

8-1-2003

## Information Sources and Extension Delivery Methods Used by Private Logleaf Pine Landowners

Rama B. Radhakrishna  
*The Pennsylvania State University, brr100@psu.edu*

Larry Nelson  
*Clemson University, lnelson@clemson.edu*

Robert Franklin  
*Clemson University*

George Kessler  
*Clemson University*



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

---

### Recommended Citation

Radhakrishna, R. B., Nelson, L., Franklin, R., & Kessler, G. (2003). Information Sources and Extension Delivery Methods Used by Private Logleaf Pine Landowners. *The Journal of Extension*, 41(4), Article 12. <https://tigerprints.clemson.edu/joe/vol41/iss4/12>

This Research in Brief is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact [kokeefe@clemson.edu](mailto:kokeefe@clemson.edu).



August 2003 // Volume 41 // Number 4 // Research in Brief // 4RIB3



PREVIOUS  
ARTICLE



ISSUE  
CONTENTS



NEXT  
ARTICLE

## Information Sources and Extension Delivery Methods Used by Private Longleaf Pine Landowners

### Abstract

Reaching forest landowners with useful information has become a challenging task for Extension educators. This task is even more complex when landowners have differing perceptions about the delivery method and usefulness of the information delivered. A study was conducted to determine the preferred educational delivery methods of forest landowners in South Carolina. We found that landowners do have preferences for educational delivery methods and believe educators should consider the preferred methods to maximize program efforts. Further, findings reinforce the need to modify delivery systems to fit the demographic profile of the intended audience and the changes occurring in technology.

### Rama B. Radhakrishna

Associate Professor  
Department of Agricultural and Extension Education  
The Pennsylvania State University  
University Park, Pennsylvania  
Internet Address: [brr100@psu.edu](mailto:brr100@psu.edu)

### Larry Nelson

Extension Specialist  
Department of Forest Resources  
Clemson University,  
Clemson, South Carolina  
Internet Address: [lnelson@clemson.edu](mailto:lnelson@clemson.edu)

### Robert Franklin

Extension Agent  
Department of Forest Resources  
Clemson University,  
Clemson, South Carolina

### George Kessler

Extension Specialist  
Department of Forest Resources  
Clemson University,  
Clemson, South Carolina

## Introduction

Longleaf pine once dominated southern landscapes from southeast Virginia to east Texas. In colonial times the tree occupied as much as 92 million acres (Frost, 1993). Today, less than 3 million acres remain (Outcalt & Sheffield, 1996). In South Carolina, longleaf pine occurred on as much as 7.6 million acres, a figure that declined to just over 1.7 million acres in 1936 and to only 396,000 acres at present (Cecil Frost, personal communication; U.S. Forest Service, 1989; Outcalt & Sheffield, 1996). The decline in longleaf pine forest resulted from development, overexploitation, and a shift in forestry practices. Foremost causes for this decline were the conversion of longleaf forests to agriculture and the development of homesteads, villages, and towns (Franklin, 1997).

Ecologists and many non-industrial forestland owners are interested in restoring longleaf pine to a larger portion of its natural range. The tree is well-known as a producer of quality solid-wood products that command premium prices. It is the most insect, disease, and fire resistant of the

southern pines. Well-managed, fire-maintained longleaf forests provide the best quality wildlife habitat and scenic values of all the southern pines (Landers, Van Lear, & Boyer, 1995). Most important, longleaf is valuable because it is associated with one of the most biologically diverse ecosystems in the Western Hemisphere.

Because 70% of commercial forest land in the South is owned by private landowners, they have become a primary focus of longleaf pine restoration efforts. Reaching landowners with useful information has become a major challenge for Extension educators.

Several researchers have documented the value of various educational delivery methods in effectively communicating information to farmers and other clientele. Fedele (1985) suggested that information delivery is done by a number of methods. For example, print-based information serves the clientele with specific answers to a myriad of topics. Audio-visual methods such as radio and video tapes often provide information without personally involving Extension educators. Mass media delivery methods such as radio, television, and newspapers are used to advertise events, foresee client needs, and report agriculture business information. These methods are used in a variety of ways and in a number of contexts, depending on the needs of the farmers.

Richardson (2001) classified educational delivery methods into three groups: experiential, reinforcement, and integrative. According to Richardson, to promote effective and efficient learning, a delivery system should include methods wherever possible that provide desired experiential opportunities for the learner, reinforce the learning, and provide opportunity for the learner to integrate new information with existing knowledge and skills. Further, Richardson identified several factors that should be considered in the delivery of educational information:

- Target audience,
- Educational objective,
- Type and content of message being provided,
- Characteristics of the delivery method, and
- The method's utility for providing desired learning support.

A host of researchers and educators have examined the perceptions of farmers and other clientele toward delivery of educational information (Suvedi, Campo, & Lipinski, 1999; Trede & Whitaker, 1998; Caldwell & Richardson, 1995; Laughlin & Schmidt, 1995; Gamon, Bounaga, & Miller, 1992). Consensus from these studies suggests that various media and methods are used by Extension educators to communicate new and emerging technologies to farmers.

Findings also indicated that clientele have differing perceptions toward the delivery of information. For example, beginning farmers in Iowa preferred one-on-one, on-site educational meeting and personal contacts (family and neighbors) for information. In addition, farmers preferred radio, newspapers, and television for information. Farmers of highly erodible soils in Iowa identified face-to-face discussion, newspapers, newsletters, and magazine articles as preferred delivery methods. In recent years, however, the use of the Internet in educational programming has increased.

For Extension educators and communicators, it is particularly important to identify and examine the usefulness of each delivery method. Knowledge about the usefulness of delivery methods will not only help to identify the information needs of farmers but also assist in developing educational resources to effectively communicate with farmers and other clientele.

## **Purpose and Objectives**

The overall purpose of the study reported here was to determine the characteristics of longleaf pine landowners in South Carolina and their preferred use of educational delivery methods. The following objectives were developed to guide the investigation.

1. Describe the demographic profile of longleaf pine landowners in South Carolina.
2. Determine sources landowners use for technical and financial assistance.
3. Identify the preferred educational delivery methods that landowners find most useful in receiving information about longleaf pine.
4. Determine relationships, if any, between usefulness of educational delivery methods and demographic characteristics of landowners.

## **Methods and Procedures**

### **Population and Sample**

A list of forest landowners (names and addresses) with land ownership within the natural range of longleaf pine was developed from: (1) the South Carolina Forest Stewardship newsletter mailing list (Department of Forest Resources, Clemson, SC), (2) a list of South Carolina plantations, (3) South Carolina members of The Longleaf Alliance (School of Forestry and Wildlife Sciences, Auburn University, AL), and (4) lists of landowners who owned longleaf pine that were enrolled in industry landowner assistance programs. The combined list was checked for duplication and other errors. The final list consisted of 1,170 forest landowners.

A random sample of 397 forest landowners was selected using computer-generated numbers. The sample of 397 is based on a formula provided by Krejcie and Morgan (1970), with a 5% margin of error and a 4% sampling error.

### Instrumentation

The survey instrument was a questionnaire designed by the researchers. The survey contained four sections. Section one consisted of questions regarding longleaf pine tract characteristics. Section two inquired about technical and financial assistance information. Section three asked about the preferred format of educational delivery methods. Section four requested landowner demographic information (ownership, age, educational level, occupation, income, etc.). Content and face validity of the survey was established by a six-member panel of experts that included two Extension forestry specialists, one Extension agent, two representatives from the Environmental Defense Fund, and an Extension evaluation specialist.

### Data Collection and Analysis

The survey and cover letter explaining the purpose of the study was mailed to members of the sample. After 3 weeks, a total of 121 (30%) landowners had responded. A second mailing, including a revised cover letter and a copy of the survey, was sent to all non-respondents. An additional 134 (34%) questionnaires were returned, for a total data sample of n=255 (64%). The final data sample included 231 useable questionnaires, for a 58% response rate. Twenty-four questionnaires were not useable due to incomplete responses and incorrect addresses.

The data from the 231 responses was coded and analyzed using Statistical Package for Social Sciences (SPSS) for Windows. Early and late respondents were compared on key variables as per the procedures suggested by Miller and Smith (1983). No significant differences ( $p > .05$ ) were found between early and late respondents. Descriptive and inferential statistics were used to summarize the data.

## Results

### Objective 1: Demographic Profile

As shown in Table 1, the majority of respondents (82%) were "individual" landowners, followed by family corporations (8%), partnerships (7%), and other (3%). Over one-half the landowners (54%) were 55 years or older, 27% were between the ages of 45-54, 16% between 35-44, and 3% under 25 years of age. A little over one-third of the landowners (35%) reported bachelor's (college) degree as their highest educational level completed, followed by less than college degree (34%), some college (21%), high school diploma (12%), less than high school (1%), and graduate degrees (31%).

**Table 1.**  
Demographic Profile of Landowners

Item	<i>n</i>	Percent
<b>Land Ownership</b>		
Individual	183	82.8
Partnership	15	6.8
Family Corporation	17	7.7
Other	6	2.7
<b>Total</b>	221	100.0
<b>Age</b>		
Under 35 Years	6	2.7
35 - 44	36	16.3

45 - 54	59	26.7
55 - 64	49	22.2
65 and Over	71	32.1
<b>Total</b>	221	100.0
<b>Educational Level</b>		
Less than College Degree	75	33.9
College Degree	77	34.9
Graduate Degrees	69	31.2
<b>Total</b>	221	100.0
<b>Occupation</b>		
Retired	71	34.1
Forester/Farmer	32	15.4
Engineering	23	11.0
Physician/Dentist	17	8.2
Real Estate/Bank	15	7.2
Self-employed	18	8.7
Attorney	9	4.3
Sales	10	4.8
Management	8	3.8
Others	5	2.4
<b>Total</b>	221	100.0

No single occupation dominated the landowners' primary profession (Table 1). A little over one-third (34%) were retirees. Fifteen percent were in farming and natural resources, 11% in engineering, 8% each were physicians/dentists and self-employed, 7% were in real estate/banking, four to five percent each were in management, sales and legal professions, and 2% in other occupations (Table 1). Twenty-two percent reported income less than \$55,000; 12% earned

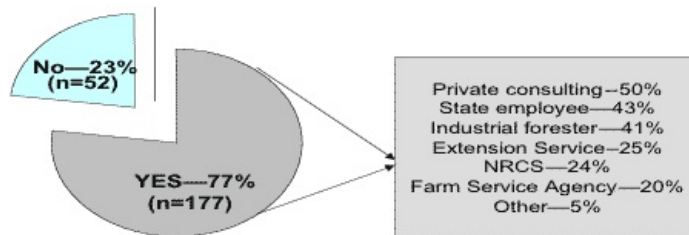
between \$55,000 to \$75,000; 28% earned between \$75,000 and \$115,000, and 38% over \$115,000. A little over one-half of landowners lived on the land they owned (54%), while the remaining 46% lived off-site or were absentee landlords.

Collectively, respondents to this survey owned an average of 581.44 acres of forestland. This ranged from a minimum of 0 acres, up to 10,000 acres. The average acreage of longleaf pine was 83.25, with a range of 0 to 1,500 acres. Of this, 50% of the longleaf was in stands aged 0 to 25 years; 33 % in multi-aged stands; 10% in stands ages 26-50 years; 3.5% in stands greater than 50 years of age; and 3.5% unsure of age.

**Objective 2: Technical and Financial Assistance**

Seventy-seven percent of the respondents had received technical assistance from several sources (Figure 1). Prominent among the sources were private consulting foresters (50%), followed by state foresters or wildlife biologists (43%), industrial foresters (41%), Extension Service (25%), Natural Resources Conservation Service (24%), Farm Service Agency (20%), and others (5%).

**Figure 1.**  
Received Technical Assistance



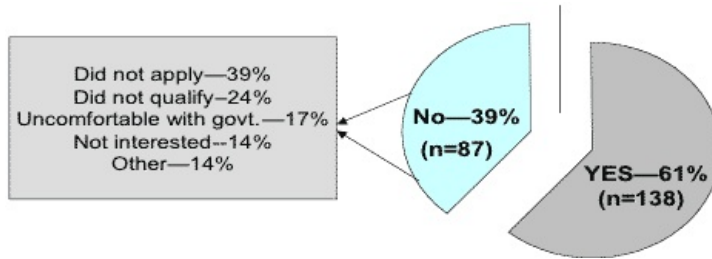
In addition, these landowners shopped around and got forestry help and advice from several sources, including private consulting foresters (55%), State Forestry Commission (50%), Extension Service (40%), the Natural Resources Conservation Service and Industrial Foresters (27%), Farm Service Agency (18%), and other (3%) (Table 2).

**Table 2.**  
Sources Longleaf Pine Landowners Depend on for Help and Advice

	Help and Advice	
	<i>n</i>	%
Private Consulting Forester/Wildlife Biologist	124	55
Industrial Forester	61	27
State Employee (project forester)	112	50
Extension Service	89	40
Farm Service Agency	41	18
Natural Resource Conservation Service	61	27
Other	7	3

Sixty-one percent had received financial assistance in the form of cost-share for their land management activities (Figure 2). Those who did not receive financial assistance (39%) indicated several reasons: did not apply (39%); did not qualify (24%); were uncomfortable with government (17%); or not interested (14%) (Table 2).

**Figure 2.**  
Received Financial Assistance



**Objective 3: Usefulness of Educational Delivery Method**

Landowners were asked to rate the usefulness of educational delivery methods on a scale 5= Very useful, 4= Useful, 3= Uncertain, 2= Not very useful, 1= Not at all useful. In declining order of utility, landowners rated newsletters (mean =4.17) as most useful (Table 3), followed by publications (mean = 4.15), field tours (mean = 3.73), video (mean = 3.45), workshops (mean = 3.40), evening meetings (mean = 3.38), short courses (mean = 3.30), formal classes (mean = 3.00), and the Internet (mean = 2.82).

**Table 3.**  
Usefulness of Educational Delivery Methods

Delivery Method	N	Mean	SD	Rank
Newsletters	207	4.17	0.95	1
Publications	197	4.15	1.01	2
Field tours	181	3.73	1.22	3
Video	171	3.44	1.19	4
Workshops	174	3.41	1.28	5
Evening meetings	174	3.38	1.25	6
Short courses	167	3.30	1.22	7
Formal classes	163	3.00	1.25	8
Internet	156	2.82	1.40	9

\* Mean computed on a scale: 1 = Not at all useful to 5 = Very useful

**Objective 4: Relationships**

The fourth objective of the study was to examine relationships between usefulness of educational delivery methods and demographic characteristics of landowners. Of the four demographic variables examined in this study (age, educational level, occupation, and land ownership), only three variables were significantly related to three of the nine educational delivery methods. Age of landowners was negatively related to two educational delivery methods. . .video ( $r=-.26, p <.05$ ) and the Internet ( $r=-.34, p <.001$ ). Further, significant relationships also existed between occupation of landowners and usefulness of three delivery methods: formal classes ( $r=.17, p <.05$ ), video ( $r=.15, p <.05$ ) and the Internet ( $r=.25, p <.05$ ).

**Conclusions and Recommendations**

Results of the survey indicate that private forest landowners within the natural range of longleaf pine in South Carolina are typically more than 45 years-old, either work in a recognized profession or are retired, are well educated, have above average income, and have individual ownership of their land. Their reliance on a variety of sources for assistance and advice would indicate that they are willing to listen and are receptive to a range of ideas. This generalized profile might imply positive approachability concerning information on the restoration and management of longleaf

pine. However, landowner preferences did occur with respect to educational delivery methods and should be considered in order to maximize program efficiency.

The significant negative correlation between age and high-technology delivery systems suggests that educators should be careful when attempting to reach elderly landowners with video and the Internet. Based on delivery system rankings (Table 3), the large portion (34%) of retired landowners in this sample is likely more comfortable with traditional delivery systems such as newsletters, publications, and field tours. In contrast, positive correlations between occupation and delivery systems show that certain professionally trained landowners may be better served with technology-driven systems and formal classes.

As indicated by Laughlin and Schmidt (1995), Extension professionals need to examine the best possible ways to deliver information within the technological revolution. The findings in this study reinforce the need to modify delivery systems to fit the demographic characteristics of the intended audience and to keep up-to-date surveys in order to determine demographic change. Extension educators should willingly progress by adopting efficient technologies, but they should not abandon more traditional methods until it is warranted by lack of demand.

## References

Caldwell, A. E., & Richardson, J. G. (1995). Preferences of a traditional Extension audience for self-directed delivery methods. *Journal of Applied Communications*, 79(1), 31-40.

Fedele, S. V. (1985). *The potential of interactive video for Extension information delivery*. ASEA Technical Report 85-5015.

Franklin, R. M. (1997). *Stewardship of longleaf pine: A guide for landowners*. Longleaf Alliance Report No. 2. The Longleaf Alliance, Solon Dixon Forestry Education Center, Andalusia, AL. 44 p.

Frost, C. C. (1993). Four centuries of changing landscape patterns in the longleaf ecosystem, pp. 17-43. In: *Proceedings of the Tall Timbers Fire Ecology Conference*. No. 18, The Longleaf Pine Ecosystem: ecology, restoration and management, edited by Sharon M. Herman, Tall Timbers Research Station, Tallahassee, FL.

Gamon, J. A., Bounaga, L. & Miller, W. W. (1992). Identifying information sources and educational methods for soil conservation information used by landowners of highly erodible field. *Journal of Applied Communications*, 76(1), 1-5.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

Landers, J. L., Van Lear, D. H., & Boyer, W. D. (1995). The longleaf pine forests of the southeast: requiem or renaissance? *Journal of Forestry*, 93(11): 39-44.

Laughlin, K. M., & Schmidt, J. L. (1995). Maximizing program delivery in Extension: Lessons from leadership for transformation. *Journal of Extension* [Online], 33(4). Available at: <http://www.joe.org/joe/1995august/a4.html>

Miller, L. E., & Smith, K. (1983). Handling nonresponse issues. *Journal of Extension* [On-line], 24(5). Available at: <http://www.joe.org/joe/1983september/index.html>

Outcalt, K. W., & Sheffield, R. M. (1996). *The longleaf pine forest: trends and current conditions*. Resource Bulletin SRS-9. USDA Forest Service: Southern Research Center. Asheville, NC. 23 pp.

Richardson, J. G. (2001). *Extension education: Process and practice. . . Program delivery methods*. North Carolina Cooperative Extension Service.

Suedi, M., Campo, S., & Lipinski, M. K. (1999). Trends in Michigan farmers' information seeking behaviors and perspectives on the delivery of information. *Journal of Applied Communications*, 83(3), 33-50.

Trede, L. D., & Whitaker, S. (1998). Perceptions of Iowa beginning farmers toward delivery of education. *Journal of Applied Communications*, 82(4), 22-33.

*Copyright* © by Extension Journal, Inc. ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the [Journal Editorial Office, joe-ed@joe.org](mailto:joe-ed@joe.org).

If you have difficulties viewing or printing this page, please contact [JOE Technical Support](#)