The Journal of Extension

Volume 45 | Number 4 Article 16

8-1-2007

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Recommended Citation

Mercker, D. C., & Hodges, D. G. (2007). Forest Certification and Nonindustrial Private Forest Landowners: Who Will Consider Certifying and Why?. *The Journal of Extension, 45*(4), Article 16.
https://tigerprints.clemson.edu/joe/vol45/iss4/16

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August 2007 // Volume 45 // Number 4 // Research in Brief // 4RIB6

Forest Certification and Nonindustrial Private Forest Landowners: Who Will Consider Certifying and Why?

Abstract
Nonindustrial private forest owners in western Tennessee who own 40 or more acres of forestland were sent a mail survey to assess their awareness, acceptance, and perception of forest certification. More than eight in 10 participants indicated a willingness to consider certification. Landowners who would most likely consider certifying their forest were typically well-educated new forest owners, and had received advice or information about their forestland. They would certify for both utilitarian and environmental reasons, and they most trust the State Division of Forestry and consulting foresters as potential third-party certifiers.

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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 & Smith, 2001). The USDA Certified Organic label associated with certain fruits and vegetables at grocery stores is another, as are Quality Beef and Quality Pork Assurance Programs. 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 final 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). There were few calls for certifying forests until the mid-to-late 1990s. Forest certification now is gaining widespread attention by a variety of stakeholders, including environmentalist, policy makers, professional foresters, social activists, loggers, and the public (Viana, Jamison, Donovan, Elliot, & Gholz, 1996; Mater, 1999).

The situation for forest certification in the United States is somewhat unique when compared to the global picture because 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 niche in U. S. wood production, a role that is becoming even more crucial with the decline in timber harvesting on public lands. More recently the problem has been exacerbated with the rapid sell-off of vast expanses of forestry industry lands (American Tree Farm System, 2005).

The largest portion of the nation's forestland is located east of the Mississippi River, where 88% of all NIPF owners are located (Butler & Leatherberry, 2004). Even more significant is the strong regional identity of the 13 southeastern states. NIPF landowners in the Southeast number 5 million

and control 89% of the forest area (Wear & Greis, 2002). Further, nearly 60% of the nation's timber production is produced by these 13 states, with a striking 18% of the world's industrial timber products originating from the South (Prestemon & Abt, 2002). Wood production in the Southeast is expected to increase by over 50% between 1995 and 2040, or an average of 1.6% per year (Prestemon & Abt, 2002; Wear & Greis, 2002).

The timber resources of the southeastern region of the U. S. are essential to both regional and global economies. This region will retain the distinction as the single largest producer of timber products in the world for the foreseeable future (Prestemon & Abt, 2002). Uniquely, these lands are principally owned, controlled, managed, purchased, and sold by NIPF landowners.

If forest products originating on privately owned forests are to be included in certification, a better understanding of how this vital ownership category will accept certification is essential. The study reported here was designed to assess awareness, acceptance, and opinions 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. In time, market forces could require large-scale certification, and the needs and preferences of Tennessee NIPF landowners should be considered for them to remain competitive.

Study Area

The study includes nine counties within the 18-county Forest Inventory and Analysis West Tennessee Region. The nine counties were selected because they represent 70% 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 (223,369 hectares) of forestland for an average percent forest cover of 47.8 per county. NIPF landowners own 81% of the forestland in the three study counties.

Methodology

Mail surveys were used for data collection. The survey instrument provided questions about owners and ownership characteristics. The original database of landowners was obtained from the Tennessee State Division of Property Assessment. Only landowners controlling 40 acres or more of forestland were targeted for the study. A 50% random sample was drawn from the landowner list for the three counties, making the sample 1,153.

A draft version of the survey questionnaire was developed and pre-tested. The Dillman tailored design method was followed as closely as possible (Dillman, 2000). On August 6, 2004, postcards were mailed to the 1,153 landowners notifying them of the project. Questionnaires and cover letters were mailed 2 weeks later. 1Landowners were assured that the information would be kept confidential. The respondents were given the opportunity to receive a summary of the results for participating in the study. On November 23, the survey officially ended. One hundred and three of the individuals were omitted (because they did not own land, owned less than 40 acres, were deceased, or were undeliverable as addressed). This brought the eligible target population to 1,050. A total of 532 individuals returned questionnaires for a total response rate of 50.7%. 1

In late November, telephone surveys were conducted to test for non-response bias. None of the variables for the non-respondents showed a significant difference between the respondents ($\alpha = 0.05$).

Data Analysis

The survey consisted of 22 questions with a total of 78 response variables. Participants were asked to read a definition of forest certification and then 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 nominal, and Spearman's correlations when data were ordinal or interval. Results were reported as statistically significant when $P \leq .05$.

Results

Section 1. The Forestland

Landowners were asked how many acres of forestland they own ($\Phi = 216.6$, Md = 122), how they acquired the majority of their land (71.2% had purchased the land), and how many more years they intended to retain their forestland (84.6% intended to retain their land for more than 15 years). None of these variables was found to be significantly related with landowners' willingness to consider certification. However, tenure (in years) of ownership was significant ($\Phi = 21.0$, Md = 16.0). Landowners new to forest ownership were more likely to consider certification than those with longer ownership tenures ($X^2 = 74.74$, $P = 0.0478$).

People own forestland for many reasons. Participants were provided 14 common reasons for

owning forestland and asked to indicate the importance of each reason. The most important reasons for owning forestland were: 1) pass on to children or heirs, 2) enjoy scenery, 3) supply food and habitat for wildlife, and 4) long-term financial investment (Table 1). Of the 14 reasons for owning forestland, only two reasons were significantly related to landowner's willingness to consider certification: 1) timber production (X^2=19.26, P=0.0007) and 2) recreation other than hunting and fishing (X^2=18.0, P= 0.0012).

Table 1.
Most Important Reasons for Owning Forestland (5-Point Scale. 1 = Not important; 5 = Very important)

Reason for Ownership	Mean (Φ)	Standard Deviation (σ)	n
Pass on to children or other heirs	4.08	1.15	472
To enjoy scenery	4.06	1.09	449
To supply food and habitat for wildlife	4.00	1.07	462
Long-term financial investment	3.94	1.11	462
For hunting and fishing	3.84	1.28	451
For timber production	3.75	1.19	454
For privacy	3.58	1.37	434
As part of my family heritage	3.56	1.42	427
To have trees around home	3.05	1.47	390
For recreation other than hunting and fishing	3.04	1.34	419
To learn from nature	2.98	1.28	429
Because land can't be farmed	2.55	1.36	384
For grazing livestock	2.01	1.24	369
To collect firewood	1.70	0.99	401

Sixty-nine percent of the landowners indicated that they had harvested or cut trees from their forestland, yet there was no significant relationship between harvest history and willingness to consider certification. Landowners who had used a professional forester to plan, mark, or contract the harvest did not show more willingness to consider certification.

Section 2. Landowner Forestry Education and Assistance

Nearly one-half (48.4%) of the landowners indicated that they had received information about their forestland, with the State Division of Forestry, consulting foresters, and loggers being the top three sources (Table 2). One-fourth (26.1%) of the landowners had participated in government cost-share assistance programs for forestry or wildlife practices. Slightly more than half (54.7%) of the landowners felt it was important or very important to stay up-to-date with new forestry practices and programs.

Table 2.
Sources of Advice or Information About Forestland

Source of Advice	Percent of Owners Indicating They Had Received Advice from This Source
State Division of Forestry	56.6
Consulting Forester	37.2
Logger	35.1
Family or Friends	23.6
Another Landowner	17.8
Forest Industry	16.1
University/Extension	13.2

Landowners who had received information or advice about their forestland were more likely to consider certification (X^2=14.34, P=0.0002) than those who had not. Participation in government cost-share assistance programs was not significantly related to willingness to consider certification,

nor was awareness of, nor membership in, a county forestry association. However, those who believe that it is important "to stay up-to-date with new forestry practices and programs," was significant (X^2=36.61, P<.0001).

Section 3. Forest Certification

To investigate landowner's perception of certification, a series of questions with categorical responses were given. Only 2.9% of the respondents indicated they were familiar or very familiar with forest certification, and 80.0% were not at all familiar. Familiarity with certification was not significantly related to willingness 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.

Landowners who would consider certification were most trusting of the State Division of Forestry followed by consulting foresters and were least trusting of environmental organizations as objective third-party certifiers (Table 3).

Table 3.
Rating of Trustworthiness of Objective Third Party Forest Certifiers by Landowners Who Would Consider Certification (5-Point Scale. 1 = Not trustworthy; 5 = Very trustworthy)

Certifying Group	Mean (Φ)	Standard Deviation (σ)	n
State Division of Forestry	4.02	1.05	325
Consulting Foresters	3.51	1.20	292
Landowner associations	3.20	1.26	228
Forest Industry	2.70	1.23	293
Environmental Organizations	2.28	1.33	283

Landowners showed very little familiarity with any of the four certification systems active in the U.S. The percent of respondents indicating either "familiar or very familiar" was: Green Tag (1.6), Sustainable Forestry Initiative (3.8), American Tree Farm (3.2), and Forest Stewardship Council (2.8). Familiarity with any of the certification systems was not significantly related with willingness to consider certification.

To assess the respondent's perceived benefits of certification, a series of statements related to what certification could accomplish were provided. When the perceived benefits were correlated with only those landowners who would consider certification, a highly significant relationship existed between all variables (Table 4). In other words, landowners with a willingness to consider certification believed strongly that certification would accomplish all of the listed benefits, including lessening the need for forestry regulation (P<.0001).

Table 4.
Perceived Benefits of Forest Certification Among Landowners Willing to Consider It

Perceived Benefits	X^2 Value	P Value	n
Certification will improve forest management.	81.27	<.0001	340
Certification will increase my profits in tree farming.	72.68	<.0001	297
Certification will satisfy consumers that their wood purchases are supporting good forestry.	41.93	<.0001	295
Certification will lessen the need for forestry regulation.	37.13	<.0001	263
Certification will give me recognition for the good forestry that I am already practicing.	55.85	<.0001	279
Certification will be necessary for U.S. timber growers to compete in the international market.	33.48	<.0001	238

Landowners were specifically asked whether or not they would *consider* certification, and 81.2% indicated that they "would." Those indicating affirmative toward certification were then asked the importance of six different reasons for *why* they would consider certification. The top three reasons

landowners chose for certifying their forest were if certification (1) made their forest more healthy, (2) improved wildlife habitat, or (3) saved money by reducing the likelihood of future regulation (Table 5).

Table 5.
Reasons Why Landowners Would Consider Certifying Their Forestland (5-Point Scale. 1 = Strongly disagree; 5 = Strongly agree)

Reason for Certifying	Mean (Φ)	Standard Deviation (σ)	n
If it helped protect the environment	4.18	0.86	353
If it improved wildlife habitat	4.30	0.83	359
If it made my forest more healthy	4.47	0.67	356
If my wood products could be sold for a higher price	4.03	1.08	351
If it gained me access to additional wood markets not normally available	3.61	1.31	328
If it saved me money by reducing the likelihood of future regulation	4.23	0.92	335

Conclusion

Very few landowners were familiar with forest certification, likely because the concept is still new. Even so, when presented with a definition of forest certification, 81% indicated a willingness to consider it. Landowners most likely to consider certifying were typically well-educated professionals who were new at forestland ownership. They had received advice or information about their forestland and desired to stay up-to-date with new forestry practices and programs. They claimed a variety of reasons, including a healthier forest, improved wildlife habitat, and saving money by reducing likelihood of future regulation, as the most important reasons to certify their forestland.

Those willing to consider certification agreed that certification would achieve an array of benefits, including improved forest management, increased tree farming profits, satisfying consumers, less regulation, recognition for good forestry practices, and the ability to compete in the international market. Landowners indicated that the most trustworthy objective third party to conduct forest certification was the State Division of Forestry, followed by consulting foresters, then landowners associations. The size of forest ownership was not significantly related to landowner's willingness to consider forest certification.

Implication

Most professional foresters are somewhat astonished at the pace at which forest certification developed. It has brought enthusiasm and frustration, opportunities and restrictions. For the most part, the average NIPF landowner in the U. S. is oblivious to what has happened. Yet this ownership category is vitally important to sustaining the forest products industry. The findings of the study reported here reveal that the majority of NIPF landowners are willing to consider certification for their forest, and these individuals can be profiled.

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 in the past) 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.

When advancing the concept of forest certification to NIPF landowners, natural resource professionals should place equal emphasis on the environmental benefits. Forest health and improving wildlife habitat ranked high for reasons of certifying, and language that stresses these rewards for certifying should be included. Because landowners most trust the State Forestry Division and consulting foresters to certify their forest, professionals from these entities should be better trained on the process and benefits. It is imperative that foresters work more closely with specialists from other natural resource disciplines, as well as forest industry and the general public for a more holistic approach to forest certification.

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