Third Party Certification of Private Woodlands

9(b) $376,000 TF
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Overall Project Outcome and Results

Third party certification of forest lands verifies the land is being managed sustainably. Minnesota is a leader in the US with its certification of public and industrial forests, driven by demand from major purchasers for products made using certified fiber. However, efforts to certify private woodlands have been far less successful, even though those lands comprise nearly 40% of Minnesota's forest land base and supply about 50% of the wood harvested in the state. To sustain the quality of the state's forests and its forest-based economy, this project was funded to develop mechanisms to certify wood coming from family forests.

This project found the vast majority of family forest owners have little interest in certifying their land, and providing additional information about the benefits of certification does little to change their minds. Their primary interest in owning the land is for its wildlife or other recreational value. They have no interest in paying for certification, are distrustful of certification because they perceive it as a government program, and are concerned about losing decision-making control over their land.

To address the situation, this project helped develop the Minnesota Master Logger Certification program. Wood harvested by Minnesota Certified Master Loggers is considered to be third party certified by numerous major paper purchasers, and it does not impinge on landowner income or management objectives. In one year, this program increased the amount of certified wood harvested from family forests from 0% to 9.8%.

Other mechanisms for family forest certification are also available. The Aitkin County Soil and Water Conservation District (SWCD) was awarded certification for its forest services program, covering 13 landowners and 1,574 acres, with owners of another 20,000 acres eligible to participate. The state Tree Farm System is working with the Minnesota Forest Stewardship program to certify additional landowners. In the future, there may be opportunities to link certification with markets for carbon credits and carbon sequestration, opening new avenues for family forest certification.

Project Results Use and Dissemination

The Minnesota Master Logger Certification program is being marketed vigorously to loggers in the state. To date, 43 loggers have been certified and another six are seeking certification. Efforts to certify more loggers will continue in the future and there has been substantial press

coverage of this program. The Aitkin County SWCD is being considered by others as a model. More than 10,000 brochures summarizing the options for family forest certification were printed and are being distributed to private woodland owners. A September 2007 workshop will explain the project results, and they will be shared at an upcoming "Million Acre" conference for private woodland owners. A journal article describing the entire project is being prepared for publication in the future. Although excellent progress was made, there is still a significant gap in certified wood from family forests. Work will continue by many involved in this project to close that gap.

Project completed June 30, 2007

LCMR 2005 Work Program Final Report

Date of Report: June 30, 2007

I. PROJECT TITLE: LCMR Final Work Program Report -Third Party Certification of Private Woodlands

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Total Biennial LCMR Project Budget:	**LCMR Appropriation:**	**$**	376,000
	Minus Amount Spent:	**$**	376,000
	Equal Balance:	**$**	0

Legal Citation: ML 2005, First Special Session, Chp. 1, Art. 2, Sec. 11, Subd. 9(b).

Appropriation Language: $188,000 the first year and $188,000 the second year are from the trust fund to the University of Minnesota, Cloquet Forestry Center to pilot a third party certification assessment framework for nonindustrial private forest owners.

II. and III. FINAL PROJECT SUMMARY:

Third party certification of forest lands verifies the land is being managed sustainably. Minnesota is a leader in the US with its certification of public and industrial forests, driven by demand from major purchasers for products made using certified fiber. However, efforts to certify private woodlands have been far less successful, even though those lands comprise nearly 40% of Minnesota's forest land base and supply about 50% of the wood harvested in the state. To sustain the quality of the state's forests and its forest-based economy, this project was funded to develop mechanisms to certify wood coming from family forests.

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land is for its wildlife or other recreational value. They have no interest in paying for certification, are distrustful of certification because they perceive it as a government program, and are concerned about losing decision-making control over their land.

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The Minnesota Master Logger Certification program is being marketed vigorously to loggers in the state. To date, 43 loggers have been certified and another six are seeking certification. Efforts to certify more loggers will continue in the future and there has been substantial press coverage of this program. The Aitkin County SWCD is being considered by others as a model. More than 10,000 brochures summarizing the options for family forest certification were printed and are being distributed to private woodland owners. A journal article describing this entire project is being prepared for publication in the future. Although excellent progress was made, there is still a significant gap in certified wood from family forests. Work will continue by many involved in this project to close that gap.

IV. OUTLINE OF PROJECT RESULTS*:*

Result1: Assisting NIPF Landowners with Certification
Result 2: Monitor use of the pilot certification framework
See Project Final Report below budget information.

Summary Budget Information for Result 1:	**LCMR Budget $**	298,500
	Amount spent $	298,500
	Balance $	0

People were hired directly to develop educational material instead of contracting the work out. As a result, direct personnel and educational material expenses increased while professional contract expenses decreased.

Summary Budget Information for Result 2:	**LCMR Budget**	**$** 77,500
	Amount spent	**$** 77,500
	Balance	**$** 0

People were hired and contracts were used to more closely monitor the certification framework instead of creating additional educational material. As a result, personnel and professional contract expenses increased while educational material and travel costs decreased.

Project Results

Introduction

Third party certification of forest lands verifies that it is being managed sustainably for fiber production, wildlife habitat, water quality, biological diversity, economic benefit, and other benefits. There are several third party forest certification systems available to landowners, all of which have the same goal but emphasize to a greater or lesser degree various aspects of forest management.

Minnesota is a leader in the US in its certification of state, county, and industrial forests, driven by demand from major purchasers for products made using certified fiber. However, efforts to certify private woodlands have been far less successful, even though those lands comprise nearly 40% of Minnesota's forest land base and supply about 50% of the wood harvested in the state. The large number of those landowners (approximately 150,000) and a fairly rapid turnover rate of ownership, combined with their low level of interest in certification, make them a complicated target for certification efforts.

To sustain the quality of the state's forests and its forest-based economy, this project was funded to develop mechanisms to certify wood coming from family forests. It included 1) efforts to better understand the mindset of family forest owners and their viewpoints about certification; 2) a pilot program in group certification, 3) creation of a new certified logger program, and 4) production of an informational brochure to provide family forest owners with forest certification options.

The project was focused on the four counties in north-central Minnesota (Aitkin, Cass, Itasca, St. Louis) but the results are applicable throughout the northern forested portions of Minnesota. Each portion of the project is described in detail below.

Objective 1. Identifying Northern MN Family Forest Owners Interested in Forest Land Certification[i]

Overview

The purpose of this objective was to identify the characteristics of those northern Minnesota family forest owners most likely to enroll in a forest land certification program. To do so, the following three tasks were completed:

1. Summarize information from the literature describing characteristics suggesting greater or lesser interest in active forest management among family forest owners.

2. Quantitatively assess the relationship between family forest owner characteristics and interest in forest land certification.

3. Qualitatively assess opportunities for and barriers to family forest land certification.

Summarized below are the work and findings associated with each project objective.

Task 1: Identify Characteristics of Family Forest Owners Who Are Active Forest Managers

Background

The objective of this portion of the project was to summarize information from literature characterizing how various attributes positively or negatively affect family forest owner interest in active forest management. Active forest management is defined as attaining desired forest objectives and future forest conditions using cultural operations and forest management practices (Montana SAF 2007). This may include timber harvesting, tree planting, thinning, fertilization, grazing, weed control, and other activities for improving wildlife habitat and watersheds such as erosion control, fire suppression, restoration-based fuel treatment, and prescribed fire. Active management also involves road and trail construction and maintenance, as well as activities and practices for improving recreation areas and trails (Montana SAF 2007).

Forest land management studies were reviewed because few forest certification studies describing the characteristics of family forest owners who may be interested in enrolling in a forest certification program have been published. To meet the performance measures standards established by forest certification systems such as the Sustainable Forestry Initiative (SFI) and the Forest Stewardship Council (FSC), active forest management on the part of the individual seeking certification is often necessary in the absence of naturally occurring forest events (i.e., periodic natural disturbances). Identifying family forest owners who actively manage their forestland may provide an important link to family forest owners interested in forest certification.

Methods

Literature was identified using the University of Minnesota's online library catalog search feature. Literature was also identified by referencing cited sections of other family forest owner forestland management studies. The literature review focused on studies that were published between 1996 - 2006 to capture the most current demographics, tastes, preferences, and attitudes of family forest owners. The types of studies reviewed focused on forest certification, rural woodlot management, forest management plans, and sustainable forest management attitudinal studies. These focus areas were selected because they draw upon different aspects of family forestland management. The geographic scope of the studies reviewed includes different regions of the United States and Europe. Variables (factors which show either greater or lesser relationships with active forest management) were selected according to their frequency of occurrence and perceived importance on influencing landowner behavior.

Results

Seventeen studies meeting study selection criteria were identified. These studies paint a mosaic of complex landowner motivations and characteristics. They are listed below in alphabetical order by the principal author's last name (Table 1).

Table 1. Studies identified during the literature review that relate family forest owner characteristics, attitudes, and management habits to active forestland management.

Investigator(s)	Objective and/or Scope	Study Location	Sample[1] Size
Baughman 2002	Determine family forest owners' values and evaluate the effectiveness of technical assistance and education programs. Determine how to better focus technical assistance, education, and financial incentives.	Minnesota, USA	1,000
Creighton and Baumgartner 2005	Determine the current knowledge of family forest owners in Washington State regarding several state environmental regulations.	Washington state, USA	918
Elwood et al. 2003	Learn more about the existence, use, and nature of management plans within Oregon's community of family forest owners.	Oregon, USA	254
Erickson et al. 2002	Gain insights into the motivations and management attitudes of family forest owners in lower Michigan.	Michigan, USA	110
Hogl et al. 2005	Examine whether there are subgroups of family forest owners that share similar characteristics but can be differentiated from other forest owners who share similar characteristics. The study has implications for forest policy, forest management, and extension outreach programs.	Austria, Europe	623

[1]This is in reference to the usable response rate/number, which is derived from the original sample size. It can be thought of as the approximate number of returned usable questionnaires or the number of interviewees.

Jacobson et al. 1996	Improve understanding of family forest owners' attitude toward landscape-level management and willingness to provide land for a corridor system for wildlife, improve bio diversity, and reduce fragmentation.	South Carolina, USA	458
Jennings and McGill 2005	Expand on the 5-year assessment of the forest stewardship program (FSP) through an examination of the relationship between demographic factors and successful implementation of recommended FSP practices in West Virginia over the initial 10 years of program operation.	West Virginia, USA	1,672
Kendra and Hull 2005	Characterize the motivations of family forest owners who recently purchased forested land in urbanizing areas. Suggest how communication and marketing can help target forest management advice at these different segments.	Virginia, USA	661
Kluender and Walkingstick 2000	Identify clusters of Arkansas family forest owners with specific typological characteristics that are useful in identifying key features of willingness-to-participate in sustainable forest management activities.	Arkansas, USA	827
Lindstrom et al. 1999	Gain a better understanding of family forest landowners' attitudes toward forestland certification, their general land values and objectives, and to view consumer perceptions of certification through a behavioral framework.	Finland and the United Kingdom (UK), Europe	1,220 (Finland); 600 (UK)
Measells and Grado 2005	Assess landowner characteristics, use of forestry services, and forestry-related educational needs of a representative sample of forest landowners from 4 south-central states.	Arkansas, Louisiana, Mississippi, and Tennessee, USA	1,842
Mercker 2006	Identify and examine likely adopters of forest certification among family forest owners in Western Tennessee.	Tennessee, USA	536
Newsom et al. 2003	Determine forest owners' attitudes toward certification and address the issues of costs, benefits, cooperation, and communication associated with landowner characteristics.	Alabama, USA	Approximately 1,100
Rickenbach et al. 2005	Determine links between the values and intentions of new family forest owners and their environmentally sensitive forest practices.	Wisconsin, USA	22 (interviewees)
Stevens et al. 2002	Analyze the tradeoff decisions made by family forest owners in regards to existing state and federal forest management program characteristics. Estimate the impact of change in management program characteristics on the likelihood of family forest owner participation.	Massachusetts USA	209
Uliczka et al. 2004	Evaluate the relationships between the attitudes towards and knowledge about conservation issues of family forest owners, and on the other hand, their personal attributes and their level of education in the field of biodiversity conservation.	Sweden, Scandinavia	393

Zhang and Mehmood 2001	Identify the determinants of family forest owners' choice of a forester for two important forest management activities: timber harvesting and tree planting assistance.	Alabama, USA	271

Fourteen "explanatory" variables were identified through the literature review as important in helping to explain greater or lesser interest among family forest owners in active forestland management. The variables were:

- Acreage: relates the size of the forest property ownership as well as the number of tracts or "parcels" to active forestland management.
- Age: refers to the significance of family forest owner age in relation to their management habits and characteristics.
- Distance: refers to the distance family forest owners live from their forestland. It also pertains to absentee landowners, or those landowners who do not live on his/her forest property as their primary residence.
- Economic Incentives: describes the level of importance economic incentives play in relation to active forestland management. The variable also characterizes landowners' behavior and attitudes towards management programs that charge participants to receive professional management assistance or some other management-related service.
- External Control: Describes family forest owner behavior and attitude towards government (local, state, and federal) organizations, programs, or individuals that have a high (or low) level of involvement in overseeing forest management programs.
- Length of Ownership: refers to the length of time family forest owners have owned their forestland and how land tenure relates to active forestland management.
- Education Level: refers to the highest level of education (high school, two-year college, university, graduate school, etc.) landowners have completed and relates this level of educational attainment with active forestland management.
- Income (wealth): identifies family forest owners' propensity to actively manage their forestland based on household income.
- Organization: investigates relationships between family forest owner involvement in natural resource-related organizations, cooperatives, and other landowner groups and active forestland management. The variable also addresses a possible link between organizational membership and recognition given by society, family, friends, or neighbors.
- Timber Harvest: investigates the relationship between family forest owners who have had timber harvests on their land in the past (or would consider doing so in the future) and active forestland management.
- Professional Assistance: refers to professional forestland management assistance landowners receive from consulting, industrial, or public agency foresters.
- Management Plan: refers to the presence of a written plan of action in regards to active forestland management.

- Occupation Being Agriculture: refers to family forest owners working in agricultural-related occupations and relates this livelihood to active forestland management.
- Reasons for Ownership: describes an individual's primary reason for forestland ownership and the owner's perceived value of the land for timber production, wildlife habitat, or amenity values.

Eight of the 14 variables examined were identified as being strong "drivers" of active forestland management: acreage, economic incentive, external control, organization, timber harvest, professional assistance, management plan, and reasons for ownership (Table 2).

Table 2. Important driving variables of active forestland management (as determined by a review of the literature) and their impact on active forestland management.

Important Driving Variable	Characteristic of Active Managers of Family Forest Lands
Acreage	Large acreage
Economic incentive	Greater financial incentive
External control	Less perceived external control
Organization	Enrollment in one or more natural resource-related organizations
Timber harvest	Harvested trees in the past
Professional assistance	Past contact/assistance from a professional forester
Management plan	Have a management plan
Reasons for ownership	Interest in timber production and/or investment

The literature suggests that landowners active forest managers expect to generate income through timber production and/or enjoy the wildlife habitat enhanced through forest management practices. These were primary reasons why they owned the forestland. By having a management plan for their forestland, these landowners become more educated on the subject of forest management and were more likely to conduct a commercial timber harvest. Most of these individuals had larger tracts of forest land than the typical family forest owner. Those family forest owners perceiving less external influences over their land use and management decisions would likely cause them to actively manage their forestland. However, the owner typically needed a substantial economic incentive in order to be an active forest land manager. The involvement in natural resource-related associations, cooperatives, and other landowner organizations often led to active forestland management. Owners who received professional forestry assistance generally felt it was one of the most positive experiences associated with owning their property, and these experiences often promoted an interest in active forestland management.

Task 2: Quantitatively Assess the Relationship Between Family Forest Owners Characteristics and Interest in Forest Land Certification.

Background

The objective of this task was to develop and test a statistical model in order to identify the likelihood of enrollment of northern Minnesota landowners in a forest land certification program.

Methods

Information obtained from the literature review undertaken in task 1 (described above) was used to test hypotheses regarding the likelihood a family forest owner would enroll in a forest land certification program. The 2005 Minnesota forest land owner opinion survey (FLOOS) database, conducted by the University of Minnesota in conjunction with the Blandin Foundation (Kilgore et al. 2005), was used to link drivers of active forestland management and interest in enrolling in a forest certification program (Table 3).

Table 3. Attributes of the 2005 Minnesota forest land owner opinion survey.

Objective: Evaluate the potential to increase the acreage of Minnesota's certified family forestland by understanding Minnesota family forest owner attitudes towards and interest in forest land certification.
Study Location: Northern Minnesota, four counties: Aitkin, Cass, Itasca, and St. Louis.
Data Gathering Methods: 1) Mail back survey to 469 family forest owners and 2) three family forest owner focus group interviews.
Survey Questions: Three major areas of inquiry concerning: 1) forest certification, 2) forestland management activities, and 3) socio-demographic information.
Sample Size: 236 completed and usable questionnaires returned; 62% response rate.
Data Analysis: Quantitative analysis using: 1.) frequencies and descriptive statistics, 2.) subgroup chi-square crosstabs, and 3.) qualitative analysis using focus group interviews.

Source: Kilgore et al. 2005.

FLOOS questions were reviewed to identify those that could be used as a proxy for representing a family forest owner's willingness to engage in active forestland management. Each variable selected was hypothesized to significantly increase the likelihood of enrollment in a forest land certification program. Table 4 identifies the questions used from the 2005 Minnesota FLOOS.

Table 4. Important variables identified through a literature review (Task 1), corresponding FLOOS survey variable and question, predicted sign, and mean value among survey respondents.

Driver Variable	FLOOS Survey Variable	Survey Question / Definition	Predicted Direction of Influence	Mean Score among FLOOS Survey Respondents
Acreage	Acreage	How many acres of forestland do you own in Minnesota? [1 = < 200 acres; 2 = 200 or more acres]	+	1.2
Economic incentive	Pay no costs	Would you participate in a forest certification program if you had to pay none of the cost to certify your forest? [1 = unlikely; 2 = likely]	+	1.64
	Price premium	Would you participate in a forest certification program if you received a price premium for your timber? [1 = unlikely; 2 = likely]	+	1.59
External control	Certifying org: forest landowner association (FLA)	Would you participate in a forest certification program if the certifying organization was a forest landowner association (FLA)? [1 = unlikely; 2 = likely]	+	1.53
Organization	Member organization	Are you a member of one or more of the following organizations: Minnesota Forestry Association, a local woodland owner association, a wildlife organization, a conservation/environmental organization? [2 = yes; 1 = no]	+	1.32
Timber harvest	Past harvest	Have you commercially harvested trees on your forestland while being the owner? [2 = yes; 1 = no]	+	1.48
Professional assistance	Professional assistance	Since owning your property, have you sought advice/been contacted by a professional forester? [2 = yes; 1 = no]	+	1.42
Management plan	Management plan	Do you have a forest management plan prepared for your forestland? [2 = yes; 1 = no]	+	1.23
Reasons for ownership	Improved wildlife	As an owner of forestland, how important or unimportant is the benefit of improved wildlife habitat in a forest certification program? [1 = unimportant; 2 = important]	+	1.86

Binary logistic regression was used to identify those attributes and attitudes of Minnesota's family forest landowners which are significant predictors of a landowner's interest in forest land certification. Logistic regression measures the relative impact of one or more independent/explanatory variables against any one dependent/response variable (Peng et al. 2002). For purposes of this study, the impact measured was the likelihood the landowner would enroll in a forest certification program (i.e., 1 = *likely* to enroll and 0 = *unlikely* to enroll).[2] All scalar variables (i.e., more than one response category) were transformed to binary values for ease of interoperability. Diagnostic, inferential, descriptive, and goodness-of-fit tests were conducted to evaluate model performance. All statistical tests were performed using the Statistical Package for Social Sciences (SPSS) statistical package software for Windows (PC).

Results

Only two variables, "price premium" and "external control," were statistically significant predictors of a Minnesota family forest owner's interest in certifying his/her forest land. Respondents were more likely to have their forest certified if they believed they would receive a price premium for their harvested timber or the forest land certification program was administered by a forest landowner organization. A landowner's odds of enrolling in a forest certification program was 2.5 times greater if respondents believed they would receive a price premium for their harvested timber and 2.8 times greater when the certifying organization is a forest landowner organization.

There are several possible reasons why few variables were good predictors of family forest owners most likely to certify:

- Northern Minnesota landowners do not have enough information about forest certification to make fully-informed decisions about the program.

- Northern Minnesota landowners do not see forest certification as aligning with their values, specifically their non-timber oriented goals for ownership, fear of government control and/or decreased control over the land, and lack of perceived financial incentives.

- The FLOOS did not collect the types of information about the family forest owner or family forest land management and uses that could help more effectively gauge family forest owner interest levels in a forest certification program.

- Hypothesized variables (based on the literature) included in the model are based on findings from studies conducted worldwide and therefore may not

[2] The response variable is question #6 in the Kilgore et al. (2005) survey: "How likely are you to have your forest certified?" The transformed dichotomous response variable was 0= unlikely (to certify) and 1= likely (to certify).

adequately address Minnesota family forest owners' unique tastes and preferences regarding enrollment in a forest certification program.

Task 3: Qualitatively Assess Opportunities For and Barriers to Family Forest Land Certification.

Background

The purpose of this portion of the project was to qualitatively assess the information and findings obtained from tasks 1 & 2.

Methods

Focus groups were used as the means for gathering qualitative information. Specific objectives of the focus groups were to:

- Present statistical model findings and solicit group input on the perception of the validity of those results.
- Identify factors/characteristics to use in targeting landowners.
- Identify potential barriers to increasing the number of certified family forestland acres.
- Compare responses of different focus groups.
- Develop a "best set" of key characteristics important to consider when identifying family forest owners most likely to have their forestland certified.

Focus group participants were forestry professionals that provide assistance to Minnesota family forest owners on a regular basis. The four categories of forestry professionals included:

- University of Minnesota Extension foresters (classified internally as "Regional Extension Educators").
- Private forestland managers of the Minnesota Department of Natural Resources (MN-DNR) – Division of Forestry.
- Service foresters within private industry in Minnesota.
- Private consulting foresters in Minnesota.

Potential focus group participants within each of the four categories were identified using several sources. They include publicly available personnel lists from those organizations, suggestions from representatives of these organizations, and Department of Forest Resources, University of Minnesota faculty members. Within each professional forestry category, an attempt was made, whenever possible, to select focus groups that were composed of professionals of varying age, ethnicity, and gender.

Potential participants were initially contacted by telephone. For those expressing an interest in participating, a follow-up letter confirming participation and providing details of the focus group meeting (e.g., date, location, time, objectives)

was sent. Prior to conducting the focus groups, the following eight key topics were identified as major points to be covered during the focus group session:

1. Characterization of the family forest owner.
2. Description of the nature of focus group participant interaction with family forest owners.
3. Focus group participants' perspectives on forest certification.
4. Description of conversations with family forest owners about forest certification.
5. Feedback on objective 2 findings (relationship between landowner characteristics and interest in forest certification).
6. Perspective on family forest owner interest in forest certification.
7. Real and perceived barriers to forest certification.
8. Recommended program changes to increase family forest owner interest in forest land certification.

Four separate focus groups were conducted. Each focus group was composed entirely of one category of forestry professionals. For example, one focus group consisted entirely of consulting foresters. Whenever possible, focus group participants were individuals within the same general "rank," within the hierarchy of an organization. Focus group sessions were held on three separate days and in two separate locations: Monday and Wednesday, October 23 and 25, 2006, at the Cloquet Forestry Center, Cloquet, Minnesota; and Wednesday, November 1, 2006, at the University of Minnesota, St. Paul campus.

All focus group sessions fell within the target size of fewer than ten people as suggested by Krueger and Casey (2000). With the exception of extension foresters, in which five attended, all focus groups consisted of nine or ten individuals. The length of each session was approximately two hours. The selection of dates, times, and locations were based on the characteristics and availability of participants. Focus group sessions were recorded using personal notes, flipcharts, and an audio/voice recording device. Following the completion of each session, all recorded focus group materials (flip charts, digital voice recordings, and transcribed discussion summaries) were obtained and stored in a secure location in preparation for subsequent analysis of focus group data.

The audio recording of each focus group session was transcribed onto notebook paper. To protect the confidentiality and anonymous identify of focus group participants, the transcription focused on the information generated through discussion rather than "who said what." No attempt was made to connect taped or written statements to any participant during the results write-up. The transcriptions were organized into topic lists, themes, categories, and patterns for subsequent focus group analysis.

Results

The results of the focus group sessions yielded important information about northern Minnesota family forest owner attitudes and perspectives on forestland

certification as viewed by a range of professional foresters who regularly interact with this clientele. Focus group participants identified a typical northern Minnesota family forest owner as a middle-aged male who hears about professional forestry services available to him primarily by word-of-mouth (i.e., neighbors, friends, relatives). Foresters generally first make personal contact with family forest owners after receiving an initial telephone call from the landowner. The initial inquiry may range from information about general services provided by the agency/business/organization to questions regarding financial assistance programs available for forest management. Landowners that forestry professionals work with are usually outwardly motivated to do the "right thing" on the land. The average landowner is unlikely to actively manage their land unless a convincing economic incentive is provided or they are interested in wildlife management. This is especially true with smaller parcels.

Focus group participants indicated the topic of forest certification rarely comes up in conversations with landowners, except when initiated by industry foresters. As a result, participants identified few questions landowners have about forest land certification. When landowners do ask about certification, industry and extension foresters were able to provide the most amount of information to landowners relative to the other categories of focus group participants. Focus group participants had varying opinions about the need for forest land certification – some felt certification was necessary and others did not. Regardless, many participants viewed certification as having close ties with commercial timber harvesting (especially clearcutting) and felt it does not closely align with the primarily wildlife/recreation/aesthetic values of the average family forest owner. Many participants did not have the perspective that a considerable number of the state's family forest owners would be interested in certifying their forest land, even if their overall awareness of certification opportunities increased. Participants were not surprised that most characteristics of family forest owners who actively manage their forestland do not translate to an increased likelihood of having their forest certified.

Participants in all four focus groups felt landowners currently enrolled in a forestry-related organization, association, or cooperative are more likely to certify their forest versus other family forest owners. However, focus group participants did not agree on a single common characteristic of a landowner most likely to certify. Commonly cited characteristics were family forest owners who use their forestland for fiber production (i.e., timber management and harvests) and have more available time and money versus the average family forest owner.

Focus group participants identified several current barriers to family forest owner certification. Barriers identified include confusing certification systems and application processes, lack of value-alignment (i.e., messages about certification don't talk about improved wildlife habitat, there isn't an economic incentive), increased workload (on the part of the forester), high costs relative to financial benefits, and the need for certifying small forest land parcels. Focus group

participants felt that the most important changes that need to be made to increase family forest owner interest in forest certification are the availability of meaningful economic incentives and a shift in advertising messages from forest management to wildlife management. Additionally, focus group participants felt forest certification needs to be tied-in with other existing forestry-related assistance tools such as the Forest Stewardship Program or Sustainable Forest Incentive Act in order to minimize the additional work associated with forest certification enrollment. Finally, extension foresters identified the need for a framework to effectively recruit and deliver services and information to family forest owners interested in a forest certification program.

Objective 2. Develop a Pilot Project for Group Certification[ii]

Aitkin County Soil and Water Conservation District

In 2006, an MOU was signed with the Aitkin County Soil and Water Conservation District (Aitkin SWCD) to explore development of a group certificate for landowners in Aitkin County that would meet the third-party certification requirements of the Forest Stewardship Council (FSC). Dovetail Partners assisted the Aitkin SWCD with preparing certification assessment applications that resulted in four competitive bids from certifiers for the project. The Aitkin SWCD selected a certifier for the assessment and received funding from the Natural Resource Conservation Service to assist with the direct costs of the assessment. The Aitkin SWCD sent an invitation and information mailing to all the landowners in the county with Stewardship Plans (approximately 220) who were eligible to participate. Dovetail and the Aitkin SWCD also hosted an informational meeting for local landowners. A press release was prepared and published in the *Aitkin Independent Age*. Dovetail assisted in the preparation of the documents needed for the certification assessment, including a handbook of standard operating procedures that was approved by the Aitkin SWCD Board in October 2006. These documents serve as templates for other organizations that would like to replicate the project. Dovetail and the Aitkin SWCD completed a preliminary field inspection of the properties applying for certification to identify any management concerns that should be addressed before the audit. The required documentation was submitted to the certifier in November 2006 and the certification assessment was completed in January 2007. The results of the assessment were successful, and the third-party forest management certificate was issued for the Aitkin SWCD on May 7th, 2007. The pilot group that has been certified includes 13 landowners representing 1,574 acres. This approximately tripled the amount of certified family forest land in Aitkin County, but the total is still just more than 2,300 acres. The Aitkin SWCD is actively recruiting additional landowners to join the group.

Industry Partners

Dovetail coordinated with two industry partners who have private forest management (PFM) programs. Dovetail provided a review of one program's management plans in relation to the Tree Farm and FSC standards. Dovetail

worked with the other program to explore how a group certificate for private woodland owners may align with their existing certification requirements.

County Land Departments and Other Regional Organizations
Dovetail contacted and made presentations to organizations throughout the four-county project area that provide forest management services to private woodland owners. Dovetail has engaged the County Land Departments within the target project area, Soil and Water Conservation Districts, and watershed groups, among others. This engagement helped raise awareness of certification opportunities in the region.

Review of the Forest Stewardship Program
Dovetail worked in partnership with the MN Department of Natural Resources to explore opportunities for landowners participating in the Forest Stewardship Program to access forest certification. Dovetail presented information about certification and the LCMR project to the Forest Stewardship Committee in January 2006, and the Committee passed a resolution recommending the Director explore Tree Farm and Forest Stewardship Council (FSC) certification for the Stewardship Program. Letters of support for this recommendation were sent to the Director from several organizations, including the Grand Rapids Area Chamber of Commerce Forestry Affairs Committee. In May 2006, the MN DNR and the Forest Stewardship Committee completed a gap analysis that evaluated the Stewardship Program in comparison to the requirements of Tree Farm and FSC group certification. During the 2007 Legislative session the DNR received partial funding for its request to support the costs of third-party certification for participants of the Stewardship Program.

Statewide or multi-state certification initiatives
Dovetail communicated with Minnesota's representative to the National Association of State Foresters (DNR Division of Forestry Director) to identify additional ways to get family forest certification on NASF's agenda. To date, several states in addition to Minnesota (WI, ME, IN, and MA) have been involved in family forest certification and provide examples of diverse approaches that can be taken. Dovetail has been following these activities to see what trends and approaches may provide value in Minnesota.

Objective 3. Certified Logger Program[iii]

Program Summary

The Minnesota Master Logger Certification (MMLC) program provides added confidence to customers and the public that the person performing a harvest has the education and experience to do the job correctly. It is an independent, third-party audit of a logging business's harvest, safety and business practices. Demand for certified forest resources is increasing. Timber harvested from family

forestland by Minnesota Certified Master Loggers can be marketed to mills and other customers as certified wood.

Program Need

Logger certification is a critical component of sustainable forestry. Without the ability to certify the timber harvested from family forestlands, loggers and mills in Minnesota would be at a disadvantage nationally and globally. Both the presence and success of logging businesses and the primary and secondary forest products industry in this state contribute greatly to our local communities, the state's economy, and forest health.

Support for logger certification within Minnesota's logging community is impressively high. Nearly three-fourths indicated they were somewhat to very likely to certify their logging business if a logger certification program was established. The low level of interest in certification among family forest owners supports the need for logger certification in providing third-party certified resources from family forests.

Minnesota has approximately 15 million acres of timberland. Of that total, 37% is controlled by family forest landowners and these family forests provide an estimated 45% of the timber harvested each year. This presents a significant challenge to the forest products industry. For example, Time Inc. has asked several mills in Minnesota and across the country to meet a target that 80% of the resource going into their product be certified.

Often the only forest management advice a family forest owner receives is from a logger who approaches the landowner to purchase wood. While many loggers are very experienced and have a professional approach to wood procurement, MMLC believes that a well-trained and experienced logger with a broader vision of forestry can provide family forest landowners with sustainable forest management information.

Logger certification has been recognized as a way to independently verify the harvest, safety and business practices of participant loggers against specific standards. Logger certification provides customers and the general public assurances that the person or company performing the job has the education, training, and experience to do the job correctly and that appropriate practices are being implemented.

Many loggers already meet the standards and criteria required for logger certification, but they did not have a way to authenticate that to others. Logger certification provides loggers the opportunity to become certified by independent, third-party auditors and increases the amount of third-party certified wood in the marketplace. Overall, logger certification will "raise the bar" of logging in terms of safety and the on-the-ground application of best management practices.

The MMLC program has been recognized by Time Inc. and Metafore's Environmental Paper Assessment Tool (EPAT) (https://www.epat.org/) as an approved indicator of sustainable forest management certification. This is no small achievement. Only two other logger certification programs in the United States (Maine and Wisconsin) have achieved this recognition.

The EPAT is a paper assessment tool developed to assist paper buyers and paper suppliers in evaluating the environmental performance of paper products. The EPAT was designed and developed by the leading companies that form the Paper Working Group (PWG). The PWG was formed out of the shared goal of increasing the supply and affordability of environmentally preferable paper. The EPAT allows any company to measure their progress toward this goal.

The PWG companies include: Bank of America, Nike, Inc., FedEx Kinko's Office and Print Services, Starbucks Coffee Company, Time Inc., Norm Thompson Outfitters, McDonald's, Toyota Motor Sales, USA, Cenveo, Staples, Inc., Hewlett-Packard Company. Other EPAT Early Adopter Companies include: JCPenney, REI, RR Donnelley, QuadGraphics, The Hearst Corporation, Quebecor World, L.L.Bean, Office Depot and FedEx Corporation. In addition, the Sustainable Forestry Initiative® (SFI) program, which is an internationally recognized forest certification program, has a pilot project underway to develop a framework for recognizing logger certification.

Program Development

A working group which represented the broad forestry community was established in early 2005 to develop the program structure and policies and to set-up the certifying board. The program comprises eight areas of responsibility including "Protection of Water Quality and Soils," "Adherence to Site Specific Harvest and Management Plans," and "Compliance with Regulations Applicable to Logging Operations." Each responsibility area includes 24 performance standards and 138 measurable practices.

A logger participating in the program undergoes an audit of his or her business practices and harvest sites. Independent auditors who have completed training on the MMLC standard conduct field audits of the sites the applicant has harvested within the last 12 months. Based on their findings, the auditors provide the certifying board a recommendation for or against certification. An eight member certifying board, which represents a broad range of forestry interests – including family forestland owners, the environmental community and others review the audits and recommendations and make the final determination on certification. To be certified, a logging business must pass all areas of the MMLC standard on all audited sites.

If a logging business achieves certification, the certification status is good for three years. During that time, all of the logger's sites are subject to random

review and audit. To date, 43 logging businesses have been certified as "Minnesota Certified Master Loggers" and another 6 logging business are at various stages of the application process.

Program Results

Minnesota Certified Master Loggers are able to provide certified timber from family forestland to the marketplace. *Using recent data, these 43 logging businesses are able to provide certification to 9.8% of the fiber harvested from family forestlands.* While this may seem small to those unfamiliar with the challenges associated with certifying timber harvested from family forestlands, this number would have been zero a year ago. This is a valuable source of certified wood for mills contracting with these loggers. Further, this number is actually quite impressive when you consider that less than .001% of family forestland in Minnesota has been third-party certified (Kilgore 2005) despite aggressive efforts to do so.

MMLC audit findings and the Forest Management Guideline Monitoring conducted by the Minnesota Department of Natural Resources verify implementation is high and the MMLC recertification and interim audits will be able to provide data related to continuous improvement.

Additional program information and copies of the program documents are available on the MMLC website at www.mlep.org/mmlc.htm or by contacting the MMLC office.

Accomplishments

- Organized formal working group; September 2005
- Developed program standard, procedures and documents; October 2005
  - MMLC Standard
  - MMLC Business Practices Audit Form and Summary Report
  - MMLC Field Audit Form and Summary Report
  - Certification program comparison matrix
  - MMLC Application Release Form
  - MMLC Conflict of Interest and Confidentiality Policy
  - Sample harvest plan
- Established the MMLC Certifying Board; October 2005
- Secured endorsement from Time Inc. for the Minnesota Master Logger Certification program; November 2005
- Designed MMLC Logo; February 2006
- Recruited and trained 17 MMLC field auditors through the MMLC Auditor Training Program; March 2006
- Conducted 149 field audits and 44 business management audits; 2006-2007
- Certified 43 logging businesses as "Minnesota Certified Master Loggers"; 2006-2007

- Presented MMLC program at the Sustainable Forestry Initiative® (SFI) Annual Meeting in Toronto, Ontario; October 2006
- Governor Pawlenty Recognizes "Minnesota Certified Master Loggers" during state capitol recognition ceremony, January 31, 2007
- Initiated review of 6 new MMLC applicants; June 2007
- Delivered 31 presentations to stakeholders (landowners, loggers, mills, policy makers) regarding the value of the program and importance to the forest products industry; 2005-2007

MMLC Applicant Demographics

Program applicants varied in size and type of operation from a smaller hand felling operation to larger multi-crew mixed operations.

Annual Harvest Volume by MMLC Applicants

20	applicants had an annual harvest of >15,000 cords
9	applicants had an annual harvest of 10,001-15,000 cords
5	applicants had an annual harvest of 5,001-10,000 cords
5	applicants had an annual harvest of 2,501 - 5,000 cords
3	applicants had an annual harvest of 1,000 - 2,500 cords
2	applicant had an annual harvest of <1,000 cords

Type of Logging Operation by MMLC Applicants

10	Cut to length
24	Conventional
1	Hand-felling
9	Mixed operations (two mixed conventional/hand-felling, one mixed conventional/cut to length)

Audit Activity

A total of 149 field audits and 44 business management audits were conducted to asses the harvest operations and practices of 44 logging businesses. The audits were conducted by eight different field auditors. MMLC Field Auditors must have a four year degree in forestry, complete MMLC field auditor training, maintain confidentiality and avoid conflicts of interest. The sites audited represented the following ownership:

Field Audits Sites by Ownership

82	Family forestland (Non-Industrial Private Forest - NIPF)
30	State land
26	County land
3	USFS land
0	Tribal land
8	Industrial land

Family forestland distribution

8 applicants had no NIPF sales listed.
7 applicants had 1 NIPF sale listed.
6 applicants had 2 NIPF sales listed.
2 applicants had 3 NIPF sales listed.
5 applicants had 4 NIPF sales listed.
3 applicant had 5 NIPF sales listed.
4 applicant had 6 NIPF sales listed.
4 applicants had 7 NIPF sales listed.
1 applicants had 8 NIPF sales listed.
0 applicants had 9 NIPF sales listed.
2 applicants had 10 NIPF sales listed.
1 applicant had 15 NIPF sales listed.

Audit Findings

In general, auditors were able to verify that appropriate business management and harvest practices were being implemented. However, the audits identified some practices where applicants received minor non-conformance (MNC) or serious non-conformance (SNC) ratings. It is important to note that some of the practices included in the MMLC Standard were new expectations and many of the sites that were audited had been harvested before the MMLC Standard was implemented.

During the recertification and random compliance audits, auditors will pay special attention to these practices and the certifying board expects to see that improvement has been made. Further, the same will be true for any practices where audit findings for a specific company revealed a MNC or SNC.

Continuous Improvement Areas

The following are practices in *common* that provide an opportunity for improvement.

Area One

I-B.1 RMZ's are properly established and marked on the sale site.

Area Three

III-D.1 Harvest operations disperse slash on site (rather than piling slash) where dispersal does not conflict with management objectives or reforestation.

Area Four

IV-A.2 Check with county to ensure property taxes have been paid before any cutting begins.

Area Five

V-A.1 Harvest plan is required for properties with less than 100 contiguous acres.

V-B.1 Contract agreement is signed by both the seller and purchaser.

V-B.2 Contract includes the basic categories of an acceptable timber sale contract

V-B.3 Harvest plan/contract includes a sale map identifying the cutting area, cutting specifications, and pertinent operational requirements and restrictions.

V-B.4 Harvest contract includes landowner verification of legal ownership of property and timber.

Area Six

VI-A.2 Subcontractor contracts are honored, contract has been completed, and payments are timely, up-to-date, and complete.

Global Recognition Pilot Project

The Sustainable Forestry Initiative® (SFI) program, which is an internationally recognized forest certification program, has a pilot project underway to develop a framework for recognizing logger certification. The goal of the project is to be able to provide SFI certification to the timber harvested by certified loggers from family forestland. The MMLC program has been reviewed by SFI staff and is a part of the pilot project being developed for the Sustainable Forestry Board's (SFB) consideration. The SFB is the governing body of the SFI program.

Publicity Materials and Activity

- "Area Logging Businesses Recognized by Gov. Pawlenty, The Timberjay (Tower, MN), Farmers Independent (Bagley, MN) and Independent Age (Aitkin, MN), February 2007
- "Minnesota's First Third-Party Audited Logging Businesses Certified", SFI Monthly, January 2007
- "Governor Pawlenty Recognizes "Minnesota Certified Master Loggers", IATP Community Forestry Resource Center, February 2007
- "Do You Own Land? A Trained, Professional Timber Harvester Can Help You Accomplish Your Land Management Objectives" North Star Expo publication, September 2006
- Governor Pawlenty recognizes "Minnesota Certified Master Loggers", MMLC press release and photo, January 30, 2007
- Recognition ceremony invitation
- MMLC Logos
- Logger and landowner marketing efforts

- MMLC Advertisements:
    - Minnesota Deer Hunters Association – Whitetails magazine (Spring 2007)
    - BetterForests magazine (Winter/Spring 06-07)
    - Northern Wilds newspaper (Spring 2007)
    - Associated Contract Loggers and Truckers of MN's Update magazine (Jan/Feb 2007)
    - Minnesota Timber Producers Association's Timber Bulletin magazine (Jan/Feb 2007 and Mar/Apr 2007)
- MLEP Newsletter
- Photos

Future Opportunities / Unmet Needs

The actual cost to certify a logger is in the range of $2,500 - $3,500. Currently, loggers pay an application fee of $350. This amount was determined using other models and a study which looked at the willingness of loggers to pay (Kilgore 2005) for certification. The program has been able to make up the difference through financial support from grants and industry funding. However, we realize we cannot continue to rely on grant funding to provide such a significant amount of our income.

At this time, the MMLC program is developing a long-term, sustainable financial strategy for MMLC. Such a model will likely recommend a funding mix from applicants, MMLC logging businesses, industry and state funding. It would be unrealistic to expect the program to be financially sustainable through the certification fee alone. We are also working with the Wisconsin Master Logger Certification program to explore opportunities to coordinate efforts and other ways to minimize costs.

Several other unmeet needs have been identified which are integral to the program's future success, value and credibility. Those needs include calibration training, focus groups and chain of custody certification.

Calibration training for MMLC field auditors and certifying board members

In March of 2006, the MMLC program conducted field auditor training (Figure 1). Since that time, several questions and discussions with field auditors and the certifying board have ensued regarding appropriate protocols for measuring and interpreting the MMLC standard. The MMLC Certifying Board has determined that a refresher protocol and calibration training would be beneficial to both field auditors and the certifying board.

Focus groups with Minnesota Certified Master Loggers and Stakeholders

The future success of the program will be determined by the market. Ensuring that the MMLC program provides value to participants is a key way to ensure continued participation. The MMLC program is proposing to hold several focus groups with the current Minnesota Certified Master

Loggers and key stakeholders to identify opportunities to add further value as well as to improve the program.

Chain-of-Custody certification

The MMLC program has been encouraged by mills and land management agencies to explore securing a group chain-of-custody certification for MMLC participants. Chain-of-Custody certification is the process of tracking and recording the possession and transfer of wood and fiber from the forests of origin through the different stages of production to the end user. Providing chain-of-custody certification would add additional value to the program in responding to customer needs and expectations.

Conclusion

In summary, this effort has been nothing short of a success (Figure 2). Certifying 43 logging businesses exceeded our expectations and never would have been possible without the funding we received through the Legislative Commission on Minnesota Resources. The MMLC program is recognized as a model program for logger certification nationally. Provided the financial challenge outlined in this report, it is imperative that this challenge be discussed and addressed by all stakeholders in order to continue to provide logger certification in Minnesota.

Figure 1. MMLC Field Auditor Training – March 24, 2006

Figure 2. MMLC recognition ceremony with Governor Pawlenty – January 31, 2007

Objective 4. Informational brochure to provide certification options[iv]

Introduction

Family forest landowners in northern Minnesota lack an extensive understanding of forest certification, which affects their attitudes about and interest in pursuing forest certification. In a recent survey in northern Minnesota, 53% of the family forest landowners had never heard of forest certification prior to receiving the survey. Another 27% of survey respondents had only a minimal understanding of forest certification (Kilgore et al., 2005).

Information was needed to determine under what conditions forest certification education can increase positive attitudes and intention to certify forestlands. In the recent survey of family forest landowners in northern Minnesota, there was not a statistically significant relationship between familiarity with forest certification and likelihood of wanting to certify their land. However, there have been several encouraging cases where education leads to greater knowledge and positive attitudes about natural resources issues.

Educational messages tailored to the concerns of family forest landowners are expected to be more effective than other messages. Forest certification concerns can be gleaned from the recent survey and focus groups conducted in northern Minnesota regarding forest certification. Landowner concerns about forest certification center on a lack of control and perceived benefits (Kilgore et al., 2005). Therefore, the educational materials developed to increase knowledge, attitudes, and intention to certify included two separate tailored messages. One brochure focused on messages about landowner control and the other focused on the many potential benefits from forest certification.

The critical questions addressed by this component of the project were:

1. What are forest landowner preferences for forest certification education outreach efforts?
2. Can family forest landowner knowledge about forest certification be increased through an education outreach effort?
3. Will education affect attitudes and interest in forest certification?
4. What type of message about forest certification will be most effective in encouraging positive attitudes and interest in certifying forest land?

This study featured two distinct phases (Figure 3). In the first phase, focus groups were conducted with family forest landowners. The goal of the focus groups was to gather information on educational preferences in order to develop the question items and educational materials for phase two. Using information from the focus groups, educational forest certification brochures were developed with two distinct tailored messages. Baseline information was collected in the pre-education survey and then a post-education survey was administered after participants read the educational forest certification brochures. Short-term changes in knowledge and attitudes were then evaluated. The goal of both the focus groups and survey were to lead to a more effective educational effort.

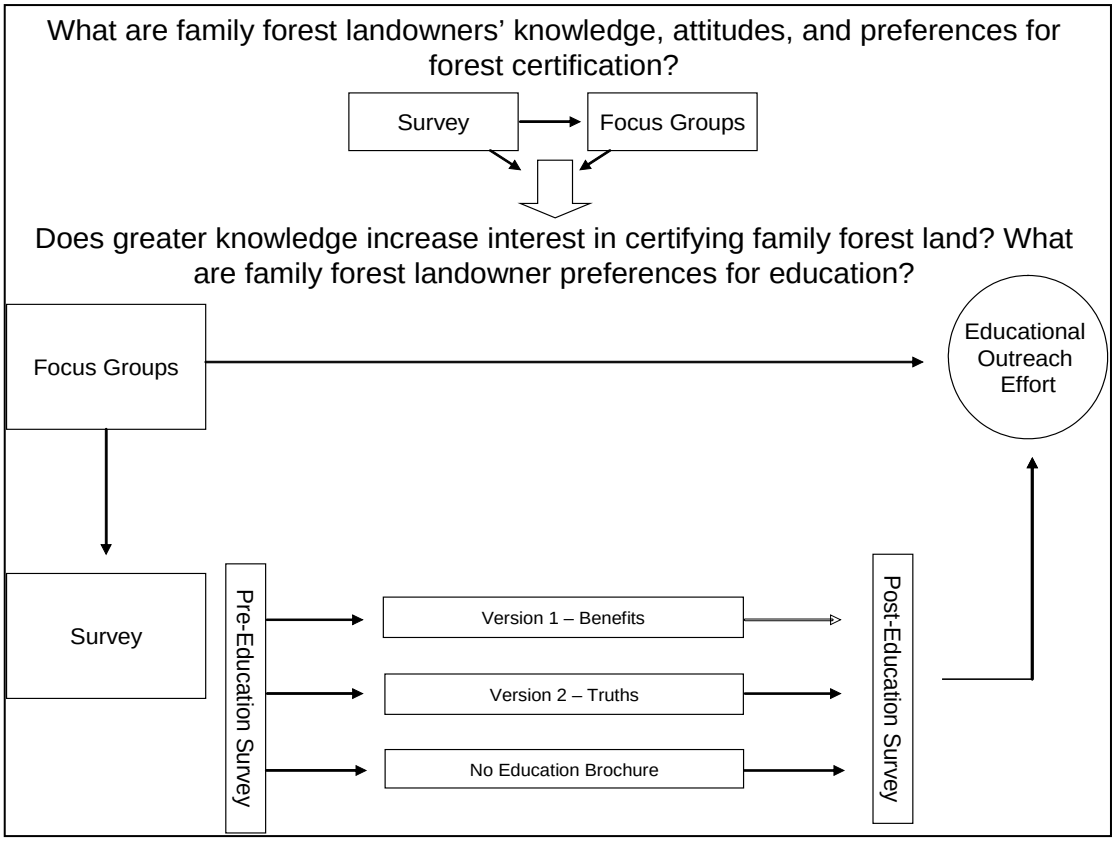

Figure 3. Research Design

Phase I: Focus Groups with Minnesota Family Forest Landowners

Purpose

The focus groups were conducted in Spring 2006 with landowners in five communities covering forest landowners in the four target counties. The objectives of the focus groups were to:

- Identify what family forest landowners want to know about forest certification.
- Identify what family forest landowners want to know about general forestry topics, beyond forest certification.
- Examine what content and information presentation family forest landowners perceive as most appealing regarding certification.
- Develop an understanding of outreach formats that would encourage Minnesota's family forest landowners to learn more about certification.

Methods

Focus group meetings were held in Aitkin, Cass, St. Louis, and Itasca counties, and also with owners of property in those counties who reside in the Twin Cities metropolitan area. Minnesota state tax records were used to select a random sample of landowners in each of the four counties. Landowners were contacted by phone, presented with a brief explanation of the study, a free meal, and asked to participate. Initially participants were asked to volunteer to participate. A low agreement rate led to the addition of an honorarium for participating. This improved the agreement rate. Telephone contacts continued until a minimum of 12 participants agreed to participate in each of the eight focus group meetings (Table 5). Consenting participants were sent an information package in the mail, and received a reminder phone call the day prior to their scheduled focus group meeting.

Table 5. Time and location of eight focus group meetings.

	City	**Date**	Time (PM)
1.	St. Paul	6th	4-6
2.			7-9
3.	Grand Rapids	7th	4-6
4.			6-8
5.	Brainerd	8th	6-8
6.	Virginia	9th	6-8
7.	Duluth	9th	4-6
8.			6-8

Focus Group Questions

To facilitate discussion, two draft brochures were created as prototypes of the educational material to be used in outreach efforts. The draft brochure content was selected based on findings from previous research by Kilgore et al. (2005), using input from expert faculty and existing materials gathered from certifying organizations. Five focus group questions were designed to meet the project objectives. While these questions related to the brochures, they served to facilitate discussion regarding educational preferences related to forest certification. The questions were:

1. What are your general impressions of the brochures?
2. What information was missing that you still have questions about?
3. From the list of benefits which one would be most important to you? Why?
4. Which brochure do you prefer? Why?
5. How would you like to learn about certification in terms of format?
6. What additional forestry topics would you like to learn about?

Participant Survey

Focus group participants were asked to complete a one-page survey following the group discussions. The survey included a scale of forest values, assessments of familiarity with forest certification, and likelihood of becoming certified, and enquiry into their preference for brochure content. The survey also included several demographical questions, including age, occupation, the number of acres owned, the percent of land that is forested, and the length of time individuals have lived on their land.

Findings

Description of the Focus Group Participants

One hundred ten landowners comprising 78 households agreed to participate, and 57 attended the focus group meetings. The number of participants per meeting ranged from three (Brainerd, March 8th) to eleven (St. Paul, March 6th). Acres owned ranged from 11-211, with a mean of 52 acres. Fifty-seven percent of the study participants stated they lived on their land, and approximately half have lived on their land for 20 years of longer (Table 6). Thirty-seven percent of the study participants were retired, and age ranged from 15-83, with a mean of 56.

Table 6. Years living on land

Years on land	% Participants
1-10	17.9%
11-20	32.1%
21-30	21.4%
31-50	10.7%
50+	17.9%

The most important reasons for owning forestland included protecting wildlife habitat, quiet escape, scenic beauty, investment, hunting, fishing, keeping land in

the family, recreation, and timber production. The majority of the focus group participants were somewhat familiar with the forest certification process prior to attending the focus group. According to the participant survey results, 8.2% of the participants were extensively knowledgeable regarding certification, 61.2% had some knowledge, and 30.6% had minimal knowledge. No participants stated they had never heard of forest certification.

What Family Forest Landowners Want to Know About Forest Certification
The focus group participants voiced many questions about forest certification. These questions help shed light on the thought processes family forest landowners go through in making their decision about certification, and were used to inform the study's mail-out survey. The following five questions were particularly prominent:

1. Restrictions Concerns:
- What does the development of a management plan entail?
- How will developing a management plan change their decision rights on every-day forest-related actions?
- How much land do you need to own to become certified?
- Is certification only for landowners who commercially harvest timber?

2. Control Concerns:
- How does becoming certified change their current management scheme?
- Will becoming certified allow someone other than themselves to make decisions about how best to harvest or conserve their land?

3. Benefit Concerns:
- What are the tangible benefits?
- How, specifically, do family forest landowners benefit from becoming certified?

4. Monetary Concerns:
- What are the initial costs of becoming certified?
- What will be the cost of future inspections?
- Will certifying my land reduce my property taxes?

5. Program Administration Concerns:
- How did forest certification begin?
- Is certification run by the government, by industry, by environmental organizations, or other groups?

6. Concerns about Link between Certification and Ecological Protection:
- How does certifying their land lead to water quality protection?
- How does it lead to wildlife habitat protection?
- How much difference does certifying their land make when their neighbours are not certified?

How to Make Educational Materials about Forest Certification Appealing
A variety of mechanisms were suggested during the focus group meetings to increase the appeal of educational material about forest certification. Most prominent among the suggestions involved the considerations of content selection for education materials, the credibility of designed materials, and the relevance of the material to the family forest landowner population.

Information Content
During the focus group meetings, participants were asked to select which of the draft brochures they preferred and to describe why. The vast majority of participants preferred the brochure that presented benefits, and the reasons for their decision mostly involved the consideration that the information seemed more positive in nature. Participants felt the other brochure, which outlined common misperceptions associated with the forest certification process, seemed defensive. Many of the participants thought that highlighting misperceptions suggested certification organizations have a need to "set the reader straight." A few participants, however, preferred the misperceptions brochure, feeling that they wanted to understand the whole picture concerning forest certification, not only the benefits or positive aspects of the process. They preferred educational material outlining more than simply the positive side.

A question on the participant survey extended the choice of information content by asking individuals to choose between a brochure containing balanced information, combined information, benefits only, or misperceptions only. The combined option included both the benefits and 'truths' associated with certification, and the balanced option included benefits and drawbacks associated with forest certification. The data from this question suggest a clear preference for more information. Participants generally wanted the full-story related to certification – they wanted the benefits, truths, and drawbacks associated with the commitment to certifying their land (Table 7). Participants preferred combined or balanced information over single message approaches.

Table 7. Preference for information provision.

Benefits	Truths	Balanced Information	Combination of Information
18.8%	2.1%	41.7%	37.5%

Credibility of Information
The focus group participants felt by-and-large that the credibility of information regarding certification played an important role in their decision making process. While several considerations pertaining to credibility were mentioned, two comments were particularly prominent among the transcription data:

• University of Minnesota Logo: Participants considered the university to be a credible source of information, and many individuals suggested they would read mail from the university that they would otherwise have thrown away. There was general consensus among the focus group participants that educational outreach information concerning certification would reach more people if it contained the university of Minnesota logo.

• Color Scheme: The draft brochures featured a light yellow background color. Participants noted that the color scheme of the brochures resembled that of the Minnesota Department of Natural Resources. They suggested if a goal is to inform the public that certifying does not mean the government will have greater control over their land, the color scheme should be changed to avoid misperception.

Relevance of Information

A common concern voiced throughout the focus group meetings regards the pertinence of forest certification to family forest landowners. Many felt that certification only suited larger, industrial landowners. Two main suggestions were made to increase the relevance of educational material to family forest landowners in particular:

• More Self-Referencing Information: Participants requested educational material that reaches specifically to their group of landowners. For example, tailoring the information such as this, "If you're a landowner with 10 acres of more of forest…" would help to reach landowners that otherwise may not have realized their eligibility for certification.

• Local/More Official Contact Information: Family forest landowners preferred contact information that they recognized. They wanted to be able to call someone locally for further information. Suggestions of contact information sources were widespread, however, most participants agreed they did not want to call someone they did not know in the Twin Cities for further information on managing their land in Northern Minnesota.

Formats for Encouraging Landowners to Learn More about Certification

The focus group data were rich with suggested formats for educational programs, including:

Websites – Detailed information with links to related sites. Interestingly, the vast majority of participants stated they use the internet regularly.

Programs at local events – Presentations and displays at county fairs, lake association meetings, church meetings, etc. Local events could be effective venues for complete presentations, or simply to have other presenters supply information about certification.

Intensive workshops – Multi-day workshops offering a variety of programs for landowners to pick-and-choose from. These should be held locally, and be well advertised.

One-on-one visits with foresters – Having local foresters visit their land to go for a walk through the forest and suggest possible management options. Participants suggested they want advice from foresters, instead of simply being told what they can or cannot do by certification organizations.

Case studies and testimonials – Literature and contact with other certified family forest landowners. Participants wanted to be able to ask other landowners about their experiences with certification, and about how becoming certified has changed what they do on their land.

Information outreach – Coverage in newspapers, magazines, and community media. Participants suggested a host of options for spreading word about certification. The Minnesota Conservation Volunteer was a particularly popular option for education the public about certification.

Additional Forestry Education Desired

Participants were invited to brainstorm the other forestry education outreach topics they would like to learn about. This list was used to design the survey question about interest in learning about various forest topics. The following non-forest certification topics were mentioned in at least half of the eight focus groups:

- Wildlife and wildlife habitat management
- Tree diseases and pests
- Forest management in general
- Tree planting
- Timber harvesting
- Obtaining a forest management plan
- Water quality
- Wetland management
- Shoreland restoration and protection

Use of the Findings

The findings from Phase I were used to revise the brochures to address as many of the questions generated by participants. However, keeping the brochures short and succinct limited how much detailed information could be included. The informational content was modified based on the focus group participant comments. Furthermore, we kept the University of Minnesota logo and affiliation with the brochures based on the participants' belief in the University to provide highly credible forestry information. We also took the participant comments suggesting we move the color scheme away from the DNR colors (yellow and blue). It was modified to be a yellow background with green accents. We were unable to address concerns regarding who family forest landowners should

contact for more information. Dovetail Partners was the identified source and supported by LCMR to provide this information. Despite participants desiring a more local contact, we were unable to change that in the revised brochures.

Other Uses of the Phase I Findings
Much of the information gained in the focus groups stand alone as valuable pieces of information such as the list of questions regarding forest certification, the other topics of interest for forestry education, and the preferred formats for learning more about forestry. The list of questions about forest certification can be used by forest managers, forestry consultants, and others to understand the key questions and concerns of family forest landowners. People interacting with family forest landowners for the purposes of encouraging certification should know the answers to these questions. Detailed educational materials about certification can be developed using these questions. If true in a larger sample of family forest landowners, the credibility comments suggest that the University of Minnesota should take the lead in forest certification education outreach efforts due to its status as a trusted information source. A long term goal should be to identify local providers of forest certification information.

Phase II: Pre- and Post-Education Survey with Minnesota Family Forest Landowners

Purpose
The purpose of the mail survey was to:

- Gather information about forestry education outreach preferences from a representative sample of northern Minnesota family forest landowners.
- Evaluate whether family forest landowners knowledge can be increased through the use of educational brochures.
- Evaluate whether attitudes and interest in forest certification are affected by additional information about forest certification.
- Compare the differential effects of two different tailored messages (Benefits and Truths) on knowledge, attitudes, and interest in forest certification.

Methods
Brochures with Tailored Messages
The final two brochures created were nearly identical, except for the bottom section on the front page. They both included a brief introduction to forest certification, a list of the required standards for certification, the steps involved, the cost of certification, and contact information for further details. The first brochure (Benefits brochure) provided a list of benefits associated with certification, while the second brochure listed truths to clarify any misperceptions individuals may have regarding the certification process. The possible benefits associated with certification were wide ranging, including improved wildlife habitat, increased timber growth and health, increased water quality protection, balanced timber harvesting with ecosystem health, and support for local community economic development. The list of truths in the second brochure

(Truths brochure) included that decision-making responsibilities related to the land are maintained, the freedom to decide who can harvest the timber is kept, and by certifying, organizations or government agencies have no greater say over what can or cannot be done on the land.

Questionnaires

Minnesota family forest landowners were surveyed, using two different mailed questionnaires, to assess their initial and final opinions about forest certification. One survey was administered prior to receiving the educational brochure, while the post-education survey was administered with either a Benefits brochure, Truths brochure, or no brochure (Control).

The pre- and post-education surveys were comprised of many sections. A section in the pre-education survey asked respondents to answer questions regarding the following:

- Knowledge of woodland stewardship (pre-education),
- Interest in learning about forestry topics (pre-education),
- Credibility of education sources/providers (pre-education), and
- Effectiveness of methods/formats for providing forestry education (pre-education).

Perhaps the most important section involved those related to knowledge and attitudes regarding forest certification. Questions were asked related to:

- Familiarity with forest certification (pre- and post-education surveys),
- Views on forest certification (pre- and post-education surveys),
- Likeliness of certification their forest land (pre- and post-education surveys),
- Possible benefits and drawbacks of forest certification (post-education),
- General attitudes toward forest certification (post-education), and
- Interest in thinking/processing information regarding forest certification (post-education).

A special section was included in the brochure post-education survey that related specifically to the educational forest certification brochures:

- Minutes spent reading the brochure,
- Usefulness of the brochure,
- New information learned in the brochure,
- New ideas thought after reading the brochure,
- Changes in ideas as a result of the information.

Another section in surveys was concerned with gathering details from the respondents about their forest land and forest management. The information collected included:

- Number of acres and parcels of forest land owned in Minnesota (pre-education),

- Absentee owner status (pre-education),
- Number of years forest land has been owned (post-education),
- Importance of economic and non-economic reasons for owning forest land (pre-education),
- Timber harvest history and future plans (post-education),
- Forest management plan status (post-education),
- Enrolment in government programs (post-education), and
- Whether or not a professional forester had ever been consulted (post-education).

Finally, a section of the surveys was concerned with socio-demographic questions. These were:

- Age (pre-education),
- Highest level of education (pre-education), and
- Employment status (pre-education).

Survey Administration

Surveys were sent to a representative sample of 1,600 family forest landowners randomly selected from the population of landowners owning more than 10 forested acres in Aitkin, Cass, Itasca, and St. Louis counties. Names and addresses were acquired from property tax records. Following Dillman's Tailored Design Method (2000), pre-notification postcards, cover letters explaining the purpose of the study were mailed along with the questionnaire, and follow-up reminder postcards and re-mailings of questionnaires to those who had not responded were used to increase the response rate. In the pre-education survey, respondents were asked if they "would be interested in helping us further by reading through an education handout and then completing another short questionnaire?" Those who responded "yes" or "maybe" were assigned to either the Benefits brochure group, the Truths brochure group, or the Control group. Those in a brochure group received the brochure post-education survey along with their respective brochure. The control group received only the control post-education survey. This design allowed for more accurate assessments of the impact of the brochures. For instance, all family forest landowners in northern Minnesota may have gained more forest certification knowledge as the result of media coverage. By having a control group, we know the baseline level of knowledge. Increases above the baseline can be more confidently attributed to the brochures.

A total of 954 completed and useable pre-education surveys were returned from the original 1,600. An additional 105 pre-education questionnaires were returned but not useable for various reasons including the recipient had deceased (8), sold the property (12), was the wrong person (1) or refused to answer the survey (84). Twenty eight participants had expired forwarding order with the post office. The overall response rate to the questionnaire was 67.4%, which is a high response rate for mailed questionnaires. Among the 954 who answered the survey, 206 (22%) were not willing to receive the post-education survey, 247

(26%) said maybe, and 488 (51%) said yes. Only thirteen (1.4%) participants left this question blank.

The post-education survey (brochure or control) was mailed to the 731 individuals who said "yes" or "maybe" they would like to help the study further by reading an educational handout and filling out another short survey. Two hundred thirty eight were in the control group, 241 were in the Benefits brochure group, and 252 were in the Truths brochure group. Both the Benefits and Truths brochure groups had response rates of 61%, while the control group had a response rate of 83%.

Findings

Response Bias Assessments

There are several stages throughout the mail survey that could introduce bias and create a non-representative sample. The characteristics of the pre-education survey respondents mirrored the county and acreage distributions in the tax records (Table 8). This indicates that a representative sample responded to the pre-education survey. Next, we evaluated for a participation bias in those who agreed ("yes" or "maybe") to receive the post-education survey. There did appear to be a participation bias on several indicators. Those who were willing to receive the educational handout and fill out another survey: held larger acreage, more absentee, initially more positive toward forest certification, more likely to want to certify, younger in age, held higher levels of education, and were more likely to be employed full time. However, when we evaluated for an attrition bias (e.g., "Were those who did both the pre-education and post-education survey different from those who just did the pre-education survey?") we found very few statistically significant differences. Recall, also, that the pre-education survey respondents were representative of the larger population. The differences between those who completed both the pre- and post-education surveys and those who completed just the pre-education survey were, in practical relevance, minimal. Those who completed both were older (56 years of age on average vs. 53 years of age on average) and more likely to be retired (34.7% vs. 25.7%). Because of these factors, we believe the participation bias was accounted for and the results can viewed as reasonably representative of northern Minnesota family forest landowners.

Table 8. Distribution of Respondents by County in Original and Returned Samples

County	Original N/ Sample n	Original %/ Sample %
St. Louis	210/149	13.1/13.7
Cass	290/200	18.1/18.4
Itasca	367/254	22.9/23.4
Aitkin	733/484	45.8/44.5
Total	**1600/1087**	**100.0/100.0**

Source: Tax records, Pre-Education Survey.

Respondent Profile

The family forest landowner's who responded to the pre-education survey were largely middle-aged with the highest percentage of respondents in the 50-59 year age bracket (Table 9). Nearly 32% had a bachelor's degree or higher, while slightly less than 28% had only a high school diploma or did not finish high school. Most of the respondents were working full-time for pay, however one third of all respondents were retirees. This matches what one might expect given the ages of the family forest landowners in the sample.

Table 9. Sociodemographic Characteristics of Respondents

Variable		N	Percent
Age	20-29	12	1.3
	30-39	63	6.8
	40-49	186	20.2
	50-59	312	33.9
	60-69	219	23.8
	70-79	97	10.5
	80-89	31	3.4
	Total	**920**	**100.0**
Education	Some High School or less	37	3.9
	High School/GED	225	24.0
	Some College	152	16.2
	Technical/Community College Degree	228	24.3
	Bachelor's Degree	138	14.7
	Some Graduate School	51	5.4
	Graduate Degree	107	11.4
	Total	**938**	**100.0**
Employment	Working	584	61.7
	Retired	318	33.6
	Other	44	4.7
	Total	**946**	**100.0**

Source: Questions 12, 13, & 14, Pre-Education Survey.

Just over half of the landowners who responded to the survey had their permanent residence on their forest land (51%) (Table 10). Seasonal residents accounted for 13% of the respondents, and absentee owners 27% of the sample.

Table 10. Residency Status

Category	N	%
Permanent residence	474	50.7
Seasonal residence	123	13.2
Absentee owner	253	27.1
Other	85	9.1
Total	**935**	**100.0**

Source: Question 2, Pre-Education Survey.

Forest Land and Management Characteristics

Respondents were asked about their forest land ownership. Just under fifty percent of the respondents owned less than 40 acres (Table 11). The median acreage was 40 acres. However, the mean acreage size was 58 acres, reflecting several large acreage landowners. Parcel results were also similar (Table 12). About 65% of the respondents owned just one parcel, and, thus, the median number of parcels was 1. The average number of parcels owned was 2.1 parcels.

Table 11. Acres of forest land owned by respondents

Number of acres	N	%
0 to 9 acres	26	2.8
10 to 19 acres	165	18.0
20 to 39 acres	240	26.1
40 to 59 acres	217	23.6
60 to 79 acres	47	5.1
80 to 99 acres	83	9.0
100 to 199 acres	99	10.8
200 to 299 acres	23	2.5
300 acres or more	19	2.1
Total	**919**	**100.0**

Source: Question 1, Pre-Education Survey. Mean: 58 acres Median: 40 acres

Table 12. Parcels of forest land owners by respondents

Number of parcels	N	%
1	603	64.8
2-3	253	27.2
4-5	38	4.1
6 parcels or more	36	3.7
Total	**930**	**100.0**

Source: Question 1, Pre-Education Survey. Mean: 2.1 parcels Median: 1 parcel

The findings indicated that many of the landowners had owned their property for some time (Table 13). Thirty-five percent of the respondents had owned their forest land for 25 years or more. Owners that had owned their land for five years or less accounted for just about 13% of the respondents.

Table 13. Number of years respondents have owned forested land in Minnesota

Number of years	N	%
One year or less	3	0.7
1 to 5 years	54	12.2
5 to 15 years	100	22.6
15 to 25 years	129	29.2
25 to 50 years	138	31.2
50 years or more	18	4.1
Total	**442**	**100.0**

Source: Question 12T/6C, Post-education Survey, Treatment and Control Groups.

In a series of questions about their forest management, we collected information about the respondent's history and involvement in forest management. It was discovered that only 31% of respondents had sought advice from or had been contacted by a professional forester (Table 14). Eighty-five percent of the respondents did not have written forest management plans (Table 15), and a similar number (87%) had never participated in any kind of government program that assists with land management such as a cost share program (Table 16).

Table 14. Response to "Since owning your property, have you sought advise from/been contacted by a professional forester?"

	N	%
Yes	137	31.1
No	304	68.9
Total	**441**	**100.0**

Source: Question 13T/7C, Post-education Survey, Treatment and Control Groups.

Table 15. Response to "Do you have a forest management plan prepared for your forest land?"

	N	%
Yes	64	14.6
No	346	79.2
Not sure	27	6.2
Total	**437**	**100.0**

Source: Question 14T/9C, Post-education Survey, Treatment and Control Groups.

Table 16. Response to "Have you participated in any government programs to assist you in managing your forest land?"

	N	%
Yes	53	12.1
No	380	87.0
Not sure	4	0.9
Total	**437**	**100.0**

Source: Question 15T/8C, Post-education Survey, Treatment and Control Groups.

Thirty-six percent of the landowners had commercially harvested trees on their forest land while being the owner (Table 17). The most recent harvest had occurred anywhere from within the last year (15%), 1 to 5 years ago (34%), 5 to 10 years ago (30%), to more than 10 year ago (21%) (Table 18). When that harvest was conducted, only 14% followed the Minnesota Forest Guidelines (Table 19). The participants were also asked whether or not the respondent expected to harvest timber from their property in the next 10 years. Respondents leaned toward "no" (50%) and "not sure" (28%) responses, although about 22% of respondents said they did intend to harvest in the next ten years (Table 20).

Table 17. Response to "Have you commercially harvested trees on your forest land while being the owner?"

	N	%
Yes	159	36.3
No	277	63.2
Not sure	2	0.5
Total	**438**	**100.0**

Source: Question 10aT/6C, Post-education Survey, Treatment and Control Groups.

Table 18. Most recent harvest

	N	%
Within the last year	26	14.8
1 to 5 years ago	60	34.1
5 to 10 years ago	53	30.1
More than 10 years ago	37	21.0
Total	**176**	**100.0**

Source: Question 10cT/6C, Post-education Survey, Treatment and Control Groups.

Table 19. Response to "Did you consult Minnesota's timber harvesting/forest management guidelines when you harvested?"

	N	%
Yes	26	14.4
No	134	74.4
Not sure	20	11.1
Total	**180**	**100.0**

Source: Question 10dT/6C, Post-education Survey, Treatment and Control Groups.

Table 20. Response to "Do you intend to harvest trees on your forest land in the next ten years?"

	N	%
Yes	94	21.9
No	215	50.0
Not sure	121	28.1
Total	**430**	**100.0**

Source: Question 10bT/6C, Post-education Survey, Treatment and Control Groups.

The family forestland owners who responded to the survey tended to own their forest land for a multitude of reasons. The top three reasons were non-economic reasons for owning land: to have privacy, to enjoy the scenery, and to provide wildlife habitat (Table 21). Coupled with personal recreation use, these four reasons had more than 50% of all respondents rating these reasons as "very important." The four least important reasons were to preserve family tradition, to leave land unmanaged, letting nature take its course, and income from timber.

Table 21. Importance of reasons for owning forest land

Reasons	N	Mean[a]
To have privacy	922	1.49
To enjoy the scenery	918	1.52
To provide wildlife habitat	924	1.55
Personal recreation	904	1.67
To protect the environment	901	1.86
To protect land from development	897	2.02
As a place to live	906	2.23
To pass on to my children	898	2.30
To preserve family tradition	880	2.56
To leave land unmanaged, letting nature takes its course	874	2.70
Income from timber	865	4.0

Source: Question 3, Pre-Education Survey. [a] Responses based on a five-point scale from 1 (very important) to 5 (very unimportant).

Forestry Education Outreach

The majority of the pre-education survey was dedicated to discovering the forestry education needs and preferences of family forest landowners in northern Minnesota. Very few of the respondents indicated that they had extensive knowledge about woodland stewardship (9%) (Table 22). Close to half of the respondents said they had some knowledge about how to manage their forests. However, 43% combined said they had either minimal or no knowledge of how to manage their forests.

Table 22. Knowledge of woodland stewardship

Knowledge	N	%
Extensive knowledge	82	8.8
Some knowledge	442	47.6
Minimal knowledge	281	30.2
None	124	13.3
Total	**929**	**100.0**

Source: Question 4, Pre-Education Survey.

Landowners were asked to specify their level of interest in a variety of forestry education topics that educational materials and programs could be developed to help them with their woodland stewardship (Table 23). Forest certification was the least popular topic. Only around 8% were “very interested” and 21% were “very uninterested.” Interestingly, forest certification had the high percentage of “not sure” responses (10%), indicating that landowners may be very unfamiliar with forest certification. The respondents were most interested in learning about wildlife habitat, tree pests and diseases, tax laws, and invasive/exotic species.

Table 23. Interest in learning about forestry topics

Forestry Topics	N	Mean[a]
Wildlife habitat management	901	2.02
Tree pests and diseases	900	2.06
Tax laws affecting forest land	887	2.11
Invasive/exotic species	884	2.42
Wetland management	891	2.46
Tree planting	900	2.47
Forest management in general	897	2.49
Recreational trail design	883	2.93
Obtaining a forest management plan	872	2.93
Timber harvesting	887	3.05
Forest certification	806	3.24

Source: Question 5, Pre-Education Survey. [a] Responses based on a five-point scale from 1 (very interested) to 5 (very uninterested).

Despite the findings in the focus groups, the Minnesota Department of Natural Resources received the highest credibility rating (2.15 average on a 5 point scale, with 1 being the highest credibility) among all of the potential educational providers in the state (Table 24). The USDA Forest Service and University of Minnesota were the next highest rated providers. Loggers, environmental/ conservation organizations, and Native American tribes had the lowest ratings. However, the distribution of ratings for these organizations were centered near the neutral point. Among all of the organizations, the "not sure" option was chosen by 12-20% of respondents indicating, perhaps, the limited amount of experience they have with forestry education outreach efforts. In the brochure post-education survey, we asked two follow-up questions aimed specifically at the University of Minnesota's credibility. This was partly because the educational forest certification brochures featured a University of Minnesota affiliation. Seventy one percent of all respondents strongly agreed or agreed that they "respect the University of Minnesota's knowledge of woodland stewardship." There was a less strong response to the statement, "I pay attention to what a University of Minnesota employee has to say about woodland stewardship." To this statement, 42% of respondents strongly agreed (3%) or agreed (39%). Forty-one percent of respondents said they were neutral.

Next, respondents to the survey were asked to rate their agreement regarding a list of methods or formats for providing forestry education information (Table 25). The top four methods/formats were on-site visits from foresters (e.g., someone to "walk the land" with the landowner), brochures/booklets/fact sheets, magazine/ newsletters, and websites. Very few landowners disagreed or strongly disagreed with the effectiveness of the methods. However, the neutral ratings were fairly high (36-43%) for a large number of methods or formats, including self-study courses, workshops, demonstration forests, peer-to-peer landowner programs, conferences and fair booths.

Table 24. Credibility of forestry education providers

				Percent of respondents by response category						
Education Providers	**N**	**Mean[a]**	**SD**	**1**	**2**	**3**	**4**	**5**		**Not sure**
MN Department of Natural Resources	919	2.15	1.0	26.1	33.2	21.7	3.4	3.5		12.2
USDA Forest Service	906	2.36	1.0	18.5	30.6	27.6	4.3	4.4		14.6
University of Minnesota	906	2.45	1.0	14.0	30.0	31.7	4.0	4.1		16.2
Soil & Water Conservation District	902	2.58	0.9	9.6	28.9	35.6	6.5	3.2		16.1
Forestry consultants	896	2.65	0.9	8.7	22.9	39.5	5.7	3.3		19.9
Cooperative Extension Service	903	2.70	0.9	7.4	21.8	40.3	6.2	3.2		21.0
Forest industry	903	2.72	1.0	8.9	24.8	37.5	7.6	5.6		15.5
Other forest landowners	900	2.75	0.9	6.1	24.3	41.4	8.6	3.4		16.1
Environmental learning centers	903	2.76	1.0	7.5	22.9	38.6	8.5	4.9		17.5
County government	908	2.82	1.0	7.0	22.8	39.4	9.8	5.9		15.0
Loggers	909	3.00	1.1	7.4	20.6	35.5	11.7	10.0		14.9
Environmental/conservation organizations	898	3.08	1.1	5.3	17.0	37.1	10.2	11.9		18.4
Native Americans tribes	906	3.24	1.1	5.7	11.0	35.2	13.2	14.3		20.4

Source: Question 6, Pre-Education Survey.
[a] Responses based on a five-point scale from 1 (strongly agree) to 5 (strongly disagree).

Table 25. Effectiveness of forestry education methods

			Percent of respondents by response category						
Forestry Topics	**N**	**Mean[a]**	**1**	**2**	**3**	**4**	**5**		**Not sure**
On-site visits from foresters	905	2.16	30.8	26.6	25.6	2.7	4.8		9.5
Brochures/booklets/fact sheets	914	2.20	22.3	38.6	25.8	3.1	2.8		7.3
Magazines/newsletters	909	2.35	16.4	37.2	31.7	3.3	3.3		8.1
Websites	898	2.42	16.6	32.9	30.1	5.1	4.5		10.9
Self-study courses	902	2.45	13.3	33.3	35.8	4.8	2.8		10.1
Workshops	898	2.51	13.7	28.8	36.1	4.7	4.3		12.4
Demonstration forest tours	897	2.61	12.0	24.5	39.5	6.7	4.1		13.2
Peer-to-peer landowner program	899	2.71	8.1	24.1	42.9	7.6	3.7		13.6
Conferences	896	2.74	7.5	25.2	43.2	5.8	5.8		12.5
Fair booths	903	2.78	8.4	22.5	43.4	9.0	5.5		11.2

Source: Question 7, Pre-Education Survey. [a] Responses based on a five-point scale from 1 (strongly agree) to 5 (strongly disagree).

Forest Certification Knowledge, Interest, and Attitudes

Extensive familiarity with forest certification among the family forest landowners that completed the survey was not high (Table 26). A large percentage of respondents (45%) had never heard of forest certification prior to receiving this survey. Another 32% of the respondents reported a minimal understanding of forest certification. Seventeen percent of respondents rated themselves as having some understanding, while only about 3% of the respondents indicated they had extensive understanding of forest certification.

Table 26. Familiarity with forest certification

Familiarity	N	%
Extensive familiarity	26	2.7
Some familiarity	163	17.2
Minimal familiarity	298	31.5
Never heard of it	425	44.9
Not sure	34	3.6
Total	**946**	**100.0**

Source: Question 8, Pre-Education Survey.

Respondents were also asked their general view (positive or negative) toward forest certification (Table 27). Forty-three percent of respondent felt they couldn't answer the question and selected the "not sure" option. Of those who could place themselves on the scale, 32% were "somewhat positive." Although small in number, more respondents were "very negative" (7%) than "very positive" (5%).

Table 27. View on forest certification

View	N	%
Very positive	45	4.8
Somewhat positive	305	32.4
Somewhat negative	121	12.8
Very negative	67	7.1
Not sure	404	42.9
Total	**942**	**100.0**

Source: Question 9, Pre-Education Survey.

The results showed that a small percentage of family forest land owners were very likely to have their forest land certified (2%) in the pre-education situation (Table 28). However, like previous studies have found, there were large concentrations of respondents that could be considered in the "persuadable" category. Twenty-five percent selected the category, "I may want my forest land certified but need additional information before deciding" and another 37% selected the category, "I am not likely to certify my forest land, but could change my mind." About one in five family forest landowners indicated they would never want their forest land certified (19%).

Table 28. Likeliness to have forest land certified

Likeliness	N	%
I am very likely to have my forest land certified	16	1.7
I may want my forest land certified, but need additional information before deciding	234	24.9
I am not likely to certify my forest land, but could change my mind	343	36.5
I am certain I will never want my forest land certified	183	19.5
Not sure	163	17.4
Total	**939**	**100.0**

Source: Question 11, Pre-Education Survey.

Respondents were asked to rate the importance of six different possible benefits and possible drawbacks of forest certification. Improved wildlife habitat, increased timber growth and productivity, and environmentally-sound timber harvesting were the top three benefits the respondents believed were important benefits associated with forest certification (Table 29). Respectively, 89%, 80%, and 63% of respondents said these were either "very important" or "important" benefits. This compares to only 32% of respondents who said a price premium, 31% who said expanded markets, and 29% who said public recognition of good forestry practices were "very important" or "important."

Table 29. Importance of possible benefits that can be associated with forest certification

Possible benefits	**N**	**Mean[a]**
Improved wildlife habitat	430	1.63
Increased timber growth and health	427	1.93
Use environmentally-sound timber harvesting/ forest management practices	423	2.37
A price premium for forest products harvested	416	3.11
Expanded markets for forest products harvested	422	3.12
Public recognition for practicing good forestry	424	3.23

Source: Question 8T/4C, Post-education Survey, Treatment and Control Groups.
[a] Responses based on a five-point scale from 1 (very unimportant) to 5 (very important).

We also asked the respondent to rate their perceptions of drawbacks associated with forest certification existed (Table 30). The mean average rating for all of the possible drawbacks ranged between 3 (neither unimportant nor important) and 2 (important). None of the drawbacks had a mean score in the "very important" range. Increased costs were the primary concern, followed by concerns about loss of control over which logger cuts the timber, increased paperwork and record-keeping, and loss of control over which kinds of harvests are allowed.

Table 30. Importance of possible drawbacks that can be associated with forest certification

Possible drawbacks	N	Mean[a]
Increased cost of forest management	426	2.09
Less control over who can harvest my forest	418	2.12
Increased record-keeping and paperwork	427	2.18
Less control over the types of timber harvesting practices that can be used	419	2.23
Need to follow a forest management plan	412	2.48
Need for periodic on-site inspections of my forestry practices	423	2.65

Source: Question 9T/5C, Post-education Survey, Treatment and Control Groups.
[a] Responses based on a five-point scale from 1 (very unimportant) to 5 (very important).

The final set of forest certification questions were asked in the post-education survey, and involved both their attitudes towards forest certification, and what they have done to pursue or learn more about forest certification (Table 31). There was not strong agreement with the series of questions that includes, "I see forest certification is important to woodland stewardship," "Forest certification is relevant to my woodland," and "Forest certification is personally relevant to me." Further, the only widely taken action regarding forest certification was to have read about it. Listening, watching, seeing or visiting, or discussing forest certification was not particularly common.

Table 31. Forest certification attitudes and actions

Statements	N	Mean[a]
I have read about forest certification.	229	2.46
I see forest certification as important to woodland stewardship.	223	2.80
Forest certification is relevant to my woodland.	225	3.33
Forest certification is personally relevant to me.	223	3.39
I have listened to something about forest certification.	223	3.42
I have watched something about forest certification.	220	3.66
I have seen or visited forest land that is certified.	191	3.68
I have discussed forest certification with others.	229	3.72

Source: Question 11T, Post-education Survey, Treatment Groups.
[a] Responses based on a five-point scale from 1 (strongly agree) to 5 (strongly disagree).

Evaluating the Effectiveness of the Educational Outreach

Several strategies were employed to evaluate the effectiveness of the educational forest certification brochures. First, we wanted to know how long respondents had spent reading the brochures (Table 32). For instance, differences in the effects of the brochures could be explained by participants in one group spending more time on average reading their brochure than the other group. In this sample, about the

same time was spent reading the brochure in both groups. There was not a statistically significant difference. The mean time was slightly over 9 minutes.

Table 32. Minutes spent reading the forest certification brochures

	Benefits brochure			Truths brochure		
	N	Mean	Std dev	N	Mean	Std dev
Minutes	132	9.41	6.67	126	9.20	6.85

t-test statistic = -0.243, p=0.81

Also, both groups found their brochure useful (Table 33). Seventy-eight percent of respondents with the Benefits brochure and 73% of those receiving the Truths brochure said that their brochure was "very useful" or "somewhat useful." There was not a statistically significant difference in the responses between each group.

Table 33. Usefulness comparison of Benefits and Truths forest certification brochures

	Benefits brochure		Truths brochure		Group differences
Usefulness	N	%[1]	N	%[1]	
Very useful	25	18.7	25	19.7	X^2= 1.342
Somewhat useful	80	59.7	68	53.5	
Neither useful nor not useful	20	14.9	25	19.7	
Somewhat not useful	3	2.2	3	2.4	
Not very useful	6	4.5	6	4.7	

[1] Percent based on total number of respondents in each group (Benefits brochure N=134, Truths brochure N=127). p=0.854

When asked to list the new information they learned from reading the brochures, 33% in the Benefits brochure group and 35% in the Truth brochure group either listed four or more specific items or wrote something along the lines of, "It was all new information to me" (Table 34). Only 10% and 9% of respondents in each brochure group said they didn't learn anything new. There was not a statistically significant difference between responses in the two brochure groups.

Table 34. New information comparison of Benefits and Truths forest certification brochures

	Benefits brochure		Truths brochure		Group differences
Number of New Information Pieces	N	%[1]	N	%[1]	
0 new pieces of information (including none/nothing)	12	10.3	10	9.0	X^2= 0.956
1 new piece of information	47	40.5	48	43.2	
2 new pieces of information	14	12.1	11	9.9	
3 new pieces of information	5	4.3	3	2.7	
4 or more pieces of information (including all/everything)	38	32.8	39	35.1	

[1] Percent based on total number of respondents in each group (Benefits brochure N=116, Truths brochure N=111). p=0.916

Similar numbers were found when respondents were asked to write in new ideas about forest certification that they had as a result of reading the brochure (Table 35). Only around 9% in both groups said they had no new ideas. Over 60% could list at least one new idea about forest certification. There was not a statistically significant difference between the two brochure groups.

Table 35. New ideas comparison of Benefits and Truths forest certification brochures

	Benefits brochure		Truths brochure		Group differences
Number of New Ideas	**N**	**%[1]**	**N**	**%[1]**	
0 new ideas (including none/nothing)	9	8.7	8	9.0	X^2= 0.583
1 new idea	64	61.5	58	65.2	
2 new ideas	27	26.0	19	21.3	
3 or more new ideas (including all/everything)	4	3.8	4	4.5	

[1] Percent based on total number of respondents in each group (Benefits brochure N=104, Truths brochure N=89). p=0.90

As a follow-up, respondents were asked if their ideas about forest certification had changed as a result of reading the educational forest certification brochure (Table 36). Thirty-three percent of those in the Benefits brochure said that their ideas had changed, while 35% in the Truth brochure group said their ideas had also changed. There was not a statistically significant difference in the effects between the two brochures.

Table 36. Idea change comparison of Benefits and Truths forest certification brochures

	Benefits brochure		Truths brochure		Group differences
Idea Change	**N**	**%[1]**	**N**	**%[1]**	
Yes	41	32.5	44	35.5	X^2= 0.241
No	85	67.5	80	64.5	

[1] Percent based on total number of respondents in each group (Benefits brochure N=126, Truths brochure N=124). p=0.69

Up to this point, the comparisons being made were between the two brochure groups. The following series of analyses focused on comparisons between the brochures groups and a control. Recall, the control group completed both the pre-education and control post-education surveys. They received no brochure or additional education about forest certification. Gains in the brochure groups, over and above the control group, can be attributed to the brochure effects. When it came to gains in familiarity with forest certification, nearly 50% of the control group rated themselves as more familiar with forest certification since the time they completed the pre-education survey. However, the Benefits brochure group had 71% of respondents rating themselves more familiar, and the Truths brochure group had a comparable 67%. The results were statistically significant, indicating that both brochures were effective in increasing knowledge about forest certification (Table 37).

Table 37. Familiarity comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control		Group differences
Familiarity	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**	
Less Familiar	6	4.8	4	3.4	26	15.7	X^2=27.154
No Change in Familiarity	30	24.2	35	29.7	62	37.3	
More Familiar	88	71.0	79	66.9	78	47.0	

[1] Percent based on total number of respondents in each group (Benefits brochure N=124, Truths brochure N=118, and Control N=166). p<=0.001

In the pre-education survey, a small number (n=11) of respondents said they were "not sure" how familiar they were with forest certification (Table 38). In the post-education setting, all of them were able to place themselves on the familiarity scale from "some familiarity" to "never heard of it." The small samples were not conducive to statistical testing.

Table 38. "Not Sure" familiarity change comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control	
Familiarity	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**
Some Familiarity	3	75	0	0	1	25
Minimal Familiarity	1	25	2	66.7	3	75
Never Heard of It	0	0	1	33.3	0	0

[1] Percent based on total number of respondents in each group (Benefits brochure N=4, Truths brochure N=3, and Control N=4).

In terms of changed views toward forest certification, differences between the Benefits brochure group, Truths brochure group, and control group were not statistically significant. Eighteen percent of respondents in the control group held more positive views about forest certification without any additional education. With education, the Benefits brochure group had 16% and Truths brochure had 15% of its respondents more positive towards forest certification. The Truths brochure, however, lead to 37% of respondents in that group having a less positive view toward forest certification. The control group and Benefits brochure only witnessed around 20% of respondents becoming less positive (Table 39). In general, the lack of stability in views may demonstrate that family forest landowners have not thought much about forest certification and do not have their opinions firmly decided.

Table 39. Views on forest certification comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control		Group differences
View	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**	
Less Positive View	15	21.1	25	36.8	17	19.3	X^2=7.311
No Change in View	45	63.4	33	48.5	55	62.5	
More Positive View	11	15.5	10	14.7	16	18.2	

[1] Percent based on total number of respondents in each group (Benefits brochure N=71, Truths brochure N=68, and Control N=88). p=0.120

In the pre-education survey, there were over 178 respondents who said they were "not sure" about their views on forest certification. In the post-education survey, it is clear that the educational brochures made an impact. Without any education, over half of the control group continued to indicate they had no opinion about forest certification. This compares to 16% and 20% who remained unsure in the Benefits brochure and Truths brochure groups, respectively. Respondents were better able to "make up their minds" about certification as a result of reading the educational forest certification brochures. Fifty-five percent of the respondents in the Benefits brochure group switched from being "not sure" to "very positive" or "somewhat positive." The percentage was slightly less for the Truths brochure group: 41%. However, the increase knowledge did not always lead to positive views toward certification. Twenty-nine percent of those in the Benefits brochure group, who were "not sure" about their view on forest certification before education, developed "somewhat negative" or "very negative" views toward certification. In the Truths brochure group, 34% of respondents went from "not sure" to "somewhat negative" or "very negative" (Table 40).

Table 40. "Not sure" view change on forest certification comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control	
View	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**
Very positive	5	8.6	1	1.9	4	6.1
Somewhat positive	27	46.6	21	38.9	22	33.3
Somewhat negative	13	22.4	16	29.6	6	9.1
Very negative	4	6.9	5	4.3	0	0.0
Not sure	9	15.5	11	20.4	34	51.5

[1] Percent based on total number of respondents in each group (Benefits brochure N=58, Truths brochure N=54, and Control N=66.

Statistically significant results were found in the likeliness to certify as a result of education about forest certification. An unintended consequence was found. Without education (control group), 15% of respondents were said they were less likely to certify when we resurveyed them. However, the increase in familiarity helped 41% of the Benefits brochure group and 34% of the Truths brochure group decide that they would be less likely to certify after finding out more about forest certification.

Seventeen percent of control group respondents were more likely to certify without education, while only 9% of the Benefits brochure and 12% of the Truths brochure groups were more likely to want to certify (Table 41).

Table 41. Likeliness of certifying comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control		Group differences
Likeliness	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**	
Less Likely to Certify	46	41.4	36	34.0	19	14.6	X^2=23.141
No Change in Likeliness to Certify	55	49.5	57	53.8	89	68.5	
More Likely to Certify	10	9.0	13	12.3	22	16.9	

[1] Percent based on total number of respondents in each group (Benefits brochure N=111, Truths brochure N=106, and Control N=130). p<=0.001

Small sample sizes prevented statistically testing of the changes in respondents that were "not sure" how likely they were to certify in the pre-education (Table 42).

Table 42. "Not sure" likeliness of certifying change comparison between Benefits brochure, Truths brochure, and Control group

	Benefits brochure		Truths brochure		Control	
Likeliness	**N**	**%[1]**	**N**	**%[1]**	**N**	**%[1]**
I am very likely to have my forest land certified	0	0	0	0	2	5.4
I may want my forest land certified, but need additional information before deciding	2	15.4	1	5.6	13	35.1
I am not likely to certify my forest land, but could change my mind	7	53.8	12	66.7	4	10.8
I am certain I will never want my forest land certified	4	30.8	4	22.2	1	2.7
Not sure	0	0.0	1	5.6	17	45.9

[1] Percent based on total number of respondents in each group (Benefits brochure N=13, Truths brochure N=18, and Control N=37).

Building on information gathered from this study about landowner demographics and messaging, a full-color brochure was produced for distribution to family forest owners. The brochure introduces the certification concept; provides clear, direct answers to common questions; and includes points of contact for more information.

Recognizing the diversity of the woodland owner audience and the differences among certification options, the brochure was designed to support all family forest certification options currently available in Minnesota. The brochure was mailed selectively to larger acreage woodland owners, because they have the greatest

potential to increase acreage under certification. The mailing went to owners of 100 or more acres of forest land in the nine northeastern counties of Minnesota. In Aitkin County, where a new framework for family forest certification is in place, the brochure was sent to owners of 40 acres or more.

The mailing was supported by newly expanded content on the University of Minnesota Extension website http://www.myminnesotawoods.org. A feature banner was added to the homepage directing site users to the certification content. Usage statistics will be tracked for the new certification content for several months after the mailing.

Conclusion

During the past two years, this project supported significant efforts to better understand and implement third party certification on private woodlands. The stark reality is that family forest owners currently have little interest in certifying their land, for a variety of valid reasons.

Yet, it is not a situation without hope. The forestry profession and forest land managing organizations were fairly slow to adopt certification when it first became available, but as information and experience accumulated, it is now considered a standard business practice. Many individuals and organizations that work with private woodland owners will continue to provide information about certification, and it will likely become a more accepted practice among these owners.

In addition, new market opportunities may encourage additional certification. There is growing interest in linking forest certification with markets for carbon credits and carbon sequestration. Carbon credit trading requires third-party auditing for verification (like certification) and carbon credits would provide a payment incentive for landowners to participate. There are numerous issues to resolve before such a program could work for family forest owners, but it demonstrates the kinds of ideas that are being discussed that will impact future decision making.

Some additional group certification processes are also possible. This option is appealing because it potentially allows certification of private woodlands without significant extra work or cost to the landowner. The successful effort in Aitkin County can probably be replicated in most northern Minnesota counties. Another option is expanding participation in the American Tree Farm System, which is already recognized by the Sustainable Forestry Initiative, one of two major certifying systems in the US.

Perhaps most appealing of all the options for family forest certification is the Minnesota Master Logger Certification program. The program allows production of certified wood, but with little burden on the land owner other than finding and using a certified logger. In a single year, the program increased the amount of certified wood harvested from family forests to jump from none to nearly 10%. As the program becomes better known and more loggers become certified, this number is likely to jump significantly.

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Doug Anderson	Minnesota DNR, Division of Forestry
Charlie Blinn	University of Minnesota, Department of Forest Resources
Sonia Cairns	Moss Cairns Inc.
Dave Chura	Minnesota Logger Education Program
Jacob Donnay	University of Minnesota, Department of Forest Resources
Kathryn Fernholz	Dovetail Partners
Jacob Frie	University of Minnesota, Department of Forest Resources
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Jessica Leahy	University of Maine
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Bruce ZumBahlen	Minnesota Forestry Association

[i] Work lead by Jacob A. Frie, Michael A. Kilgore, and Charlie R. Blinn (Department of Forest Resources, University of Minnesota)
[ii] Work lead by Kathryn Fernholz (Dovetail Partners)
[iii] Work lead by Dave Chura (Minnesota Logger Education Program), and Jacob Donnay and Jeremy Steil (Department of Forest Resources, University of Minnesota)
[iv] Work lead by Jessica Leahy and Andrea Ednie (School of Forest Resources, University of Maine), Zhao Ma and Mike Kilgore (Department of Forest Resources, University of Minnesota), and Eli Sagor (University of Minnesota Extension)

V. TOTAL LCMR PROJECT BUDGET: $376,000

All Results: Personnel: $ 357,698
All Results: Equipment: $
All Results: Development: $
All Results: Acquisition: $
All Results: Other: $ 18,302

TOTAL LCMR PROJECT BUDGET: $376,000

VI. OTHER FUNDS & PARTNERS:

A. Project Partners:

Mike Kilgore, College of Natural Resources, Univ. of Minnesota; Katie Fernholz, Dovetail Partners; Dave Chura, Minnesota Logger Education Program; Bernadine Joselyn, Blandin Foundation; Eli Sagor, University of Minnesota Extension Service; Doug Anderson, MN DNR – Division of Forestry; Bruce ZumBahlen, Minnesota Forestry Association; Lee Kessler, Minnesota Association of Consulting Foresters; Jessica Leahy, University of Maine.

B. Other Funds being Spent during the Project Period:

C. Required Match (if applicable):

D. Past Spending:

The Blandin Foundation provided $179,000 during 2004-05 for a research project to develop the framework for private woodland certification.

E. Time:

VII. DISSEMINATION:

Significant dissemination will occur during the project through meetings with landowners and landowner organizations, Woodland Advisor and other Extension events, logger and professional manager meetings, Blandin Foundation workshops, University of Minnesota meetings, DNR meetings, etc. A graduate student thesis and several papers are likely. Information will be added to University of Minnesota and other web sites as appropriate.

VIII. REPORTING REQUIREMENTS:

Periodic work program progress reports were submitted December 2005, June 2006, and December 2006. A final work program report and associated products was submitted August 17, 2007.

IX. RESEARCH PROJECTS:

Attachment A: Budget Detail for 2005 Projects **Final**
Revised 6/30/07
Proposal Title: Third Party Certification of Private Woodlands - 09b

Project Manager Name: Robert A. Stine

LCMR Requested Dollars: **$**376,000

2005 LCMR Proposal Budget	**Result 1 Budget:**	**Result 1 Budget: Revised** *(6/30/07)*	**Amount Spent** *(06/30/07)*	**Balance** *(6/30/07)*	**Result 2 Budget:**	**Result 2 Budget: Revised** *(6/30/07)*	**Amount Spent** *(06/30/07)*	**Balance** *(6/30/07)*	**TOTAL FOR BUDGET ITEM**	**TOTAL FOR BUDGET ITEM: REVISED**	**TOTAL AMOUNT SPENT** (6/30/07)	**TOTAL BALANCE** *(6/30/07)*
BUDGET ITEM ESTIMATES	Assist NIPF Landowners with Certification				Monitor the pilot certification framework							
PERSONNELEXPENSES INCL. FRINGE	**118,500**	**128,498**	**128,498**	**0**	**27,000**	**14,508**	**14,508**	**0**	**145,500**	**143,006**	**143,006**	**0**
1.0 FTE Professional forest resource educators - *marketing, education, and technical assistance to loggers and woodland owners (33% fringe) - $59,850*			68,883				6,286					
3.0 FTE Graduate research assistants - *analysis of landowner demographics and attitudes about certification (57% fringe) - $68,650*			59,615				8,222					
Contracts												
Professional/technical - *Application, coordination and monitoring of logger and landowner certification programs and progress*	**145,800**	**155,702**	**155,702**	**0**	**48,500**	**58,990**	**58,990**	**0**	**194,300**	**214,692**	**214,692**	**0**
Educational Material Design & Printing	**29,200**	**5,625**	**5,625**	**0**	**1,000**	**4,002**	**4,002**	**0**	**30,200**	**9,627**	**9,627**	**0**
Travel expenses in Minnesota	**5,000**	**8,675**	**8,675**	**0**	**1,000**	**0**	**0**	**0**	**6,000**	**8,675**	**8,675**	**0**
COLUMN TOTAL	**298,500**	**298,500**	**298,500**	**0**	**77,500**	**77,500**	**77,500**	**0**	**376,000**	**376,000**	**376,000**	**0**

Note: Budget items collapsed into four categories per conversation with John Velin 8/5/05