USING MULTIPLE RESEARCH METHODS TO UNDERSTAND FAMILY FOREST OWNERS

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Abstract.—Applied research on family forest owners ensures that we understand who they are, what they do, and why they do it. This information enables us to develop policy, management, and outreach approaches that can optimize the social, economic, cultural, and environmental benefits of private forests at the landowner, community, and national levels. The three principal scientific sources of information are National Woodland Owner Survey (NWOS) data, Forest Inventory and Analysis (FIA) data, and individual research efforts focused on specific geographical areas. NWOS and FIA data aim to be geographically comprehensive and are collected in intervals to provide time series data but are also less responsive to change in order to provide time series data. Individual research studies are tailored to specific questions, but their place specificity makes generalization difficult. We need to identify key management questions, use multiple research methods and data sources, and work collaboratively to maximize the effectiveness of our research.

INTRODUCTION

Family forests (sometimes called Nonindustrial Private Forest, or NIPF, owners) represent 40 percent of the forested acres in the United States and are particularly prevalent in the Eastern United States, where 83 percent of the forest is in private ownership (Butler and Leatherberry 2004). In the South, family forests represent about 95 percent of the private forest owners and 63 percent of the private forest land (Birch 1996). Family forests provide many important private and public benefits. Family forest owners benefit from their forest lands through economic returns from sales of timber and other forest products, returns on investments, harvesting of products for home or farm use, enjoyment of recreation opportunities, appreciation of aesthetics and wildlife, and perpetuation of family legacy. Family forest lands also provide public goods related to land ownership, timber and pulpwood supplies, economic development, biomass for energy, forest health, watersheds, biodiversity, and global climate change. Research on and outreach to family forest owners can enhance these benefits, and private forests have long been a key target of public policy and outreach (Best and Wayburn 2001).

The study of relationships between people and forests is complex. First, family forests are subject to myriad social, economic, cultural, political, and biophysical factors and changes. These influences include: (a) the ways that people value forests, (b) markets for forest products, (c) government policies and programs that provide assistance to forest owners and restrictions on their actions, (d) market-based governance mechanisms such as certification programs, (e) long- and short-term environmental changes, and (f) changing population and residence patterns. Second, private forests can be studied at various scales, including the individual family forest holding; smaller social or biophysical areas such as watersheds or communities; and larger political units such as states, regions, and the nation. Finally, people and forests are studied by many academic disciplines, including human dimensions of natural resources, anthropology, geography, rural sociology, economics, and political science.

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FAMILY FOREST RESEARCH

Studies of family forest owners have described their social and economic characteristics (Birch 1996, Hartsell and Brown 2002), attitudes and values (Bliss and Martin 1989, Schelhas and Pfeffer 2009), forest management practices in response to policies (Brockett and Gebhard 1999, Zobrist and Lippke 2003), and use of government and professional assistance (Zhang et al. 1998). Other research has examined social relationships among forest owners, the dynamics between communities and forests, and institutions and governance affecting people's interactions with forests (Gibson et al. 2000, Lee and Field 2005).

As a result of these studies, we know that family forest owners are diverse in terms of demographics, ownership objectives, and amount and type of forest owned (Best and Wayburn 2001). Families own forests for many reasons, such as aesthetics, wildlife, recreation, income, and investment, but non-commercial reasons tend to predominate (Koontz 2001). Timber harvest is rarely the main reason for owning forests, although most owners do harvest and sell timber (Koontz 2001). Only a small percentage of forest owners make use of professional forestry assistance and/or have written management plans (Butler and Leatherberry 2004). Most have only a limited knowledge of professional forestry, and many forest landholdings receive little systematic management attention (Birch 1996). Recent research has examined differences by owner type and parcel characteristics (Koontz 2001) and used cluster analysis to group forest owners by similarities (Majumdar et al. 2008). Research in the United States on social relationships, communities, and governance has lagged behind international research in these areas (Schelhas et al. 2003).

The body of research on family forests helps us to develop conceptual models that link people to forests, with a critical nexus being human behavior and forest conditions. We know that human forest-related behavior is determined by complex mixes of economics, values, social characteristics and relationships, institutions, and policies across scales. Environmental conditions that limit or enable various types of forest management and uses at particular places are also important in determining what people do. Complex people-environment interactions over time—and forests have a long-term temporal dimension—ultimately produce specific environmental conditions (habitat and biodiversity, biomass and carbon sequestration, watersheds) and human conditions (well-being of individuals and communities, economic and rural development). The practical value of research is learning about these broad relationships in a way that helps us to make educational, management, and policy interventions that steer human-forest relationships toward more environmentally and socially beneficial outcomes or identify tradeoffs.

HOW DO WE LEARN AND KNOW?

Ultimately, the science of people-forest relationships is cumulative—we are able to develop the knowledge we need only through multiple studies of different natures that draw on the full range of data types. It is important for us to step back occasionally and reflect on the goals of our research, the data we are collecting, and how we can most effectively move our knowledge forward. For family forest owners, we have three major data sources, each of which has different strengths and weaknesses.

National Woodland Owner Survey (NWOS) Data

Today's NWOS builds on earlier periodic surveys of forest owners (e.g., Birch 1996) and is now an annual survey of forest owners in 5- and 10-year cycles (Butler and Leatherberry 2004). The NWOS represents our only comprehensive effort to understand family forest owners over time. Its value to forestry is similar to the value of the U.S. Census of Agriculture in understanding farmers (Schelhas et al. 2003). The NWOS is the fundamental source of information about the characteristics and practices of family

forest owners, and how these change over time. It has limitations that include the following: (a) questions change slowly to enable longitudinal studies, but limit tailoring to new issues, (b) it has historically focused primarily on owner characteristics and practices, and not social relationships and governance, (c) both the general and forest owner population are suffering from survey fatigue, reducing response rates and forcing researchers to limit questionnaire length.

Forest Inventory and Analysis (FIA) Data

FIA data provide a systematic sampling of a fixed set of plots, measuring topography, site conditions, and forest characteristics (Majumdar et al. 2009). When linked to NWOS or other survey data, FIA data add the important dimension of environmental data and forest characteristics. These data are limited to the standard FIA measurements, and linking to other data is hindered by non-response rates in surveys and the NWOS and by the low density of FIA plots in the case of more geographically focused surveys.

Individual Research Projects

Researchers at universities and Federal agencies conduct question-driven research projects. These projects at times use data from systematic monitoring efforts like NWOS and FIA to answer specific questions, but often collect original data. The many forest owner surveys with econometric analysis (Beach et al. 2005) show relationships among different social and economic variables and are important in understanding forest and people relationships. Qualitative research provides more nuanced understanding of values and behaviors (Bliss and Martin 1989). Projects focusing on policies and institutions may use combinations of ethnographies, interviews, and text analysis (Gibson et al. 2000). What these individually focused projects gain in depth and focus, they lose in breadth; they generally cover single sites or a few selected comparison sites, thereby hindering generalizability.

FORMULATING POLICY- AND MANAGEMENT-RELEVANT QUESTIONS

The goal of applied research on family forest owners is to formulate questions relevant to policy and management and to draw on the full range of research methods and data types to answer them. Two examples highlight research projects that drew on diverse data sets to answer complex and important policy questions.

Kaetzel (2011) used both NWOS and FIA data from Alabama, Georgia, and South Carolina to conduct an analysis of timber availability that adjusted the standing timber according to forest owners' willingness to harvest timber. By taking into account the diverse values, objectives, and practices of forest owners along with their timber inventory, Kaetzel obtained a more refined and useful measurement of timber supply.

Schelhas and Pfeffer (2009) combined qualitative interviewing and a survey to develop a conceptual model of the formation of forest owner values from both global environmental messages and local conditions, and how these values interact with livelihood needs to determine behavioral outcomes. The results provide guidance to programs that encourage family forest owners to manage forests for environmental benefits in buffer zones and corridors.

CONCLUSION

Forestry and social science researchers are asking critical questions and collecting a great deal of relevant data. There are many advantages to using multiple methods. Combining both survey and qualitative research can lead to nuanced understanding that can be used to develop better questionnaires; statistical analysis of quantitative data obtained from these questionnaires can then be used to support qualitative findings (Schelhas and Pfeffer 2009). Adding forest and site data adds an important environmental component. Yet many research efforts are

compartmentalized by institutional, disciplinary, and data boundaries. We can learn more if we endeavor to identify key management and policy questions, draw on multiple sources of data, and work collaboratively in our research.

LITERATURE CITED

Beach, R.H.; Pattanayak, S.K.; Yang, J.; Murray, B.C.; Abt, R.C. 2005. **Econometric studies of non-industrial private forest management a review and synthesis.** Forest Policy and Economics. 7: 261-281.

Best, C.; Wayburn, L.A. 2001. **America's private forests: status and stewardship.** Washington, DC: Island Press. 224 p.

Birch, T.W. 1996. **Private forest-land owners of the United States, 1994.** Resour. Bull. NE-134. Radnor, PA: U.S. Department of Agriculture, Forest Service. 183 p.

Bliss, J.C.; Martin, A.J. 1989. **Identifying NIPF management motivations with qualitative methods.** Forest Science. 35(2): 601-622.

Brockett, C.D.; Gebhard, L. 1999. **NIPF tax incentives: Do they make a difference?** Journal of Forestry. 97(4): 16-21.

Butler, B.J.; Leatherberry, E.C. 2004. **America's family forest owners.** Journal of Forestry. 102(7): 4-9.

Gibson, C.C.; McKean, M.A.; Ostrom, E., eds. 2000. **People and forests: communities, institutions, and governance.** Cambridge, MA: MIT Press. 274 p.

Hartsell, A.J.; Brown, M.J. 2002. **Forest statistics for Alabama, 2000.** Resour. Bull. SRS-67. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 76 p.

Kaetzel, B.R. 2011. **Family forest landowner research: attitudes about forest management and information needs.** Auburn, AL: Auburn University. Ph.D. dissertation. 81 p.

Koontz, T.M. 2001. **Money talks—but to whom? Financial versus nonmonetary motivations in land use decisions.** Society and Natural Resources. 14: 51-65.

Lee, R.G.; Field, D.R., eds. 2005. **Communities and forests: where people meet the land.** Corvallis, OR: Oregon State University Press. 300 p.

Majumdar, I.; Teeter, L.; Butler, B. 2008. **Characterizing family forest owners: a cluster analysis approach.** Forest Science. 54(2): 176-184.

Majumdar, I.; Teeter, L.D.; Butler, B.J. 2009. **Using extant data to determine management direction in family forests.** Society and Natural Resources. 22: 867-883.

Schelhas, J.; Pfeffer, M.J. 2009. **When global environmentalism meets local livelihoods: policy and management lessons.** Conservation Letters. 2: 278-85.

Schelhas, J.; Zabawa, R.; Molnar, J.J. 2003. **New opportunities for social research on forest landowners in the South.** Southern Rural Sociology. 19(2): 60-69.

Zhang, D.; Warren, S.; Bailey, C. 1998. **The role of assistance foresters in nonindustrial private forest management: Alabama landowners' perspectives.** Southern Journal of Applied Forestry. 22(2): 101-105.

Zobrist, K.; Lippke, B.R. 2003. **Case studies examining the economic impacts of new forest practices regulations on NIPF landowners.** In: Teeter, L.; Cashore, B.; Zhang, D., eds. Forest policy for private forestry. Oxon: CABI Publishing: 203-210.