although it is not international in scope, the Journal will consider publishing articles on forests, forest management, and forest policy from other parts of the world under certain circumstances. Contributions on forestry tools, technologies, and applications based on international forests and forestry should express their relevance to forest management in North America. Note that papers on international forests and forestry do NOT have to focus on North American species. However, manuscripts on North American species found elsewhere will be of particular interest to the readership, as will forest threats (e.g., insect pests, invasive plants, new diseases) or management practices relevant to North American forests, or socioeconomic issues and other human dimensions that could influence the practice of forestry in North America.

International forests and forestry submissions to the Journal must be complete and appropriately documented, preferably with readily accessible English language sources (when possible). All information must be presented in an accessible, cohesive fashion that provides a logical and orderly narrative. Authors are also reminded to write for a general audience (non-specialists) and to avoid excessive use of terminology not applied in North America. Contributions that lack North American relevance, are overly technical, narrowly focused, include too much jargon, or have only limited forestry application are probably more appropriate for other journals and will likely be rejected without further review.

Authors are strongly encouraged to help the readership understand international forests and the management and policy issues that affect them through a clear articulation of the concepts, including brief yet detailed descriptions of the trees, forests, geography, and history of the issues, when relevant. For example, international authors should not assume that the readers will be familiar with the geography of the region, and should consider providing a map with key landmarks, especially those referenced in the manuscript. In addition, full-color images showing examples of the trees, forests, forest threats, or other environmental conditions being described in the manuscript would be very beneficial.

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Style and Form

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The use of forestry terms should be consistent with The Dictionary of Forestry produced by the Society of American Foresters (www.dictionaryofforestry.org; Helms 1998). Country- or region-specific technical terms or jargon not found in The Dictionary of Forestry should be clearly defined in the text, a footnote, or a brief glossary accompanying the article. American versions of English words (including spellings) should be used—for example, use "center" not "centre" or "tons" not "tonnes" or "truck" not "lorry". In addition, English units of measurement are strongly preferred. If metric units are used, they must be included parenthetically after the English units [e.g., "After treatment, the pines averaged 100 ft (30.5 m) tall and 20 in. (50 cm) in dbh."]. Be consistent in unit usage throughout the manuscript.

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STYLE AND FORM

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Common names are used for most plants and animals. Scientific names are included in parentheses following the first use of the common name. The Checklist of United States Trees (Native and Naturalized) by E.L. Little Jr. (Agriculture Handbook 541, USDA 1979) and the appendixes of Forest Cover Types of the United States and Canada (SAF 1980) are useful references for plant names. Technical usage in forestry and allied fields follows The Dictionary of Forestry (SAF 1998).

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Article in Journal

Jurgensen, M.F., J. Johnson, M.A. Wise, C.S. Williams, and R. Wilson. 1997. Impacts of timber harvesting on soil organic matter, nitrogen, productivity, and health of Inland Northwest forests. *For. Sci.* 43(2):234-251.

Proceedings

Blake, J.I., G.L. Somers, and G.A. Ruark. 1990. Perspectives on process modeling of forest growth responses to environmental stress. P. 9-20 in *Proc. of conf. on Process modeling of forest growth responses to environmental stress*, Dixon, R.K. (ed.). Timber Press, Portland, OR.

Technical Report

Mason, R.R., and H.G. Paul. 1994. *Monitoring larval populations of the Douglas-fir tussock moth and western spruce budworm on permanent plots: Sampling methods and statistical properties of data*. USDA For. Serv. Gen. Tech. Rep. PNW-GTR-333. 22 p.

Thesis/Dissertation

Korol, R.L. 1985. *The soil and water regime of uneven-age interior Douglas-fir (Pseudotsuga menziesii var. glauca)*. M.Sc. thesis, Univ. of British Columbia, Vancouver, B.C., Canada. 164 p.

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