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# Evaluating Continuing Education Needs and Program Effectiveness Using a Survey of Virginia's SHARP Logger Program Participants

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**Abstract:** Virginia's SHARP logger program is a Cooperative Extension program currently providing training to over 1,500 loggers, foresters, and others. We conducted a mail survey of SHARP loggers to characterize program participants, assess programming needs, and evaluate program effectiveness. Results indicate a diverse group of participants in terms of education and occupation. Responses illustrated a need for diverse continuing education class topics and formats. Sixty-two percent of participants reported making changes to their operation as a result of attending SHARP logger trainings. The most commonly reported changes included improvements in safety and implementation of BMPs for water quality.

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## Introduction

The Virginia Sustainable Harvesting And Research Professional (SHARP) Logger program provides training to loggers, foresters, and other stakeholders on the principles of sustainable forestry, environmental protection, and workplace safety. The SHARP Logger program was created in 1995 as part of the nationwide Sustainable Forestry Initiative<sup>®</sup> (SFI<sup>®</sup>) and became a Virginia Cooperative Extension program in 2002. The program is designed primarily for wood suppliers and meets SFI<sup>®</sup> training requirements. In

order to become a SHARP Logger, participants must complete three 6-hour classes on the following topics: Sustainable Forestry, Logging Safety, and Harvest Planning and Best Management Practices for Water Quality (BMPs). After becoming a SHARP Logger, participants must maintain their status by earning 12 Continuing Education (CE) credit hours every 3 years. To date, over 3,000 individuals have completed the core training to become SHARP Loggers, and approximately 1,500 currently maintain SHARP Logger status.

Thirty-six states in the U.S. have formal logger training programs, and Extension plays an active role in developing and implementing associated training programs (Forest Resources Association, 2009). There is considerable variability among logger training programs, both in operational structure and classes offered (Haworth, Blinn, & Chura, 2007). Virginia Cooperative Extension has been actively involved with program development for Virginia's SHARP Logger program since its inception. In addition to the program coordinator, Virginia's District Forestry and Natural Resources Extension agents play a key role in program implementation.

Individual SHARP logger classes are frequently evaluated, and early programmatic impacts were assessed (Wightman & Shaffer, 2000), but a comprehensive survey of all SHARP Logger program participants has never been completed. The original program was targeted towards logging business owners, but in many cases logging employees, foresters, and others have also completed the program. Current training records do not include information about participants' job category, demographics, or business characteristics, which would be useful when designing CE programs.

A comprehensive survey was conducted in order to gain a better understanding of participants so the SHARP Logger program could target future program development to meet their needs. The mail survey was designed to:

1. Gather information about characteristics of SHARP logger program participants.
2. Assess needs for future logger training programs.
3. Evaluate the effectiveness of current trainings.

## Methods

A two-part questionnaire was developed and mailed during the summer of 2009. The first section of the questionnaire pertained to all participants in the SHARP logger program and contained questions related to participants' demographics, questions related to CE programming needs, and questions designed to gather feedback about the program. The second section of the questionnaire pertained only to logging business owners and measured the operational characteristics of individual logging businesses. The business owner responses highlight the differences in size, productivity, and other operational characteristics of logging operations across Virginia and are reported by Bolding, Barrett, Munsell, & Groover (2010). This article focuses on responses from all participants related to SHARP Logger programming.

The questionnaire was developed by the authors, then underwent expert review, and was revised where necessary to clarify questions. The questionnaire included demographic questions with categorical as well as continuous responses. To assess needs for future trainings, participants were given a list of CE class topics and asked to rate potential topics in terms of usefulness using a scale of 1 to 5 with Very Useful = 1, Somewhat Useful = 2, Neutral = 3, Not Really Useful = 4, and Not at All Useful = 5. Effectiveness of previous trainings were evaluated with questions related to their overall impression of the program and whether or not they have made changes to their operations as a result of attending trainings. Additionally, participants were given the option of writing in answers for open-ended questions to describe impacts and

offer suggestions for improvement.

The four-page questionnaire was mailed in the summer of 2009 to all 1,590 current SHARP logger program participants. The questionnaire was mailed based on the Dillman (2000) method and consisted of a total of four mailings. The series of mailings included a pre-notice letter, a second mailing including the questionnaire and a business reply envelope, a third mailing as a thank you letter and reminder, and the final mailing, which included an additional questionnaire sent to non-respondents.

## Results and Discussion

### Survey Response

Twenty-one of the original 1,590 questionnaires were returned with undeliverable addresses and were removed, resulting in a population of N=1,569. Nine hundred twenty-two of the 1,569 individuals returned the survey, resulting in an adjusted response rate of 59%.

### Age, Gender, and Race of SHARP Loggers

Participant ages ranged from 20 to 80 years, with a mean of 47.6 years and standard deviation of 11.7 years. Basic demographic information indicated that participants are predominantly White/Caucasian males. Ninety-seven percent of respondents indicated they were males, and 95.1% indicated they were White/Caucasian (Table 1). Less than 5% of respondents classified themselves as Black/African American, and Hispanic and Native Americans represented less than 1%.

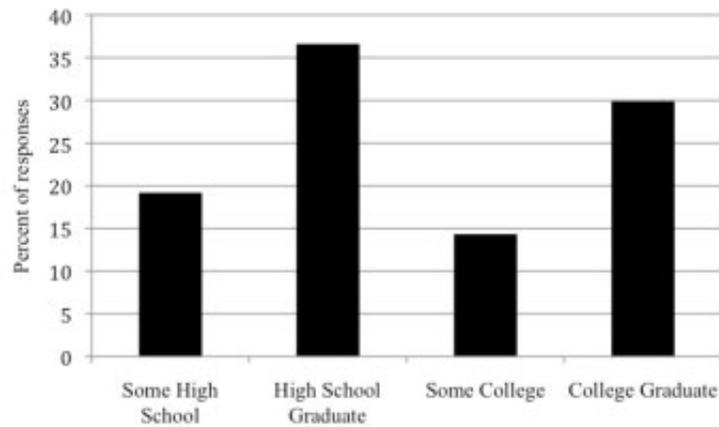
**Table 1.**  
Race Categories of SHARP Loggers Reported as Percent of Responses Received

<b>Race</b>	<b>% of Responses</b>
White / Caucasian	95.1
Black / African American	4.6
Hispanic	<1
Native American	< 1

### Educational Level of SHARP Loggers

Survey responses indicated that SHARP Logger program participants have varied educational backgrounds (Figure 1). Nineteen percent indicated they had not completed high school, while 30 % of participants indicated they were college graduates.

**Figure 1.**  
Education Level of SHARP Loggers, Reported as Percent of Responses Received



## Occupation

Many forest products companies in Virginia require their wood suppliers to maintain current SHARP logger status. The program was originally designed for logging business owners, and, as expected, the majority of participants in the program categorize themselves as the owner of a logging business. However, this is a diverse group, and many participants in the program are not logging business owners. Table 2 includes a breakdown of occupational categories across the respondent group.

**Table 2.**  
Occupational Categories of Participants in the Virginia SHARP Logger Program

Occupation	% of Responses
Logging Business Owner	53.0
Logging Company Employee	12.7
Industry Forester	12.4
Landowner	3.9
Wood Dealer	3.3
Consulting Forester	2.9
Virginia Dept. of Forestry Forester or Technician	2.8
Retired/No longer in Business	1.5
BMP / Site Prep Contractor	1.3
Other	6.2

## Continuing Education (CE) Training Needs

The goal of the SHARP Logger CE program is to offer a variety of training opportunities to meet diverse participant needs. To obtain feedback regarding participant needs, the questionnaire provided a list of potential CE class topics. Topics were developed using suggestions from loggers and foresters, individual program evaluations, and CE programs offered in the past. Average scores and frequency of responses for each class are shown in Table 3.

**Table 3.**  
Frequency and Average Score for Participant Assessment of Potential CE Class Usefulness

Continuing Education Class	Frequency of Reported Scores: 1= Very Useful; 3= Neutral; 5= Not at all useful					Average Score
	1	2	3	4	5	
BMPs for Water Quality (n=878)	58.8%	26.9%	10.0%	2.3%	2.1%	1.620
Stream Crossing Options (n=875)	57.1%	28.9%	8.8%	2.5%	2.6%	1.646
Chainsaw Safety and Felling Techniques (n=873)	59.8%	23.9%	10.7%	2.4%	3.2%	1.653
Equipment Safety (n=866)	56.6%	24.9%	12.7%	2.9%	2.9%	1.706
Timber Cruising (n=856)	44.5%	32.0	15.1%	4.8%	3.6%	1.910
OSHA Regulations (n=864)	41.0%	33.7%	17.5%	4.3%	3.6%	1.958
Trucking Regulations (n=864)	41.3%	33.7%	16.1%	5.1%	3.8%	1.964
Trucking Safety and Efficiency (n=861)	40.2%	32.9%	18.7%	5.1%	3.1%	1.981
Hardwood Log Grading and Merchandising (n=859)	41.1%	32.0%	16.2%	6.8%	4.0%	2.005
Logging Cost Analysis (n=853)	43.3%	25.4%	20.6%	6.3%	4.3%	2.030
Equipment Maintenance (n=859)	41.2%	27.8%	18.4%	8.4%	4.2%	2.065
Business Management (n=854)	36.7%	31.9%	21.1%	5.0%	5.4%	2.107
Insurance for Loggers (n=854)	37.5%	26.7%	22.6%	8.3%	4.9%	2.165
Global Positioning System (GPS) (n=853)	34.8%	26.7	20.2%	10.3%	8.0%	2.299
Biomass Harvesting (n=838)	27.7%	26.5%	29.0%	9.3%	7.5%	2.425
Computer Applications for Loggers (n=849)	16.3%	26.4%	29.3%	16.1%	11.9%	2.810

BMPs for Water Quality received the highest average score, while Computer Applications for Loggers received the lowest. Similar studies in other states have shown that safety, BMPs and regulatory compliance rank high in importance to loggers, while computer classes are typically less important (Egan, 2005; Smidt & Blinn, 1994). Yet even the lowest ranked topic had an average score slightly above neutral, and all topics had over 100 participants that rated them "Very Useful."

## Operational Changes as a Result of Attending SHARP Logger Programs

Survey respondents included both recent program graduates as well as some that have been a SHARP Logger for more than 10 years. Much of the focus of SHARP logger CE classes in the past years has been related to implementation of BMPs for water quality and logging safety. For example, in-woods chainsaw safety and felling demonstrations are frequently offered as a CE class. Other popular classes focus on using GPS units, wildlife management, advanced harvest planning, negotiating skills, and stream crossing options.

Program evaluations conducted by Wightman and Shaffer (2000) used a small random sample of logging contractors who had recently completed the core program and evaluated changes made to their operations as a result of training received in specific portions of the core training. We asked a more general question and also gave participants the opportunity to answer an open-ended question. The questionnaire asked "Have you made any changes or improvements to your operations as a result of attending SHARP Logger Programs?," with Yes or No as possible responses. If they answered yes, we asked them to describe the changes if possible.

Sixty-two percent of SHARP Loggers responded Yes, indicating they made changes, and 457 wrote in specific changes they had made to their operation. Of those 457 write-in answers describing changes made to their operation, some of the most common responses were related to improvements in safety and BMP implementation. Samples of quotes characterizing changes to their operations are listed below.

- Bought chaps and wear PPE [personal protective equipment] when using chainsaw
- Better insured, understand BMPs better, more safety
- Have changed the way we fell trees on the job
- Got workers compensation insurance
- I feel I can fell trees better... (I don't damage big logs like I used to)
- Use open-face bore cut technique for felling trees....never saw it before the class
- Started wearing hard hat and safety glasses
- We do a lot of road planning and weighing options if timber is worth the environmental impact.
- Better placement of roads and log yards for water quality
- I learned to watch for gypsy moth so that they wouldn't spread to other counties or state
- Log Grading and Merchandising--began bringing hardwood logs from local tracts to the yard tree-length and merchandising on the yard
- Use topo maps more in locating decks and roads

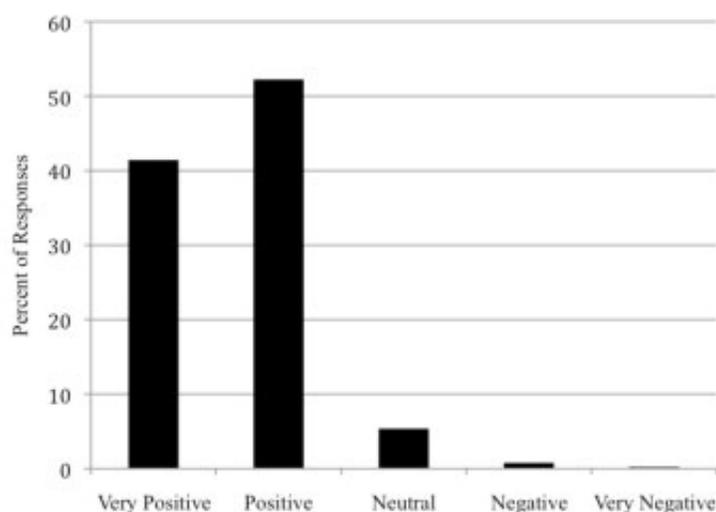
## Overall Impression of the Program

Though participants in the program come from different occupations and attend trainings for different reasons, the majority attend because they are required to maintain SHARP logger status as a condition of

doing business with forest products companies. As with many other logger training programs (Germain & Harris, 2003), SHARP loggers are generally not paid extra for completing training. Given this situation, one concern is that participants may end up having a negative impression of the training because they were required to attend. To assess the participants overall impression of SHARP logger trainings, we asked them to rate the program with the following statement "My overall impression of the SHARP Logger classes I have attended is." Results shown in Figure 2 illustrate that the majority of participants have a favorable impression of the current program format.

**Figure 2.**

Participants Overall Impression of SHARP Logger Programs, in Percent of Responses Received



## Suggestions to Improve the Program

The final question was open ended and asked participants to list suggestions for improving programs. Several common responses are listed below:

- "hands-on" demonstration type classes
- "advanced" type classes building on earlier classes such as GPS and Chainsaw
- more local classes
- classes on evenings and Saturdays
- online classes

## Conclusions

While it may seem as though participants in a program such as the Virginia SHARP logger program would be a relatively homogenous group with similar educational needs, substantial variation within the group of participants results in a need for diverse continuing education programming and variety of training formats. Participants are relatively similar in terms of gender and race, yet have diverse education levels, occupations, and operational characteristics. Most participants indicated a positive overall impression of the current program. Results also indicate that the program is helping to improve logging operations across Virginia as loggers make improvements in safety, water quality, and operational efficiency.

The program is designed primarily for loggers, yet one-third of participants are in occupations other than logging. The diverse group of participants within this program prefer a variety of trainings topics as well as a variety of formats, including daytime, evening, weekend, and online as well as classroom and "hands on" field settings. Similar studies have shown a need for diverse course offerings (Egan, 2005) and illustrated the need to segment within the group (Smidt & Blinn, 1994; Bowe, Smith, Massey, & Hansen, 1999). When working with statewide programs, it is important to realize that training needs can vary substantially. Standardized statewide trainings are appropriate for some topics, but, in many cases, training should be identified and developed to meet local needs and the needs of specific groups or segments of participants within the program.

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