



A Survey of  
**Registered Foresters'**  
Needs for Continuing Education Programs

**FOREST AND WILDLIFE RESEARCH CENTER**

Mississippi State University

Research Bulletin

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# **A Survey of Registered Foresters' Needs for Continuing Education Programs**

by  
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# INTRODUCTION

The practice of forestry and the skill set necessary draws upon a wide knowledge base of disciplines. Changes in technologies, government policies, and product markets can alter the knowledge and skills that professional foresters need and can vary depending on the area of forestry practice: consulting, procurement, timber investment management, government, etc. Continuing Forestry Education (CFE) is a means to remain current with technology, adapt to changes in practices, or refresh existing forestry skills. CFE helps professional foresters keep current on the latest forest technologies and practices and serves as refreshers on existing forest practices. The latter becomes more important as needs and uses of forests change over time.

The importance of remaining current is recognized by state forestry registration programs, and participating in continuing forestry education is a common requirement of registered forester programs. The Mississippi Board of Registration for Forestry (2009) requirements include sixteen hours of continuing education with at least six hours of “professionally organized course-work, seminars, short courses, workshops, and technical sessions” to be completed every two years.

Education is an investment, and it’s important that time and resources for such programs be allocated wisely. In an effort to improve course offerings of continuing forestry education, a survey of registered foresters’ needs for continuing education programs was conducted to identify specific course topics that are of the greatest interest.

# METHODS

The 1,207 professional foresters registered with the Mississippi Board of Registration for Forestry (BORF) were identified as the primary population of interest. The survey was conducted during February and March of 2009. An e-mail that explained the purpose of the survey and contained a web link that opened the survey instrument in a web browser was sent to 1,019 foresters having an active e-mail account listed with BORF (Appendix 1). Two weeks after the initial e-mail, a second e-mail was sent to thank survey participants and to remind non-respondents to participate. The on-line survey remained available for an additional two weeks following the second e-mail. Survey participants were offered one hour of Category B continuing forestry education credit provided by BORF.

The survey instrument contained questions on preferred locations and times for course programs, subjects and topics, and demographic information (Appendix 2). The listing of course subjects/topics is based on the Society of American Foresters (2008) (SAF) guidelines for Category 1 continuing forestry education (CFE). The SAF CFE guidelines categorize forestry education into four domains: resource assessment, stakeholder analysis and relations, management planning, and execution of management plan. Course topics listed under the four domain areas total to 33 knowledge areas or topics. A modified Likert scale indicating level of need was listed next to each of the 33 course topics. This follows the procedure used by Straka and Richards (1984) where respondents were asked to indicate need by selecting from options of “don’t need,” “already know,” “would help,” or “must have.”

# RESULTS AND DISCUSSION

A total of 375 responses (36.8% rate) were received, with 224 responding after the first e-mail and 151 more responding after the second.

The percentage of “would help” and “must have” responses by topic were summed to assess the relative importance of each topic. The entire list of topics was then ordered by decreasing need or interest. The “must have” response is listed separately to place the relative importance of each topic in perspective. (Table 1). The complete results by response category are presented in Section 2 of the survey instrument in Appendix 2.

Overall, the most frequently reported continuing education needs were topics related to economics, legal issues, tax policies, and timber inventory and projections. Conversely, the lowest reported topic need areas were fire, species identification, and forest practice history. The topics indicated as of greatest need reflect subject areas that change or have the potential to change regularly (tax, legal issues, markets, etc.) and areas with new and expanding technologies (timber inventory, GIS, GPS, etc.). Course topics having a lower percentage of indicated need may reflect the fundamental nature of these topic areas (species identification, fire), a lack of perceived improvements or advances in these subject areas, or the lack of perceived importance of a topic area (forest history) to an individual’s professional development. Respondents were asked to list other course topics they would like to see offered. Of the 28 responses to this open-ended question, some of the most common suggestions were courses on biomass production and marketing, carbon credits, and forest finance and economics.

Detailed results for course location and time preferences are presented in Section 1, Appendix 2. Roughly one quarter of the respondents wanted continuing forestry education programs online. The interest in taking courses online may reflect increase in distance education and recognition of potential cost savings associated with not having to travel to a specific location. It may also simply be a result of administering

the survey electronically. Preferred locations for face-to-face courses were, Mississippi State University (23.3%), Jackson (13.6%), and Hattiesburg (12.1%) (See Section 1, Appendix 2 for additional locations).

Single day events were preferred by nearly half (45.9%) of respondents, followed closely by half-day programs (33.0%). The cost associated with time and travel are likely reasons for a greater preference of both full day or half-day programs, which account for nearly 80% of respondent selections. Programs longer than one day were favored by only 8.9% of respondents, with 6.2% preferring day and a half length programs and 2.7% favoring two-day programs. The respondents favored July/August, (34.1%), followed by May/June (18.6%) and January/February (18.5%) for attending programs (See Section 1, Appendix 2 for additional selections). The least preferred time of year was November/December, as preferred by only 2.4% of respondents. The time of year preferences reflect the seasonality of forestry and also indicate a preference for attending programs that coincide with the hottest and coldest months of the year. January/February is generally a slower time of year for the forestry profession and, thus, perhaps ideal for offering programs. The lower interest in attending continuing education programs during the November/December period may reflect that these months have a high number of holidays.

Professional background and demographic information on survey respondents is presented in Section 3, Appendix 2. The respondents fell into three broad categories of practice—forestry consulting (34.5%), forest industry procurement (17.5%), land management (13.5%), and agency, either state (10.5%) or federal (7.5%), offering a potential for developing specialized courses focusing on employment. Three quarters of the respondents held a Bachelors degree, 20% held graduate degrees, and only 3% had an Associate’s as their terminal degree. Nearly 17% indicated that they held Certified Forester status with the Society of American Foresters. The age and experience distributions were bi-modal. The age

distribution with modes of 35 and 55 years and the experience distribution with modes of 15 and 30 years of experience (See Appendix 3, Figures 1 and 2). The survey results describe an experienced, well

educated population of professional foresters that are committed to their own professional development and advancement of their profession.

## CONCLUSION

Future continuing education programs must consider locations, duration, and subject matter needs of professional foresters. The greatest areas of interest for continuing education appears to be in the areas of evaluating current and emerging markets, legal and policy issues, tax policies, analyzing timber inventory data and inventory forecasting, and technologies such as GPS and GIS. According to survey respondents,

future programs should be a half-day to full day duration with programs preferred from January to August and greater interest for programs during July and August. There is also interest in online forestry programs. Future continuing education curriculum development should consider self-study or distance-based courses via the Internet.

## LITERATURE CITED

Mississippi Board of Registration for Forestry. January 6, 2009. CFE Requirements. [www.cfr.msstate.edu/borf/cfe\\_requirements.asp](http://www.cfr.msstate.edu/borf/cfe_requirements.asp).

Straka, T.J. and D.P. Richards. 1984. Continuing forestry education and technology transfer: Self-perceived and employer-perceived needs of

Mississippi foresters. Information Bulletin 50. Mississippi Agricultural and Forestry Experimentation Station. Mississippi State, Mississippi.

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**Table 1. Continuing forestry education needs by SAF domain and knowledge area for the “would help” and “must have” need categories expressed as a percentage of respondents and sorted by the summed response for “would help and “must have” category.**

Domain	Knowledge area (Topic)	“would help” or “must have” (%)	“must have” (%)
Resource Assessment	Evaluate current economic and market conditions and emerging markets	93.2	40.3
Stakeholder Analysis & Relations	Federal, state, and local laws/policies and practice of forestry	84.6	13.8
Management Planning	Tax policies impacts on forest management	84.3	23.0
Management Planning	Analyzing inventory data and projecting future forest, stand, and tree conditions and economic analyses	83.2	15.8
Resource Assessment	Forest health and productivity	79.6	7.9
Resource Assessment	Land surveying, forest inventory / sampling techniques, and new technology	78.1	13.2
Management Planning	GPS and GIS in land management planning and forest mapping	76.8	16.7
Resource Assessment	GIS and GPS in data collection and maintenance	76.7	15.5
Management Planning	Forest management and wildlife, fisheries, or wetlands management relationships	76.0	14.2
Execution of Management Plan	Contract law and interpreting contract specifications	75.4	15.6
Management Planning	Silvicultural principles and techniques to achieve objectives	73.9	14.3
Execution of Management Plan	Control methods and pesticide application technologies for forest insects and diseases and vegetation management	73.8	10.3
Execution of Management Plan	Cost share programs impacting management plans	73.2	16.9
Resource Assessment	Identifying impacts from forest insects and diseases	71.9	6.5
Management Planning	Hydrology, water quality, and watershed functions and management and constraints	70.0	7.1
Execution of Management Plan	Professional ethics	70.0	34.6
Management Planning	Developing management plans with multiple specific objectives	69.6	11.5
Execution of Management Plan	Harvesting plan development: road maintenance, roadbed stabilization, timber appraisal, and logging costs	68.5	14.7
Management Planning	Basic real estate and legal records: land records, deeds, and land surveys	67.9	15.4
Execution of Management Plan	Methods to achieve silvicultural objectives	67.1	9.8



**Table 1. Continuing forestry education needs by SAF domain and knowledge area for the “would help” and “must have” need categories expressed as a percentage of respondents and sorted by the summed response for “would help and “must have” category (continued).**

<b>Domain</b>	<b>Knowledge area (Topic)</b>	<b>“would help” or “must have” (%)</b>	<b>“must have” (%)</b>
Management Planning	Economic, environmental, and social consequences of forest management strategies and decisions	66.7	8.4
Resource Assessment	Soil properties and processes specific to forested areas	64.8	2.5
Execution of Management Plan	Reforestation methods, measuring success rates, and advanced seedling genetics	64.4	10.3
Stakeholder Analysis & Relations	Conflict resolution/mediation, how to conduct meetings	63.9	6.3
Execution of Management Plan	Impact and severity of catastrophic agents and corrective methods: rehabilitation or salvage harvesting	63.2	5.2
Execution of Management Plan	Harvesting systems, techniques, and methods and how economic impacts effect harvesting schedules	62.7	7.4
Stakeholder Analysis & Relations	Forest landowner demographics and identifying stakeholders	61.4	7.1
Resource Assessment	Interactions between forest ecological factors and ecosystem services	58.4	4.4
Resource Assessment	Photo interpretation and remote sensing	56.8	4.2
Management Planning	Fire risk assessment and understanding of suppression techniques	48.6	5.5
Management Planning	Fire weather and prescribed fire methods	47.4	6.0
Resource Assessment	Identifying basic aquatic and terrestrial flora & fauna	44.0	5.5
Stakeholder Analysis & Relations	Institutional / socio-economic histories influence on practice of forestry	40.2	2.2

# APPENDIX I. E-MAIL NOTIFICATION SENT TO MISSISSIPPI REGISTERED FORESTERS

## First e-mail letter introducing continuing forestry education survey.

Dear Professional Forester,

In an effort to improve course offerings for continuing forestry education at Mississippi State University, we need to know what course topics are most important to you. Please take a few moments to complete the online survey by following the link below. Your participation in this survey will earn you 1 hour of B.O.R.F. Category B Continuing Forestry Education. Your responses will determine the future course offerings for continuing forestry education at Mississippi State University's Department of Forestry. Your participation in this survey is completely voluntary and your responses will remain confidential. If you have any questions about this survey, please contact me by phone or e-mail.

## Second e-mail letter thanking survey participants and reminding non-respondents.

Dear Professional Forester,

Two weeks ago you were asked to participate in an online survey focusing on professional forester needs for continuing education. Thank you if you have already completed the survey. If you have not had an opportunity to complete the survey, please take a few moments and take the online survey by following the link below. Your participation in this survey will earn you 1 hour of B.O.R.F. Category B Continuing Forestry Education. The survey will be available for one more week and the link will be removed on March 10th. Results of this survey will be used to determine future course offerings for continuing forestry education offered by Mississippi State University's Department of Forestry. Your participation in this survey is completely voluntary and your responses will remain confidential. If you have any questions about this survey, please contact me by phone or e-mail.

# APPENDIX II. SURVEY INSTRUMENT WITH SUMMARY STATISTICS.

## Section 1. Continuing Forestry Education Course Locations and Times.

**Where would you like continuing education courses to be held? (Select all that apply)**

The average number of selections was 2.3 and standard deviation of 1.2. (n = 373)

Location	Percentage of Respondents
Starkville / Mississippi State University	23.3%
Vicksburg	6.9%
Tupelo	5.4%
Jackson	13.6%
Hattiesburg	12.1%
Grenada	2.7%
Biloxi	5.9%
Internet: course online	23.6%
Other	6.6%

**If you chose 'Other' in the above question, please specify where you would like continuing education courses to be held.** [The most common entries for other location were Meridian (14) Southwest Mississippi (14) MSU Extension Service via distance education (8).]

**What length of time would you like continuing education courses to last? (n=372)**

Length of Time	Percentage of Respondents
1 hour	2.7%
2 hours	9.5%
1/2 day	33.0%
1 day	45.9%
1 1/2 days	6.2%
2 days	2.7%

**What time of year would is best for you to attend continuing education courses? (n=372)**

Time of Year	Percentage of Respondents
January/February	18.5%
March/April	16.2%
May/June	18.6%
July/August	34.1%
September/October	10.5%
November/December	2.4%

# APPENDIX II. SURVEY INSTRUMENT WITH SUMMARY STATISTICS (continued).

## Section 2. Subjects/Topics for C.E. Courses

This section lists course topics that may be offered as part of a comprehensive continuing education program for professional foresters. The following course topics are based on the Society of American Foresters guidelines for Category 1 continuing forestry education. For each of the course topic listed below, **please indicate your need for each course topic by selecting one need category.**

<b>Resource Assessment</b>	<b>Number Responding</b>	<b>Don't need (%)</b>	<b>Already Know (%)</b>	<b>Would Help (%)</b>	<b>Must Have (%)</b>
Soil properties and processes specific to forested areas	364	23.1	12.1	62.4	2.5
Photo interpretation and remote sensing	361	19.1	24.1	52.6	4.2
GIS and GPS in data collection and maintenance	361	10.5	12.7	61.2	15.5
Interactions between forest ecological factors and ecosystem services	363	29.8	11.8	54.0	4.4
Land surveying, forest inventory / sampling techniques, and new technology	370	7.8	14.1	64.9	13.2
Identifying impacts from forest insects and diseases	370	12.7	15.4	65.4	6.5
Identifying basic aquatic and terrestrial flora & fauna	364	41.8	14.3	38.5	5.5
Forest health and productivity	367	9.0	11.4	71.7	7.9
Evaluate current economic and market conditions and emerging markets	370	4.3	2.4	53.0	40.3
<b>Stakeholder Analysis &amp; Relations</b>	<b>Number Responding</b>	<b>Don't need (%)</b>	<b>Already Know (%)</b>	<b>Would Help (%)</b>	<b>Must Have (%)</b>
Conflict resolution/mediation, how to conduct meetings	366	21.3	14.8	57.7	6.3
Federal, state, and local laws/policies and practice of forestry	369	7.0	8.4	70.7	13.8
Forest landowner demographics and identifying stakeholders	365	26.0	12.6	54.2	7.1
Institutional / socio-economic histories influence on practice of forestry	366	50.0	9.8	38.0	2.2
<b>Management Planning</b>	<b>Number Responding</b>	<b>Don't need (%)</b>	<b>Already Know (%)</b>	<b>Would Help (%)</b>	<b>Must Have (%)</b>
Hydrology, water quality, and watershed functions and management and constraints	367	18.5	11.4	62.9	7.1
Forest management and wildlife, fisheries, or wetlands management relationships	367	11.2	12.8	61.9	14.2

# APPENDIX II. SURVEY INSTRUMENT WITH SUMMARY STATISTICS (continued).

## Section 2. Subjects/Topics for C.E. Courses

This section lists course topics that may be offered as part of a comprehensive continuing education program for professional foresters. The following course topics are based on the Society of American Foresters guidelines for Category 1 continuing forestry education. For each of the course topic listed below, **please indicate your need for each course topic by selecting one need category.**

<b>Management Planning (continued)</b>	<b>Number Responding</b>	<b>Don't need (%)</b>	<b>Already Know (%)</b>	<b>Would Help (%)</b>	<b>Must Have (%)</b>
Tax policies impacts on forest management	369	11.1	4.6	61.2	23.0
Silvicultural principles and techniques to achieve objectives	371	5.9	20.2	59.6	14.3
Developing management plans with multiple specific objectives	365	11.2	19.2	58.1	11.5
Fire risk assessment and understanding of suppression techniques	366	25.4	26.0	43.2	5.5
Fire weather and prescribed fire methods	365	23.3	29.3	41.4	6.0
GPS and GIS in land management planning and forest mapping	371	9.7	13.5	60.1	16.7
Economic, environmental, and social consequences of forest management strategies and decisions	369	23.3	10.0	58.3	8.4
Analyzing inventory data and projecting future forest, stand, and tree conditions and economic analyses	368	10.1	6.8	67.4	15.8
Basic real estate and legal records: land records, deeds, and land surveys	371	11.1	21.0	52.6	15.4
<b>Execution of Management Plan</b>	<b>Number Responding</b>	<b>Don't need (%)</b>	<b>Already Know (%)</b>	<b>Would Help (%)</b>	<b>Must Have (%)</b>
Harvesting plan development: road maintenance, roadbed stabilization, timber appraisal, and logging costs	368	11.1	20.4	53.8	14.7
Methods to achieve silvicultural objectives	368	7.9	25.0	57.3	9.8
Contract law and interpreting contract specifications	366	14.2	10.4	59.8	15.6
Impact and severity of catastrophic agents and corrective methods: rehabilitation or salvage harvesting	367	22.6	14.2	58.0	5.2
Harvesting systems, techniques, and methods and how economic impacts effect harvesting schedules	367	19.6	17.7	55.3	7.4

# APPENDIX II. SURVEY INSTRUMENT WITH SUMMARY STATISTICS (continued).

## Section 2. Subjects/Topics for C.E. Courses

This section lists course topics that may be offered as part of a comprehensive continuing education program for professional foresters. The following course topics are based on the Society of American Foresters guidelines for Category 1 continuing forestry education. For each of the course topic listed below, **please indicate your need for each course topic by selecting one need category.**

Execution of Management Plan (continued)	Number Responding	Don't need (%)	Already Know (%)	Would Help (%)	Must Have (%)
Reforestation methods, measuring success rates, and advanced seedling genetics	368	15.8	19.8	54.1	10.3
Control methods and pesticide application technologies for forest insects and diseases and vegetation management	370	14.6	11.6	63.5	10.3
Professional ethics	370	7.0	23.0	35.4	34.6
Cost share programs impacting management plans	366	15.3	11.5	56.3	16.9

**Are there any other course topics you would like to see offered?** [The most common entries for other course topics were biomass production and marketing (5), forest finance and economics (4), and carbon credits (3).]

## Section 3. Professional Background and Demographic Information

**In what area of forestry do you primarily work? (n=371)**

Area of Work	Percentage of Respondents
State Government	10.5%
Federal Government	7.5%
Industry forest management	13.5%
Industry timber procurement	17.5%
Consultant	34.5%
Education	2.4%
Other	14.0%

**If you chose 'Other' in the above question, please specify what area of forestry you primarily work.** [The most common entries for other were TIMO (9), Timber Real-Estate (7), Timber Buyer (5), and Forest Products Manufacturing (5).]

**Are you a state registered forester? (n=373)** Yes = 99.2% No = 0.8%

**Are you a Society of American Foresters Certified forester? (n=370)** Yes = 16.8% No = 83.2%

# APPENDIX II. SURVEY INSTRUMENT WITH SUMMARY STATISTICS (continued).

## Section 3. Professional Background and Demographic Information

What best describes your educational level? (n=373)

Education Level	Percentage of Repondents
Some high school	0%
High school	0.3%
Associates degree	2.9%
Bachelor's degree	75.6%
Graduate degree	21.2%

How many years have you worked in forestry? (n=364) Average=21.0 Standard Deviation=1.3

Indicate your gender (n=369) Male = 94.9% Female = 5.1%

Indicate your age (n=375) Average=44.2 Standard Deviation=11.4

# APPENDIX III. HISTOGRAMS OF RESPONDENTS' AGE AND YEARS OF FORESTRY EMPLOYMENT.

Figure 1. Histogram of respondents' years of forestry employment.

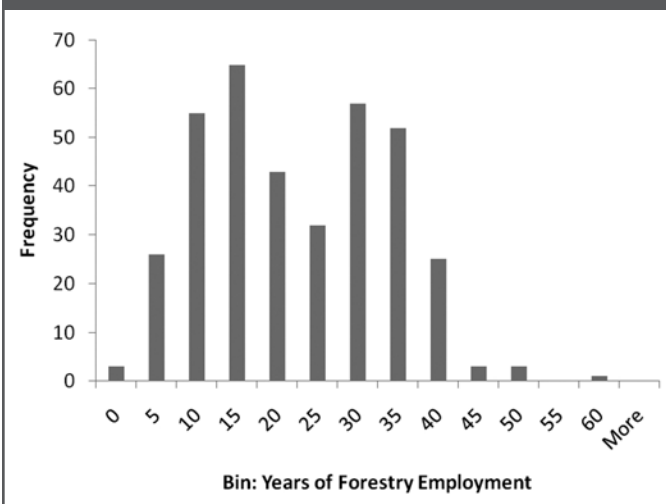
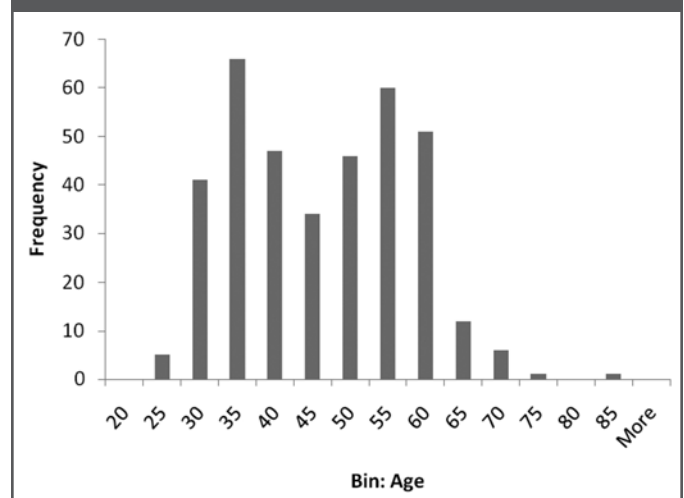


Figure 2. Histogram of respondents' age



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