FOREST CERTIFICATION AND NONINDUSTRIAL PRIVATE FOREST LANDOWNERS: WHO WILL CONSIDER CERTIFYING AND WHY?

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Abstract—As forest certification has grown as a tool to foster sustainable forest management, questions have arisen about the potential and suitability of forest certification for nonindustrial private forest (NIPF) ownerships (Lindström and others 1999, Newsome and others 2003, Rosenberger and Huff 2001, and Vlosky, 2000). This ownership category is particularly important in the central hardwood region where it comprises the majority of the forest land and contributes the greater part of the region's annual hardwood removal. Little is known of whom among this diverse and sizable group will adopt forest certification on their lands, and why. NIPF owners in western Tennessee were surveyed to evaluate their awareness, acceptance, and perceived benefits of forest certification. Only 2.9 percent of the owners were familiar or very familiar with forest certification. Even so, over eight in ten indicated a willingness to consider it. The type of landowner who would most likely consider certifying their forest can be profiled. These landowners were typically well educated, new at forest ownership, and had received information or advice about their forest land. They would certify for both monetary and non-monetary reasons.

INTRODUCTION

Most consumers are vaguely familiar with the concept of an objective third party certifying products to assure a high standard, or consistency, in product quality. The certification label that is affixed to electrical appliances by the Underwriters Laboratory, thereby assuring that appliances meet or exceed standards of quality and safety, is an example (Maser and Smith 2001). Certification has evolved in a number of industrial sectors including automobiles, chemicals, footwear, apparel, and fisheries (Sasser 2001). Forest certification is a relatively new development and deals not with the product, but with the practice of forestry, growth of the product, harvesting of the product, and ecological impacts associated with harvesting of the product (Klingberg 2003). Forest certification is gaining widespread attention by a variety of stakeholders including environmentalist, policy makers, professional foresters, social activists, loggers, and the general public (Mater 1999, Viana and others 1996).

The situation for forest certification in the United States is somewhat unique when compared to the global picture because such a large percentage of the total forest area in the U.S. is under nonindustrial private forest (NIPF) ownership. NIPF forests have traditionally filled an important position in U.S. wood production, a role that has become even more crucial with the decline in timber harvesting on public lands. However, the understanding of certification among this ownership class in the United States is low (Lindström and others 1999).

Many of the major retail outlets of wood and paper products have announced policies that recognize and give preference to certified wood products (Rana and others 2003). Some companies, in order to satisfy the minimum content guidelines required for paper and other wood products, are requiring greater percentage of certified wood in their inventory (American Tree Farm System 2005). These policies are in turn changing the wood procurement policies of the solidwood and pulpwood processing facilities. As a result of these concerns, stakeholders are beginning to debate the necessity of implementing forest certification on NIPFs. This ownership group is particularly important in Tennessee, where it comprises 79 percent of the state's 14.4 million acres. Moreover, these forests contribute more than 84 percent of the state's annual hardwood removal volume (Schweitzer 2000). In time, market forces could require large-scale certification, and the needs and preferences of NIPF landowners must be taken into consideration

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to ensure their participation. A viable certification system cannot be shaped without this knowledge (Lindström and others 1999).

The project reported in this paper was designed to assess awareness, acceptance, and perceived benefits regarding forest certification of NIPF landowners in west Tennessee, and to develop a profile of who would consider certifying, and why. The information is important if viable certification programs are to be developed and implemented for this ownership category.

STUDY AREA

This study focuses on West Tennessee and includes 9 counties within the 18 county Forest Inventory and Analysis West Tennessee Region. The 9 counties were selected as they represent 70 percent of the total forest area in the region (Schweitzer 2000). Because compiling and mailing to landowner populations is costly, three counties were randomly selected from the list of nine for survey purposes (Carroll, Hardeman, and Weakley counties). The three counties include 564,300 acres of total forest land (223,369 ha).

METHODS

Mail surveys were utilized for data collection to allow for coverage of large geographical area in a cost effective manner. The original database of landowners was obtained from the Tennessee State Division of Property Assessment. Only landowners controlling 40 acres or more of forest land were surveyed. A 50 percent random sample was drawn from the landowner list for the three counties. Duplicate names, trusts, businesses, partnerships, and saw and pulp mill ownerships were removed. After these reductions, the final mail sample became 1,153.

The survey instrument provided questions about owners and ownership characteristics. A draft version of the survey questionnaire was developed and pre-tested with two separate audiences. First, the questionnaire was sent to professional foresters for comment. Next, the survey was provided to NIPF landowners who were active in their County Forestry Association (outside the study counties). These individuals were asked to complete the survey, and to make suggested improvements for simplification or clarification. The questionnaire was refined based on feedback received.

In August 2004, postcards were mailed to the 1,153 landowners notifying them of the project and the intent of the research. Questionnaires and cover letters were mailed two weeks later. Landowners were assured that the information would be kept confidential. A reminder postcard was mailed, followed by a second questionnaire to the non-respondents. Another reminder postcard was mailed. The Dillman tailored design method was followed as closely as possible (Dillman 2000). The respondents were given the opportunity to receive a summary of the results for participating in the study. One hundred and three of the questionnaires were determined ineligible, bringing the eligible target population to 1,050. The final response rate was 50.7 percent. Telephone surveys were conducted to test for non-response bias. Using the Wilcoxon rank sum two sample test, none of the variables for the non-respondents showed a significant difference ($\alpha = 0.05$) between the respondents. Overall, these results reduced the concern for non-response bias.

DATA ANALYSIS

The survey consisted of 22 questions having a total of 78 response variables. After reading a definition of forest certification, participants were asked a binary (yes/no) question of their willingness to consider certification. This became the prominent dependent variable from which the demographic and attitudinal variables were examined. Chi-square tests were used to examine relationships between variables when data were ordinal scale and Spearman's correlation when data were interval. Results were reported as significant when $p \leq .05$.

RESULTS AND DISCUSSION

A series of questions with categorical responses were given to investigate landowner's familiarity with: (1) certification, (2) trustworthiness of objective third-party certifiers, (3) expected benefits of certifying, and (4) reasons for certifying. Only 2.9 percent of the respondents indicated they were familiar or very familiar with forest certification and 80.0 percent were not at all familiar. Familiarity with certification was not significantly related to willingness to consider certification.

Landowners were asked to read the following definition of forest certification and answer the questions that followed:

> "Forest certification means that forests are managed in a sustainable manner and that trees are harvested with environmentally sound practices. These management practices are certified by objective third parties. Landowner participation is voluntary."

Participants were asked to indicate their level of trust for five groups as "potential third party certifiers" (table 1). Landowners were most trusting of the state division of forestry, followed by consulting foresters, and were least trusting of environmental organizations.

Four major certification systems are the most active in the United States: Green Tag, Sustainable Forestry Initiative (SFI), American Tree Farm System (ATF), and Forest Stewardship Council (FSC). Landowners showed very little familiarity with any of these systems. The percent of respondents indicating either "familiar or very familiar" was: Green Tag (1.6), SFI (3.8), ATF (3.2), and FSC (2.8). Familiarity with any of the certification systems was not significantly related with willingness to consider certification.

To assess the perceived benefits of certification, a series of statements related to what certification could accomplish were given. All participants (including those that would not consider certification) were asked to indicate their level of agreement or disagreement with each perceived benefit (table 2). Seven of ten believed that certification would improve forest management; six of ten felt that it would both increase their profits from tree farming and that it would satisfy consumers that their wood purchases were supporting good forestry. Less than half of the respondents felt that certification would: lessen the need for forestry regulation, give recognition for the good forestry that they were already practicing, or be necessary for U.S. timber growers to complete in the international market.

When the perceived benefits of certification were linked with only those landowners who would consider certification, a highly significant relationship existed between all variables. In other words, landowners

Table 1—Rating of trustworthiness of objective third party forest certifiers by NIPF landowners

Third party certifier	Mean[a]	Mean[b]
State division of forestry	4.03	4.12
Consulting foresters	3.54	3.62
Landowner associations	3.21	3.34
Forest Industry	2.70	2.77
Environmental organizations	2.31	2.38

NIPF = nonindustrial private forest.
[a] Among all respondents (1 = not trustworthy; 5 = very trustworthy).
[b] Among respondents willing to consider certification (1 = not trustworthy; 5 = very trustworthy).

with willingness to consider certification felt strongly that certification would accomplish all of the potential benefits (P<.0001).

Landowners were asked whether or not they would consider certification, and 81.2 percent indicated that they "would." Those indicating affirmative were then asked the importance of six different reasons (both monetary and non-monetary) for why they would consider certification. The top three reasons landowners chose for certifying their forest were: (1) if it made their forest more healthy, (2) if it improved wildlife habitat, or (3) if it saved money by reducing the likelihood of future regulation. Ninety-two percent indicated that improving forest health was either important or very important, 84.8 percent stated improving wildlife habitat, and 84.0 percent claimed reducing regulation for the same. The lowest response was 62.8 percent, whereby participants thought that gaining access to additional markets was an important or very important reason (table 3).

Table 2—Perceived benefits of forest certification among all NIPF landowners

Perceived benefits	Respondents indicating "agree or strongly agree"
	percent
Certification will improve forest management	69.8
Certification will increase my profits in tree farming	61.0
Certification will satisfy consumers that their wood purchases are supporting good forestry	59.6
Certification will lessen the need for forestry regulation	42.9
Certification will give me recognition for the good forestry that I am already practicing	48.1
Certification will be necessary for U.S. timber growers to compete in the international market	33.0

NIPF = nonindustrial private forest.

Table 3—Reasons why landowners would consider certifying their forest land

Utility category	Reason for certifying	Respondents indicating "agree or strongly agree"	Overall rank
		percent	
Nonmonetary	If it helped protect the environment	81.2	4
	If it improved wildlife habitat	84.8	2
	If it made my forest more healthy	92.0	1
Monetary	If my wood products could be sold for a higher price	75.9	5
	If it gained me access to additional wood markets not normally available	62.8	6
	If it saved me money by reducing the likelihood of future regulation	84.0	3

Neither age of the landowners, nor the size of forest ownership, were significantly related to willingness to consider certification. However, more highly educated landowners (χ^2= 25.95, P<.0001), new owners (χ^2=74.74, P=.0036), and those who had received information or advice about their forest land (χ^2= 14.34, P<.0002) were more likely to consider certification.

Among the variables significantly related to a landowner's willingness to consider certification, tenure (the variable that classifies them as "new" to land ownership), and advice (the variable indicating they have received forestry advice or information) are perhaps the most prominent. Unlike the other variables that are significantly related to willingness to consider certification, these two variables can be captured from tax assessor records and professional foresters' lists. Doing so would allow targeting educational programs to landowners with characteristics favorable toward certification. With 16 percent of the forest properties anticipated to change ownership in the next 15 years, an increase in the number of new owners is likely. This suggests that forest certification among NIPF owners has the potential to be expanded.

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