

Literature Review

An Annotated Bibliography on Family Forest Owners

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An Annotated Bibliography of the Literature on Family Forest Owners

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Introduction

Ten million families own 276 million acres of forest in the United States. This number is on the increase, as each year more and more forestland is divided into smaller parcels. Though family forest owners collectively represent a significant player in the forestry sector, a relatively small proportion of them engage systematic management practices designed to ensure sustainability.

The Sustaining Family Forests Initiative is a collaboration of government, industry, NGOs, certification systems, landowners, and academics organized to gain comprehensive knowledge about family forest owners in the United States—credible, useful information for those who wish to create a climate in which forest owners can easily find the information and services they desire to help them conserve and manage their land.

The following review was prepared with the aim of presenting salient works from both the published and gray literature on family forests. An important point to make at the outset is that most of the existing research does not deal explicitly with family forests; rather, such ownerships are addressed under the broader heading of nonindustrial private forests (NIPFs). Though it is recognized that the Sustaining Family Forests Initiative is focused on family forests exclusively, the literature on NIPF constitutes the most useful starting point.

The literature on non-industrial private forest owners is structured around four broad themes: (1) Who are NIPF / family forest owners? (2) What are their motivations for owning forest and how are they currently managing their land? (3) What kinds of extension work is being done to help them? and (4) What needs to be done to improve extension and management practices? This review focuses on the first two, presenting an array of the literature on the demographics, attitudes, and motivations of family forest owners in the U.S.

A few general points can be made from this review:

- There is tremendous interest in this population. We found 33 papers and six Forest Service Technical Reports published in the last three years, nearly doubling the size of this bibliography from when it was originally compiled in 2003.
- Almost all the studies of forest owners are done at the scale of a state or smaller. It is not clear if the results of these regional-scale studies can be used to make inferences about the national population of family forest owners.
- The number of family forest owners is increasing annually, with greater parcelization of forestlands throughout the US (though there is variance with regard to growth of different parcel sizes regionally)
- The average age of family forest owners is increasing, indicating significant transfer of forestland in the near future
- The values, motivations and objectives for owning forest vary widely, reflecting the huge diversity of family forest owners
- Generally, however, it appears that family forest owners in much of the country share a greater affinity with the general public than they do with professional foresters in terms of their views on environmental issues and their knowledge of forests and forestry

- Most family forest owners rank things like aesthetics, recreation, wildlife viewing, and part of residence as the most important reasons for owning forestland; timber production is usually a low priority, although many owners surveyed in the various studies reviewed have harvested timber
- Most family forest owners do not have written management plans
- Most have not sought professional advice from a forester or utilized public assistance programs for forest management—owners of larger tracts of land are more likely to seek assistance
- The importance of commercial timber production is positively correlated with acreage of holding, as it is with the likelihood that the owner has used professional forestry advice and/or public assistance programs
- There is a need to mix qualitative and quantitative methods in carrying out research on family forests, especially for those undertakings that aim to analyze the values and motivations such owners
- Many of the papers reviewed make statements about demographic or motivations of forest owners that are not backed up by data
- State and regional studies are not comparable due to differing questions and methods
- There are apparently substantial regional (state to state; within states; within the US) differences with respect to the propensity to use forestry services, attitudes towards regulation, and reasons for owning forestland

The following review is annotated selectively, for two reasons. First, while all the papers listed below deal in some way with family forest owner demographics and motivations, some are more focused on these issues than others – some only provide such information for contextual purposes, focusing on other findings on related topics about NIPFs. Second, many works present broadly similar findings; thus, a single review is presented for the most useful articles.

Finally, an appendix of Forest Service technical documents is provided at the end of this review. These reports were not reviewed in full – many being rather dated and site specific – but they are listed here for further reference.

The Literature

Arano, K. G., I.A. Munn, J.E. Gunter, S.H. Bullard, and M.L. Doolittle. 2004. Comparison between regenerators and non-regenerators in Mississippi: A discriminant analysis. *Southern Journal of Applied Forestry* 28(4): 189-195.

Arano et al. examined landowner reforestation behavior relative to ownership size, socio-demographic characteristics, awareness of governmental financial incentive programs, and participation in educational programs. A telephone survey of 829 NIPF owners in Mississippi who recently harvested timber and owned greater than 20 acres of uncultivated land was conducted by the Social Science Research Center at Mississippi State University. Results reported provide demographic information according to regeneration behavior. Economic investment, desire to keep land in timber production, and fulfilling their role as environmental stewards were cited by respondents as important reasons why they participate in reforestation activities. Landowners who reforested tended to be younger, white, more likely to live in the city, and have higher levels of income and educational attainment. The belief that the land would naturally regenerate, the high cost of reforestation, and lack of information were the main reasons why non-regenerators behaved as they did. While this study provides information for a specific subset of NIPF, it provides important demographic information related to reforestation behavior and insight into the reasons why these landowners avoid/participate in reforestation activities.

Arano, K.G., and I.A. Munn. 2004. Non-industrial private forest landowners' forest management activities and expenditures in Mississippi, 1998-2000 data. *Forest and Wildlife Research Center Research Bulletin FO 249*: 13 pp.

The Social Science Research Center at Mississippi State University conducted a three-year mail-in survey of NIPF owners' annual forest management activities and expenditures from 1998-2000. A 35% return rate resulted in 1605 usable surveys from those who owned more than 20 acres of uncultivated land. As the authors point out, the distribution of respondents differed significantly from the state population; the 20-49 acre size class was underrepresented and the 100-500-acre size class was overrepresented.

According to the authors this did not bias survey results, because regression analysis shows that expenditures did not vary by ownership size. Pine plantations were the largest forest type owned by these landowners. Approximately 16% of respondents conducted some type of silvicultural activity on a total of about 9% of the land area. Mechanical and chemical site preparation and planting were the most common silvicultural treatments. A total of 637 acres was harvested annually. Un-even aged harvest constituted the smallest proportion (22%) compared to final, clear-cut, and intermediate. Silvicultural expenses and forestry consultant fees represented investment in forestland for timber production and constituted 43% of total average annual expenditures. While there is limited information on NIPF owner demographics, annual expenditures reflect landowner behavior, ranking of forestry activities, and level of investment.

Baughman, M.J., J.C. Cervantes and D.M. Rathke. 1998. Reaching Minnesota's Nonindustrial Private Forest Owners. Paper presented at the conference *Improving Forest Productivity for Timber: A Key to Sustainability*. 1-3 December 1998, Duluth, MN.

This paper presents the findings of a survey of 1000 NIPFs (average holding 106 acres) in Minnesota. The authors state the top reasons such owners cited for owning forest were wildlife habitat, recreation, hunting, and because the forest is "part of the farm." Timber

management for sale was the lowest priority reason cited, even though 38% had harvested timber for sale. The authors state that of those surveyed, 35% had consulted a professional forester at one time or another, but only 16% had a management plan. Incentives preferred by those surveyed were tax reductions, cost-sharing, and extension by resource professionals.

Belin, D.L., D.B. Kittredge, T.H. Stevens, D.C. Dennis, C.M. Schweik, and B.J. Morzuch. 2005. Assessing private forest owner attitudes toward ecosystem-based management. *Journal of Forestry* 103(1):28-35.

Belin et al. conducted a study of landowners in Massachusetts, New Hampshire and Vermont to ascertain any relationships between landowner characteristics and attitudes toward ecosystem-based forest management. Attitudes toward ecosystem-based management were measured using three indices: “within property sensitivity,” “landscape-scale perspective,” and “temporal vision.” Basic demographic information for 1,331 respondents was obtained (49.5% response rate). Consistent with other studies, privacy, part of residence, and conservation against development were cited as the top reasons for owning forestland. The majority of landowners surveyed favored an ecosystem-based approach at all three scales. There were no significant differences in attitudes toward this approach between states, yet attitudes differed according to population density, education-level and enrollment in current-use property tax programs. This analysis builds on an earlier study performed in western Massachusetts and indicates that, in general, landowners in this region are sympathetic to incorporating ecological values in forest management.

Best, C. and L.A. Wayburn. 2001. *America’s Private Forests: Status and Stewardship*. Island Press: Washington, D.C.

An introductory chapter entitled “Who owns the forest and why?” reports demographic data drawn from Birch (1996). The chapter also reviews much of the literature and provides a good overview of NIPF attitudes and management objectives.

Bieling, C. 2004. Non-industrial private-forest owners: possibilities for increasing adoption of close-to-nature forest management. *European Journal of Forest Research* 123:293–303.

Bieling analyzes how NIPF owners in the Black Forest region of Germany assess and implement “close to nature” forestry practices. Using the survey method, NIPF were segmented into three groups based on their interests in forests: economically interested, conceptually interested (more diverse interests likened to Boon’s (2005) hobby owner), and uninterested. Wood sale, personal wood supply, investment, and financial security through property were all significant factors differentiating the different ownership classes. Family tended to have a more powerful influence on forest management decisions than professional foresters, colleagues, friends or neighbors. The theoretical model used to group family forest owners by the degree that their forestry practices balance economics and conservation could easily be applied to the United States.

Birch, T.W. 1996. *Private Forest-land Owners of the United States, 1994*. USDA Forest Service Northeast Experiment Station Resource Bulletin NE-134. USDA Forest Service: Radnor, PA.

The Birch report is perhaps still the authoritative study on “who they are.” His numbers are reproduced throughout most of the studies reviewed here. Before presenting syntheses of regional numbers in tables (forming the bulk of the document), Birch draws some broad conclusions in the introduction of the report. The diversity of forestland owners is emphasized – their values and motivations for owning forest vary widely. However, generally, Birch states that most own forest because it is “part of the residence” or for “recreation and aesthetics.” Conversely, relatively few (in number) cite timber production as a main aim, though those that do account for a disproportionate percentage of NIPF lands. Birch also states that most smallholders do not have management plans.

Bliss, J.C. 2003. Sustaining family forests in rural landscapes: Rationale, challenges, and an illustration from Oregon, U.S.A. *Small-scale Forest Economics, Management, and Policy* 1(2): 1-8.

Bliss, J.C. and A.J. Martin. 2003. Nonindustrial Private Forests. In: *Introduction to Forest Ecosystem Science and Management* (3rd ed.). R. Young and R. Giese (eds.). Hoboken, NJ: John Wiley & Sons, Inc. p. 221-240.

Bliss, J.C. 2003. Sustaining Family Forests in Rural Landscapes: Rationale, Challenges, and an Illustration from Oregon, USA. *Small-scale Forest Economics, Management and Policy*, 2(1): 1-8.

Bliss, J.C., Sisock, M.L. and T.W. Birch. 1998. Ownership Matters: Forestland Concentration in Rural Alabama. *Society & Natural Resources*, 11: 401-410.

This paper focuses on the link between secure tenure and “well-being.” Concentrating on Alabama, where NIPFs make up 62% of forestland owners, the authors assert that increased security of tenure makes for more “well-being.” Aside from the important observation that Alabama is bucking the broader trend of parcelization, and that there is greater consolidation of lands under larger and larger landholders in the state, the paper presents little on the demographics of family forests and/or their motivations.

Bliss, J.C., S.K. Nepal, R.T. Brooks, Jr. and M.D. Larsen. 1997. In the Mainstream: Environmental Attitudes of Mid-south NIPF Owners. *Southern Journal of Applied Forestry* 21(1): 37-42.

Using data from their 1994 research (below), the authors again present their findings that NIPF owner attitudes on a range of forest-related topics – from government regulations on timber harvests to private property rights and economic development – do not differ substantially from those of the general public. Significantly, most NIPF owners feel that environmental protection measures are more important than private property rights, and that timber management should be heavily regulated.

-----, 1994. Forestry Community or Granfalloon? *Journal of Forestry* 92(9): 6-10.

The authors conducted a 50-question telephone survey of 987 households in the mid-South Tennessee Valley region, about 25% of which own forest (mostly <100 acres). The aim of the study was to gauge NIPF owners' view of forests and forestry versus the general public. The study concludes that NIPF owner opinions of forestry mirror that of the general public. In particular, many NIPF owners have a misperception of the environmental effects of timber harvesting, due in part to a lack of knowledge about forests and their management. Thus the idea of a "forestry community" with shared values and opinions on forests is a granfalloon, "a group of people erroneously believed to hold much in common."

Bliss, J.C. and A.J. Martin. 1989. Identifying NIPF Management Motivations with Qualitative Methods. *Forest Science* 35(2): 601-622.

Bliss and Martin present 16 case studies from Wisconsin profiling NIPF managers. Using unstructured interviewing, field observation, and management record review, the authors found that forest ownership affects identity, and that management practices are related to ethnic, familial and personal characteristics. A key point in the paper is that while survey methods can contribute to our broad quantitative knowledge of NIPF owners, qualitative research is better suited to exploring issues surrounding beliefs and behavior.

Bliss, J.C. and A.J. Martin. 1988. Identity and Private Forest Management. *Society & Natural Resources* 1: 365-376.

The authors state that NIPF owner motivations are poorly understood. Qualitative methods were used to study NIPF owners in Wisconsin who engage active forest management "in accordance with mainstream professional forestry standards." The authors conclude that there is a link between forest ownership and management and individual identity. As a relatively early scholarly study of its sort, the paper is useful as a thick description of a select set of NIPF owners, but it does not attempt to address such owners as a whole.

Boon, T.E., H. Meilby, and B.J. Thorsen. 2004. An empirically based typology of private forest owners in Denmark: Improving communication between authorities and owners. *Scandinavian Journal of Forest Research* 19(supplement 4): 45-55.

Much like the United States, Denmark has diverse segments of private forestland owners. Boon et al. surveyed a representative sample of private Danish family forest owners owning more than 7 acres to group them according to their ownership objectives. The segmentation analysis identified three main groups: classic owner, hobby owner and indifferent farmer. Each group valued their forest for different reasons, yet overall, aesthetic and recreational benefits were more important than economic and public recreational values. These findings parallel previous results of studies conducted in Finland, Sweden and Germany and can be used to understand how European family forest owners compare to their counterparts in the United States.

Bourke, L. and A.E. Luloff. 1994. Attitudes Toward the Management of Nonindustrial Private Forest Land. *Society & Natural Resources* 7: 445-457.

Bovee, J.K., and A.G. Holley. 2003. Planners vs. non-planners: Characteristics and differences between nonindustrial private forest landowners in southeastern Oklahoma who engage in planned and non-planned forest management. In G. S. Amacher and J. Sullivan, (eds). *Proceedings of the 2002 Southern Forest Economics Workshop*: 254-267.

Broderick, S.H., K.P. Hadden and B. Heninger. 1994. The Next Generation's Forest: Woodland Owners' Attitudes Toward Estate Planning and Land Preservation in Connecticut. *Northern Journal of Applied Forestry* 11(2): 47-52.

In Connecticut, NIPFs account for 88% of all woodland acreage, 42% of which is in parcels smaller than 50 acres; and 21% of which is smaller than 20 acres. As elsewhere in the north, the number of NIPF owners in Connecticut is increasing, while the size of holdings is decreasing. The authors took a random sample of 500 landowners from a roster of 8,606 people who own at least 25 acres of woodland. A mail survey was conducted, with 286 responding. The authors found NIPF owners in CT to be well-educated and older (average and median age was 61), as well as wealthier than the state average. The authors found that though income from wood products was the lowest priority, a full 89% had engaged some timber management. A majority cited the desire to maintain their forest "as is for future generations" as their most important reason for owning forest.

Brunson, M.W., D.T. Yarrow, S.D. Roberts, D.C. Guynn, Jr. and M.R. Kuhns. 1996. Nonindustrial Private Forest Owners and Ecosystem Management: Can they Work Together? *Journal of Forestry* 94(6): 14-21.

The authors surveyed NIPF owners in 11 states, assessing their views on ecosystem management. They note at the outset that ownership size and owner objectives vary widely across the US. In Indiana and the Southeast, for example, most owners held smaller parcels of land in comparison to those in the West. More owners in the Midwest and Southeast were actively managing for timber, while more in the West raised livestock on wooded lands. Despite such diversity, the survey found surprising similarities in owner views on ecosystem management. Broadly, most reacted positively to the concept, suggesting that concerns about property rights, while significant, are secondary to the need for good forest stewardship and the protection of environmental integrity at a landscape level.

Butler, B.J. 2005. The timber harvesting behavior of family forest owners. PhD dissertation. Oregon State University, Oregon State University.

Butler, B.J., E.C. Leatherberry, C. Best, M.A. Kilgore, R.N. Sampson, and K. Larson. 2004. America's family forest owners. *Journal of Forestry* 102(7): 4-14.

The authors present the results of the 2002 and 2003 National Woodland Owner Survey (NWOS). The report summarizes the characteristics of 6,352 U.S. private forest landowners (a 46% response rate), their reasons for owning land, and future land-use decisions. There are an estimated 10.3 million family forest owners in the U.S. owning 262 million acres. The most common reasons for owning land were enjoyment of beauty and scenery; privacy; protection of nature and biological diversity; or to pass it on to heirs. Only 9% of owners indicated that timber

production was an important reason for owning land. Only 3% of the owners had a written management plan while only 16% have ever sought management advice. This report provides the most recent and comprehensive summary of regional demographic information for family forest owners in the United States and their motivations for owning land.

Butler, B.J. and E.C. Leatherberry. Forthcoming. *USDA Forest Service 2002, 2003, 2004 National Woodland Owner Survey (DRAFT)*. <http://www.fs.fed.us/woodlandowners/>

The results of the 2002, 2003, and 2004 National Woodland Owner Survey is still only in draft form and not to be cited. Draft tables are available for review on the USDS Forest Service web site.

Carroll, M.S., P.J. Cohn, and K.A. Blatner. 2004. Private and tribal forest landowners and fire risk: a two-county case study in Washington State. *Canadian Journal of Forest Research* 34(10): 2148-2158.

Using a theoretical versus a statistical sampling methodology, Carroll et al. differentiated NIPF owners in two counties in northeastern Washington State into four distinct segments relative to the size of their land holdings and intensity with which they managed their land. The four groups were- large active landowners owning greater than 400 acres, medium-active (20-400 acres), farmers/ranchers, and lifestyle landowners (5-200 acres). These segments were determined based on qualitative data from interviews with 105 NIPF owners. While this study does not provide specific demographic data, it does provide information on the management emphasis, perceived threats, and use of fire as a tool in the management of their forestlands.

Cleaves, D.A. and M. Bennett. 1994. Holding Size and Behavior of Nonindustrial Private Landowners: A Cautious Second Look. In: Newman, D.H. and M.E. Aronow (eds.). *Forest Economics on the Edge: Proceedings of the 24th Annual Southern Forest Economics Workshop*, Athens, GA: University of Georgia Daniel B. Warnell School of Forest Resources: 196-209.

Conway, M.C., G.S. Amacher, J. Sullivan, and D. Wear. 2003. Decisions nonindustrial forest landowners make: an empirical examination. *Journal of Forest Economics* 9(3): 181-203. This study estimates a model to explain landowner behavior beyond the traditional activities of harvesting and reforestation to include bequest motives, debt and non-market activities. Conway et al. surveyed landowners of more than five acres of forested land within five counties of the northern piedmont region of central Virginia and had a 38% response rate resulting in 566 usable surveys. The study provides basic socio-demographic information on family forest owners in this region.

Creighton, J.H., and D.M. Baumgartner. 2005. Washington State's forest regulations: Family forest owners' understanding and opinions. *Western Journal of Applied Forestry* 20(3): 192-198.

In 2002, the Washington State University (WSU) Department of Natural Resource Sciences and Washington Department of Natural Resources Small Forest Landowner Office conducted a survey of family forest owners in Washington State to determine how landowner characteristics related to familiarity with state and federal forest regulations. A 48% return rate resulted in a sample size of 923 respondents. The article contains useful demographic data and characteristics

relating to the amount of land owned, employment status, absentee or resident status, income, etc. The findings regarding the level of agreement with statements related to the Endangered Species Act were interesting and can guide our understanding of respondent's views toward biodiversity conservation. But their responses might be regionally specific due to the close proximity if not direct connection of respondents to the spotted owl conflict.

Cubbage, .F.W., B.D. New and R.J. Moulton. 1996. Evaluations of Technical Assistance Programs for Nonindustrial Private Forest Landowners. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 367-376.

Demarsh, P., P. Sanders, and T. Beckley. 2004. Exploring the contribution of family forestry to the social health and sustainability of rural communities. Pages 21-26 *Proceedings of the Human Dimensions of Family, Farm, and Community Forestry International Symposium*. Washington State University.

Downing, A.K., and J.C. Finley. 2005. Private forest landowners: What they want in an educational program. *Journal of Extension* [On-line], 43(1) Article 1RIB4. Available at: <http://www.joe.org/joe/2005february/rb4.shtml>

Using a mail-in survey, the authors obtained basic socio-demographic data for 180 forest landowners from Central and Northeastern Pennsylvania and correlated these data with landowner's educational needs and preferences. The response rate was about 43% and the sample represents those most likely to be interested in natural resource issues, excluding "laggards," and emphasizes "early adopters." The demographic profile of survey respondents mirrored the typical forest landowner in Pennsylvania described by Birch and Dennis (1980) and the average NIPF owner in the United States described by Birch (1996)- 87% male, average age of 57, moderate to high levels of education and income. Some interesting findings include forest landowner preference for winter and spring for receiving educational information, and that importance of seasonality was significantly related to occupation; laborers and technicians placed more importance on time of year than professionals and retirees. Over 86% of respondents believe learning natural resource specific information was important, which was correlated with educational level. Educational level and gender were important variables in determining interest in environmental issues. Forest landowners placed more importance on networking with natural resource professionals than networking with fellow landowners.

Edwards, K.K. and J.C. Bliss. 2003. It's a Neighborhood Now: Practicing Forestry at the Urban Fringe. *Journal of Forestry* 101(3): 6-11.

The authors used quantitative and qualitative methods to gauge landowner views on forestry, focusing on the Soap Creek Watershed in western Oregon. While not offering much on the demographics of family forest owners, the article further confirms the finding that quality of life is consistently among the top motivating factors for people to own forest.

Egan, A. and S. Jones. 1993. Do Landowner Practices Reflect Beliefs? Implications of an Extension-Research Partnership. *Journal of Forestry* (October): 39-45.

Interviews and fieldwork were undertaken by the authors to explore the link between landowner management practices and stated views about forest stewardship. Egan and Jones show that information taken from surveys alone should not be seen as reliable indicators of how lands are managed. One notable finding was the fact that fewer than 50% of those who said they had harvested timber on their land “within the last 10 years” actually had.

-----, 1995. The Reliability of Landowner Survey Responses to Questions on Forest Ownership and Harvesting. *Northern Journal of Applied Forestry* 12(4): 184-186.

Further argues the points raised in their 1993 article, calling for ground-truthing of survey data.

Elwood, N.E., E.N. Hansen, and P. Oester. 2003. Management plans and Oregon's NIPF owners: A survey of attitudes and practices. *Western Journal of Applied Forestry* 18(2): 127-132.

Elwood et al. present the results of a 1996 survey of NIPF owners in Oregon. They obtained characteristics of forest owners from 254 usable surveys (response rate of 34.3%.) The article focuses primarily on the relationships between landowner characteristics and objectives and management plan development and use but provides a good profile of Oregon NIPF owners. Consistent with previous studies, NIPF in Oregon are older; only 25% were less than 50 years old. The authors pointed out that management objectives differed according to parcel size, yet, overall, respondents cited good stewardship; a nice place to live; leaving a legacy; and timber production as the most important reasons for owning forestland. About 31% had management plans, which is higher than that found by other studies.

Erickson, D.L., R.L. Ryan, and R.d. Young. 2002. Woodlots in the rural landscape: landowner motivations and management attitudes in a Michigan (USA) case study. *Landscape and Urban Planning* 58(2/4): 101-112.

The findings of Erickson et al. are consistent with the literature on NIPF owner motivations and management approaches. The authors conducted a mail-in survey of NIPF owners in two townships in Michigan in which previous land use change studies had been performed. There were 112 survey respondents (35% response rate) who identified non-economic benefits like aesthetic appreciation and environmental protection as motivation for retaining their woodlots. This group of NIPF owners have taken a “hands-off” approach to forest management, which the authors liken to more conservation-based behavior compared to tree planting, selective logging and cooperative management practices.

Finley, A.O., D.B. Kittredge, T.H. Stevens, C.M. Schweik, and D. Dennis. 2006. Interest in cross-boundary cooperation: Identification of distinct types of forest owners. *Forest Science* 52(1): 10-22.

Private forest owner interest in cooperative activities was evaluated through the use of a mail-in survey in Franklin County, MA. The authors profiled four subgroups of private forest owners according to their interest in cross-boundary collaboration and correlated these segments with their interest in different cooperative activities, socioeconomic variables, and demographic data

from 783 surveys (68.4% usable response rate.) Approximately half of respondents were open to cooperation. While data are summarized based on cooperation, the study provides a good overview of private forest owners in rural MA and provides a different perspective by which we can better understand NIPF owners, with particular implications for ecosystem-based forest management.

Finley, A.O., and D.B. Kittredge Jr. 2006. Thoreau, Muir, and Jane Doe: Different types of private forest owners need different kinds of forest management. *Northern Journal of Applied Forestry* 23(1): 27-34.

Finley and Kittredge use a three-phase analytical strategy to identify and describe private forest owner segments from a 2001 survey of 579 landowners in 20 towns in Massachusetts. Characteristics were then compared to participation in a state forest property tax program. Using this segmentation approach, the authors identified three segments of landowners who differ in their attitudes toward environmental protection, privacy, and appreciative values of forests. The “Henry David Thoreau” group (67% respondents) placed high value on privacy, contemplative benefits like scenery, recreation, etc. yet, they did not necessarily reject consumptive use of the forest for wood products. The John Muir group represented 23% of respondents who were best described as having a more hands-off approach to forest management and placed high value on environmental quality and protection. The final “Jane Doe” group represented 10% of respondents who differed greatly from the previous two segments because they placed little value on environmental protection, privacy or contemplative benefits. The authors caution against using these results to characterize a larger population of private landowners. This study provides a useful approach to understanding family forest owners that more accurately addresses the disconnect between “professed attitudes and observed behaviors.”

Force, J.E. and H.W. Lee. 1991. Nonindustrial Private Forest Owners in Idaho. *Western Journal of Applied Forestry* 6(2): 32-36.

Idaho NIPF owners statewide were surveyed by mail to determine their sociodemographic characteristics and their reasons for owning forest. A majority were found to be older and better educated than the state average. Generally, those who own smaller parcels tended to be employed in a professional or service occupation, are younger, and have owned their land for fewer years. Larger landowners were, comparatively, more apt to be employing some type of timber management, whereas smallholders cited aesthetics as a more important ownership objective. 34% of all surveyed had sought advice from a professional forester.

Gan, J., S.H. Kolison Jr., and N.O. Tackie. 2003. African-American forestland owners in Alabama's black belt. *Journal of Forestry* 101(3): 38-43.

Using a snowball survey approach, Gan et al. compiled information on a total of 171 African-American forest owners in the Black Belt region of Alabama via in-person interviews or mail-in surveys. The study provides demographic characteristics and forestland attributes for this specific subset of forest owners. These characteristics and attributes are compared to Alabama NIPF owners in general. African-American forestland owners had higher income and education level than others in the study area and paralleled other NIPF owners in Alabama. About 28% of respondents cited timber production as their primary management objective yet their land was less intensively managed compared to the broader group of NIPF owners in Alabama. Finally, demographics were correlated with forestland attributes and management behavior.

Gan, J. and S.H. Kollison, Jr. 1999. Minority Forestland Owners in Southeastern Alabama. *Southern Journal of Applied Forestry* 23(3): 175–178.

The authors look specifically at minority NIPF owners in two counties in Alabama. The mean size of forest was 113 acres. A higher percentage of such minority owners than the national average cited timber management and wildlife for hunting as the top management objectives. Over 65% were found to have thinned or harvested on their forestland. A majority of those interviewed stated that the forest did not contribute significantly to their income, and the authors conclude that lack of capital and lack of knowledge about forest management and marketing characterize minority NIPF owners.

Graesser, P.W. and J.E. Force. 1996. Early and Late Adopters of Stewardship Planning. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 222-229.

The authors compared Idaho NIPFs participating in the Forest Stewardship Program (FSP) and those who are not. A mail questionnaire was sent out, and respondents were grouped as “early adopters” (those who participate in the FSP) and “later adopters” (those who do not). Early adopters were found to be younger, better educated and wealthier than later adopters. Later adopters were found to have owned their property longer than early adopters, but spend less time on their forestland. No statistically significant difference was found between the two groups in terms of size of landholding. Generally, later adopters do not think there is much economic advantage to the FSP, and think that it is not compatible with their values.

Greene, J.L., T.J. Straka, and R.J. Dee. 2004. Nonindustrial private forest owner use of federal income tax provisions. *Forest Products Journal* 54(12): 59-66.

NIPF landowners in South Carolina were surveyed via a mail-in questionnaire to determine the relationship between certain demographic characteristics and knowledge and use of seven beneficial federal income tax provisions. A little more than 50% of landowners were aware of provisions specifically designed for forest landowners- the reforestation tax credit, amortization provisions, and the ability to exclude qualifying reforestation cost-share payments from gross income. The demographic characteristics associated with owner knowledge of all seven provisions included membership in a forest association, use of a written management plan, and high household income. Unfortunately, the authors did not collect and/or report information on the method by which landowners learned of these provisions, which would be helpful in revealing the best way to disseminate information for participation in programs. The NIPF demographic information collected differed from data obtained in South Carolina by Birch in 1996 using similar methods. Participants in this survey were older, less likely to be blue collar, owned more land, and were more likely to own forestland for timber production.

Hairston, A.B. and P.W. Adams. 1996. Landowner Opinions of Water Protection Rules in the Oregon Forest Practices Act. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 110-117.

The authors looked at perceptions of water protection rules among NIPF landowners, logging operators, and industry foresters. Their analysis concerned only those NIPFs that reported harvesting, thus it was not a broad cross-section of all NIPFs. Results show a greater diversity of opinions on regulations (from “strongly oppose” to “strongly support”) among NIPFs as compared to loggers and industry foresters. The need for targeted extension and educational awareness for NIPFs is highlighted as a way to address their concerns with regulations.

Hanson, N. 1996. Family-Owned Forests in an Era of Regulatory Uncertainty. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 95-100.

The author profiles the situation for family-owned forests in Washington State, where NIPFs make up about 3.5 million of the more than 20 million acres of forestland in the state. He contends that family forest owners manage their forests differently than others; most only harvest “when they need the money.” Hanson details the growing number regulations on forestry practice over recent years, and asserts that family forest owners are forced to cut more to make a return on their investment, or get out of forestland ownership altogether. The author suggests a “Conservation Contract” to keep land in forest and ensure a supply of forest products and forestry-related jobs.

Hodge, S.S. 1996. Challenges for Ecosystem Management With Virginia NIPF Owners. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 426–433.

The author analyzed 531 useable responses to a mail survey of Virginia NIPF owners. She found that 80% owned less than 250 acres and 50% owned less than 100 acres, with median parcel size being 90 acres. 50% of the respondents were aged 60 or older. As elsewhere, NIPF owners in the study ranked “preserving nature,” “maintaining scenic beauty” and “viewing wildlife” as the top reasons for owning forest. 46% of the respondents had not sought professional forestry advice, and among those who did, the author found them both to have larger parcels and to have a higher level knowledge about forests and forestry.

Hogl, K., M. Pregernig, and G. Weiss. 2005. Who are Austria's forest owners? Attitudes and behavior of traditional and new forest owners. Small-scale forestry in a changing environment. *Proceedings of the International Symposium IUFRO Research Group 3.08.00 Small-Scale Forestry*: 279-288.

Irland, L.C. 1999. Nonindustrial Private Owners. In: *The Northeast's Changing Forest*. Harvard University Press: Petersham, MA.

Jacobson, Michael G. 1998. Developing Extension Programs for Private Forest Land Owners in the Southeast: Are We Putting the Cart Before the Horse? Paper presented at the Third IUFRO Extension Working Party Symposium: “*Extension Forestry: Bridging the Gap Between Research and Application*,” July 19-24, 1998, Blacksburg, Virginia, USA.

Jacobson surveyed 3,125 NIPF owners in Florida. Of the 1,017 that responded, a majority (64%) do not live on the forest they own, meaning they do not manage on a day-to-day basis. Bucking the national trend, most of the respondents (70%) acquired their land through purchase, rather than inheritance. The average size of the landholdings was 235 acres, though the relatively short ownership tenure suggests a parcelization of forest in Florida. The author submits that such absentee owners of small acreage forests are more likely to hold land for aesthetic beauty, wildlife habitat and recreation rather than timber. Jacobson found that 43% used financial assistance in the form of cost-share programs, only 25% used reforestation tax credits, and 68% used technical assistance from county foresters.

Jacobson, M., E. Jones and F. Cubbage. 1996. Landowner Attitudes Toward Landscape-Level Management. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 417–425.

This article highlights the need to collect information on NIPF owners before trying to initiate conservation efforts that require their support. Their survey of NIPFs in South Carolina found that protecting commodity values is very important, that compensation for conservation easements might be very high, and that of the landowners surveyed there is little eagerness to divest their land or to allow outside intervention. The authors do not correlate these views outright with willingness to participate in landscape-level management however.

Jennings, B.M., and D.W. McGill. 2005. Evaluating the effectiveness of the forest stewardship program in West Virginia: Ten-year assessment. *Northern Journal of Applied Forestry* 22(4): 236-242.

A mail-back survey was conducted to assess the implementation rate of forest management practices in West Virginia recommended by forest stewardship plans. A total of 1672 surveys were returned (response rate of 63%,) representing about 61% of the total acres enrolled in the West Virginia Forest Stewardship Program (WVFSP). Jennings and McGill focused on how factors related to private forest owner satisfaction with the WVFSP and motivation behind enrollment affect implementation of prescribed forest management practices. Demographic traits, number of acres and management objectives are also presented. For this group of more active landowners, timber production and wildlife habitat creation were the most important objectives. Stand improvement, wildlife habitat improvement, recreation and soil improvement were the most common types of forestry practices implemented. Implementation rates were higher for forest owners participating in other forest landowner assistance programs.

Johnson, R.L., R.J. Alig, E. Moore and R.J. Moulton. 1997. NIPF Landowners' View of Regulation. *Journal of Forestry* 95(1): 23-8.

This paper explores the link between public regulations and NIPF management decisions in western Washington and Oregon. The authors emphasize the diversity of owners, and urge caution in reaching simple and sweeping conclusions about owner motivations and harvesting practices vis-à-vis regulations. They found that most NIPF owners come from older age groups (41% >60 yrs. old), are wealthier than average (with a mean income of \$61,000/yr.), and most of their income comes from off-forest sources. Unlike the rest of the US, however, nearly 25% of those interviewed work in the forestry industry. Average acreage ownership was 83, and 73% cited the "enjoyment of green space" as the primary reason for owning forest. Only 9% cited timber production as the primary reason. Especially among those who derive substantial income from timber management, the study found evidence that the anticipation of new regulations (on riparian buffers or Endangered Species Act restrictions) would prompt some owners to harvest sooner.

The paper concludes that owner responses to public regulation of private lands are guided by owner objectives. Larger landholders (more likely to engage timber management) are likely to harvest sooner, ahead of public rules on forest management; smallholders are less apt to change management as timber is less important to them. The authors therefore contradict Jones et al. (below) and say that there are substantive differences between large landholders and smallholders – though this observation is restricted to the West.

Jones, S.B., A.E. Luloff and J.C. Finley. 1995. Another Look at NIPFs: Facing Our "Myths." *Journal of Forestry* 93(9): 41-44.

The authors start with the premise that "most NIPFs are not well managed." The paper looks at NIPF owners in Pennsylvania, where they say only 6% have a written management plan, and less than 20% consult a forester before harvesting, resulting in widespread highgrading. Citing forester myths that NIPF owners are "land-connected, anti-environmentalist, timber-oriented, and intensely in favor of private property rights," the authors present data that suggest that landowners are in fact much more diverse. The paper is primarily geared towards foresters, and informing them of their "myths," but presents some secondary research from Luloff et al. (1993) (see Appendix).

Kendra, A., and R.B. Hull. 2005. Motivations and behaviors of new forest owners in Virginia. *Forest Science* 51(2): 142-154.

Kendra and Hull surveyed new landowners who purchased 0.8-20 acres of forestland between 1994 and 1998 in the top two counties with the highest population growth, housing starts and forestland loss within each of three physiographic regions of Virginia. The demographic attributes of these landowners were similar to previous studies of ex-urban forest owners. Ownership motivations and characteristics, management intentions, and obstacles to management were grouped according to six market segments. Only a small percentage (4%) within the absentee investors market segment resembled the "traditional" forest owner motivated by timber production. The majority of these new landowners were motivated by lifestyle, naturalism, and transcendental experiences. This study sample was stratified according to those owning 0.8 to 8 acres versus those owning 8-20 acres. The study does provide a comprehensive snapshot of ex-urban forest owner's characteristics and motivations for buying forestland.

Kluender, R.A. and T.L. Walkingstick. 2000. Rethinking How Nonindustrial Landowners View their Lands. *Southern Journal of Applied Forestry* 24(3): 150–158.

The authors looked at NIPF owners in the south, where they account for 70% of commercial timberlands. Respondents to a mail questionnaire were separated into four categories: timber managers, resident conservationists, affluent weekenders and poor rural residents. Timber managers were more affluent and better-educated than representatives from the other groups; resident conservationists tended to live on their land and opposed any harvesting; affluent weekenders did not live on the property, but also disapproved of timber harvesting; poor rural residents were raised on the land and were not averse to timber harvesting to make money, but generally lacked the capital to do so. An interesting observation that here that bucks a trend is that those who were actively engaged in timber harvesting were generally wealthier than those interested in conservation.

Koontz, T.M. 2001. Money Talks—But to Whom? Financial Versus Nonmonetary Motivations in Land Use Decisions. *Society & Natural Resources* 14: 51-65.

The aim of this paper is show how different landowners make land use decisions. Using interview data, spatial analysis and public records, the author submits that there are substantive differences between the land use decisions of those motivated by financial concerns and those motivated by nonmonetary benefits. According to the paper, these differences are further influenced by such factors as age, education, wealth, and primacy of the land as a source of income.

Kvarda, M.E. 2004. 'Non-agricultural forest owners' in Austria - a new type of forest ownership. *Forest Policy and Economics* 6(5): 459-467.

Kvarda details a shift in small-scale forest ownership in Austria toward “non-agricultural forest owners” who live in more urban areas, have non-agricultural professions, and rely on other sources of income besides that derived from forest products on their land. This new class of landowner, like ex-urbanites in the United States, values their forestland for enjoyment (recreation and as a hobby), and non-commercial utilization of timber for their own needs and those of future generations. The study serves as a parallel to private land ownership change in the United States.

Little, J.B. 2000. Family Forests: Loving Care, Heavy Burdens. *American Forests*, Winter 2000.

This article, while providing little hard quantitative data, provides a broad overview of the pressures many family forests are currently facing. Little focuses on high taxes and public disapproval of logging as two major obstacles, which are shaping family forest owner actions. With anecdotes, the author shows that many are sticking with it through financial burdens out of a heart-felt belief that forests should be sustained and land kept “in the family,” but she also notes that many are selling off their land under pressure. With regard to public pressure to open their forests to outside scrutiny, the author states that many feel over-regulated, asking why they are not simply trusted to manage their own land sustainably.

Lorenzo, A.B. and P. Beard. 1996. Factors Affecting the Decisions of NIPF Owners to Use Assistance Programs. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 264–275.

The authors examined NIPFs in Louisiana and their use of public assistance programs. NIPFs make up about 8 million acres of a total 13 million acres of timberland in the state. Data from Birch (1996) is presented on the demographics of private forestland owners. A survey was conducted to rank the motivations and objectives of NIPF owners. The research found that 51% of those surveyed owned less than 100 acres; 31% less than 50 acres; most owners were between 40 and 59 years old; 49% had completed college, and the better educated, the more likely they were to have used assistance. 37% of those surveyed had used such assistance, and there was a statistically significant positive correlation between acreage of ownership and use of the assistance.

Loyd, H. July 2003. A Roadside View of Kentucky Forest Practices. *National Woodlands Magazine*.

Measells, M.K., S.C. Grado, H.G. Hughes, M.A. Dunn, J. Idassi, and B. Zielinske. 2005. Nonindustrial private forest landowner characteristics and use of forestry services in four southern states: Results from a 2002-2003 mail survey. *Southern Journal of Applied Forestry* 29(4): 194-199.

NIPF owner demographics, use of forestry services, and educational needs for better forest management in the south-central U.S. were assessed using a mail-in survey. Surveys were sent to landowners in Arkansas, Louisiana, Mississippi, and Tennessee who owned 10 or more acres. About 30.7% were returned, which represents 1,689 respondents owning a total of 739,663 acres, 58% of which were forested. The top reasons for owning forestland included forest legacy (even though 34% did not have a written will), residence/farm, and a place to relax/privacy. Eleven percent of landowners reported having a written management plan. The majority of respondents had not received any forestry information, attended any educational programs, or were familiar with any government cost-share or tax incentive programs. Wildlife management, insects/disease, marketing, harvesting, and best management practices were the most popular educational topics of interest. Newsletters, pamphlets/brochures and letters were the most frequently cited methods for informing landowners.

Melfi, F.M., T.J. Straka, J.L. Baumann and A.P. Marsinko. 1995. An Analysis of Nonindustrial Private Forest Land Owners' Attitudes Towards the Forest Stewardship Program. In: Caulfield, J.P. and S.H. Bullard, eds. *A World of Forestry: Proceedings of the 25th Annual Southern Forest Economics Workshop*. Mississippi State, MS: Mississippi State University, Department of Forestry: 90-105.

Mills, W.L., Jr., W.L. Hoover, S. Vasan, K.T. McNamara and V. Nagubadi. 1996. Factors Influencing Participation in Public Management Assistance Programs. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 204-213.

A very useful article, both in terms of methods and application. The authors examined the attitudes and characteristics of Indiana landowners who participate in forestry extension programs versus those who do not. The researchers used focus groups and a mail questionnaire. Among their sample, 68.3% owned less than 50 acres; 73.8% had owned their forestland for more than 10 years; more than 50% lived on their woodland; and a majority said they didn't work on their forest. Those who participated in government forestry programs were more likely to be engaging some sort of active management. Non-participants generally had a lower income, education level, and owned less land. The authors conclude with a probit statistical model predicting the correlation between participation and a variety of factors, of which income level was the most significant, as well as size of landholding, age and government sources of information.

Moser, W.D., E.C. Leatherberry, M.H. Hansen, B.J. Butler. 2005. Farmers and woods: a look at woodlands and woodland-owner intentions in the heartland. In: Brooks, K.N. and P.F. Ffolliott (eds) *Moving Agroforestry into the Mainstream*. Proc. 9th N. Am. Agroforest. Conf., Rochester, MN. 12-15 June 2005 [CD-ROM]. Dept. Forest Resources, Univ. Minnesota, St. Paul, MN, 14 p.

Moser et al. conducted a pilot study to examine the relationship between farm woodland owners' intentions and use of their land and the physical condition of their land measured as structure and composition. Using the USDA Forest Service Forest Inventory Analysis and the National Woodland Owner Survey databases and interviews with 152 farm woodland owners in Indiana, Illinois and Iowa, the authors were able to determine how the condition of a forest stand reflects the intentions and actions of the owner. Farm woodland owners in the Midwest who value their woodlands for timber production, aesthetics and enjoyment (hobby) tend to have well-stocked stands and trees of higher volume. Those motivated by privacy, firewood production and non-timber forest product production tend to have lower volumes/ha. The highest diversity of species corresponded with land managed for wildlife and timber.

Nadeau, E. G. July 2003. New Forest Landowner Profile Sparks Resurgence in Local Organizations. *National Woodlands Magazine*.

Newman, D.H., M.E. Aronow, T.G. Harris, Jr. and G. Macheski. 1996. Changes in Forest Land Ownership Characteristics in Georgia. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 214-221.

The authors documented the motivations, attitudes and plans of NIPFs who have recently sold or purchased land in Georgia with the aim of determining if new landowners are different from longer-term owners. A mail survey among those who had purchased land of

more than 75 acres in the year 1993 was conducted – specifically seeking those who would be using the land for forestry. A total of 475 surveys were returned. New timberland owners were found to be older, better educated and wealthier – 50% had an income of over \$100,000/yr – than the general population. Absentee ownership (here classified as those who live more than 50 miles away from the property) was found to be on the increase; it was also found that there is an increasing interest in recreation and hunting. A majority anticipate timber harvesting in future, and many reported that they actively sought information to help them in making management decisions.

Potter-Witter, K. 2005. A cross-sectional analysis of Michigan nonindustrial private forest landowners. *Northern Journal of Applied Forestry* 22(2): 132-138.

To compare NIPF landowner characteristics, enrollment in different types of incentive or assistance programs, and management activities, a questionnaire was mailed to 2230 forestland owners enrolled in four different programs in Michigan. A 55% response rate resulted in 1234 usable responses. Demographic and parcel characteristics differed by enrollment in different types of programs. Of particular interest is the finding that parcel size and not having a permanent residence on the forested parcel had a significant effect on whether or not the forestland was managed. Surprisingly, age, income and education level were not significant predictors of management activity. Timber harvesting was the most common type of management activity followed by timber stand improvement and tree planting. This study provides demographic and forest management information for the more “active” group of forestland owners in Michigan.

Rickenbach, M.G., R.P. Guries, and D.L. Schmolt. 2006. Membership matters: Comparing members and non-members of NIPF owner organizations in southwest Wisconsin, USA. *Forest Policy and Economics* 8(1): 93-103.

When does membership in forest woodland owner organizations matter? Rickenbach et al. answered this question by surveying members and non-members of NIPF owner organizations in three counties of southwestern Wisconsin. They obtained information from 503 usable surveys (usable response rate of 69.5%.) Their findings suggest that members in woodland owner organizations are more likely to engage in a variety of management activities and are more willing to consider cooperating with their neighbors on forest management activities. Results also indicated that members and non-members differed little in their motivations for owning forestland, perceived barriers to management, recent timber harvest activities, and confidence in their management skills. For our purposes, the study provides information on landowner motivations (ecological value and quality of life were ranked most important) and reported management activities.

Rickenbach, M.G. 2002. Forest Certification of Small Ownerships: Some Practical Challenges. *Journal of Forestry* 100(6): 43-46.

This paper considers challenges to certifying NIPFs. Rickenbach states that since most NIPF owners do not have management plans, and since many do not consult foresters, it will be hard to certify vast acreages of NIPF lands. Focusing on such bottlenecks, Rickenbach also states that landowners are rarely willing to make substantial investments in management systems without assistance.

Ross-Davis, A.L., S.R. Broussard, D.F. Jacobs, and A.S. Davis. 2005. Afforestation motivations of private landowners: An examination of hardwood tree plantings in Indiana. *Northern Journal of Applied Forestry* 22(3): 149-153.

This study focuses on the afforestation motivations and planting establishment success of a distinct subset of NIPF owners in Indiana. Surveys were mailed to landowners who were randomly selected from a group of 2000 nursery orders of greater than 300 seedlings of the three most popular tree species. Basic demographic information and data on percent seedling survival were collected. There were no correlations between seedling survival and plantation size or seedling survival and use of cost-share programs, use of a management plan, subdivision of land, or previous experience planting hardwoods. The sites used in the study were distributed throughout Indiana but due to the small sample size (87 respondents), specific criteria for selecting participants, and assumption that those actively managing their land were those who plant trees, the results and demographic data should not be used to generalize about NIPF owners in Indiana.

Sample, V.A., C. Mater, and B. Butler. 2005. The New Generation of Private Forest Landowners: Brace for Change. *The Pinchot Letter* 10(2): 1-4.

The Pinchot Institute for Conservation and the USDA Forest Service conducted 300 telephone interviews with the children of current private forest owners in 25 states to determine if they were interested in future management of their family's land and what they saw as the benefits of land ownership. Most respondents wanted to inherit their family's forest but less than 50% want to be involved in the current management. The reasons for valuing the forest differed by gender, age, and geographic region. They saw taxes, maintenance costs and time as the major barriers to management. This report does not provide any information to construct a demographic profile of future NIPF owners. It also does not summarize results but only paints a broad portrayal of future implications of the intergenerational transfer of family forestland.

Sampson, R. Neil and L.A. DeCoster. 2001. *Sustaining Working Forests in the Peopled Woods – Improving Programs and Strategies for Communicating Sustainable Forestry Information to Non-Industrial Private Forest Landowners.*

Sampson, R.N. and L.A. DeCoster. 1997. *Public Programs for Private Forestry: A Reader on Programs and Options.* American Forests: Washington, D.C.

This reader presents a chapter on NIPFs, giving a broad overview of such ownerships drawing quantitative data from Birch (1996) – such ownerships are increasing over time, jumping by over 2.75 million owners between 1978 and 1994. NIPFs are increasingly small, with 59% of the NIPFs under 10 acres. Still, 96% of the total NIPF land is owned by only 40% of the owners. Sampson and DeCoster state that most NIPF owners' attitudes about environmental issues and forest management are more akin to the general public than professional foresters – that is, unlike forester concerns about timber supply, NIPF owners are more interested in forest products such as wildlife habitat, recreation and aesthetics. The authors assert that if sustainable forestry is to be extended to this vast ownership, NIPF owners will have to be shown that timber management can support these objectives.

- Schaaf, K.A., S.R. Broussard, and W.L. Hoover. 2004. Private lands in the Midwest: Exploring landowner views on collaboration, community, and social capital. In: Baumgartner, D.M. (ed.). *Proceedings of Human Dimensions of Family, Farm, and Community Forestry International Symposium*, March 29 – April 1, 2004, Washington State University, Pullman, Washington, USA.
- Schelhas, J., and R. Zabawa. 2005. Model forest landowners in Alabama: are they different from typical landowners? In: *Proceedings of the 11th International Symposium on Society and Resource Management*, Ostersund, Sweden. 48 p.
- Vermont Forest Resource Advisory Council. 1997. *Forest Landowner Survey*. Vermont Department of Forests Parks, and Recreation, Agency of Natural Resources.
- Vlosky, R.P. and J.E. Granskog. 2003. Certification: a Comparison of Perceptions of Corporate and Non-industrial Private Forestland Owners in Louisiana. In: *Forest Policy for Private Forestry: Global and Regional Challenges*. L. Teeter, B. Cashore and D. Zhang (eds.). CABI Publishing: New York.

While this report provides little in the way of information on demographics, it is an interesting case for rethinking accepted ‘truths’ about the insular nature of private forest owners. Through a rigorous scientific method, the paper shows that there is in fact little difference between NIPFs and big timber interests in terms of their willingness to allow certification assessments on their property, and their willingness to pay for such assessments. Given that this is Louisiana, the paper raises an interesting point that family forest owners may not be as xenophobic as many may assume.

- Vokoun, M., G.S. Amacher, and D.N. Wear. 2006. Scale of harvesting by non-industrial private forest landowners. *Journal of Forest Economics* 11(4): 223-244.

The goal of this study was to estimate what factors affected the NIPF owner decision regarding the intensity of harvest at the lowest acceptable price. A mail-in survey was administered to 1718 Virginia landowners in the hardwood region. There were 609 usable surveys resulting in an average response rate of 35%. While the empirical modeling is not relevant to this literature review, the authors do summarize demographic information and ownership characteristics and motivations for this group of NIPF owners. Environmental reasons (habitat, water quality and soil protection) were cited as the most important benefits to forest ownership.

- Washburn, M.P., S.B. Jones and L.A. Nielsen. 1998. *Nonindustrial Private Forest Landowners: Building the Business Case for Sustainable Forestry*. A Case Study from The Business of Sustainable Forestry. Sustainable Forestry Working Group.

Much of the broad demographic data presented herein is cited from Birch (1996). Collectively NIPFs account for 58% of the US commercial forest estate and supply 49% of the timber. Generally, new owners of forestland are younger, better educated, and wealthier than past forest owners; at the same time, a greater number are now retired. There seems to

be a growing number (40% is the number presented here) who cite recreation and/or hunting as the primary reason for holding land, not timber management.

Washburn et al. present two cases in this document that are of relevance to family forests. They profile two ownerships (one 171 acres, the other 639) and discuss their motivations and their management. Both owners (a brother and sister, and a husband and wife) cite the desire to keep land in forest and to hand down the land to the next generation as the primary drivers for owning forest. Aesthetic beauty and “sanity” are also important motivating factors. Both actively manage for timber, making a fair profit presently. The brother and sister do not have a management plan, but they consult a professional forester for advice. The husband and wife (with a larger holding) have an estate plan and a management plan, and offer their forest as an environmental education center for surrounding communities. As other studies make clear, the family forests owners profiled here, though having some similarities (such as the need to balance the tension between “money and meaning”), cannot be wrapped up and described neatly. They represent a huge diversity of interests, have owned their forest for varying lengths of time, and are motivated to use their lands in different ways with differing levels of outside input or support.

Wicker, G. 2002. Motivation for Private Forest Landowners. In: *Southern Forest Resource Assessment*. D. Wear and J. Greis (eds.). USDA Forest Service Southern Research Station and Southern Region.

Privately owned timberlands in the south are held in more than 4.9 million tracts. The number of private owners is increasing, while the size of their holdings is decreasing. Though private forest owners have widely divergent objectives and values, they hold forest primarily because it is “residence” and for recreation. Wicker states that though many southerners feel that property rights are important, they believe them to be secondary to environmental protection needs. Emphasizing the diversity of owners, Wicker says that “available research information is insufficient to define an average private southern forest landowner.”

Williams, R.A., D.E. Voth and C. Hitt. 1996. Arkansas’ NIPF Landowners’ Opinions and Attitudes Regarding Management and Use of Forested Property. In: Baughman, M.J., ed. *Proceedings: Symposium on Nonindustrial Private Forests: Learning from the Past, Prospects for the Future*. St. Paul, MN: University of Minnesota, Minnesota Extension Service, Extension Special Programs: 230–237.

The authors examined NIPF owners in Arkansas. Focus groups were held and a mail survey was sent out 2400 NIPF owners. The authors found substantial regional differences in terms of land use and participation in incentive programs. Delta and Southwest NIPFs were more interested in growing and selling trees, and used incentive programs to do so. Ouachita and Ozark region NIPFs preferred recreational use and grazing on their lands. Broadly, Arkansas NIPFs were found to be opposed to land use regulations, which restrict their activities on their land; all surveyed felt they were good land stewards and manage for environmental sustainability.

Appendix – Forest Service Technical Reports (Regional)

The below reports, prepared by the US Forest Service, are provided for the reader's reference. These documents were not reviewed in detail for this paper (save Birch's 1994 general report). They are fairly detailed quantitative profiles of private forest owners in different regions of the US. As such, they would be particularly useful in detailed analyses of a site-specific nature, and may be of interest in tracking demographic changes over time and space.

- Amacher, G. S., M. C. Conway, and J. Sullivan. 2004. Nonindustrial forest landowner research: A synthesis and new directions. In: Gen. Tech. Rep. SRS-75 Chapter 22:241-252.
- Birch, T.W., 1982. The forest-land owners of Ohio, 1979. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource Bulletin NE-74, 84 p.
- Birch, T.W., 1983. The forest-land owners of New York. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource Bulletin NE-78, 80 p.
- Birch, T.W., 1986. Forest-land owners of Maine, 1982. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Res. Bull. NE-90, 83 p.
- Birch, T.W., 1989. Forest-land owners of New Hampshire, 1983. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource. Bull. NE-108, 96 p.
- Birch, T.W., 1996a. Private forest-land owners of the Northern United States, 1994. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource Bulletin NE-136, 293 p.
- Birch, T.W., 1996b. Private forest-land owners of the Southern United States, 1994. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource Bulletin NE-138, 195 p.
- Birch, T.W., 1996c. Private forest-land owners of the United States, 1994. U.S. Department of Agriculture, Forest Service, Northeastern Forest Experiment Station Resource Bulletin NE-134, 183 p.
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- Birch, T.W., Butler, B.J., 2001. Private Forest-Land Ownerships of New York: 1980 and 1994. U.S. Department of Agriculture, Forest Service, Northeastern Research Station Resource Bulletin NE-153, 75 p.
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