



PINEMAP

**Resilient Forest Management
Strategies
for Today's Professionals:
A Continuing Education Survey**

Continuing Education Survey:
Resilient Forest Management Strategies for Today's Professionals

Dear Forest Resource Professional,

We need your help in determining the best way to develop future educational programs for professionals. This 10-15-minute RESEARCH survey will help us capture your perspectives and needs in a simple and CONFIDENTIAL way.

Why? To develop educational programs for foresters and natural resource professionals to increase forest productivity (particularly pine plantation productivity) and resilience to extreme weather, climate variability and climate change.

Who? A collaboration of Southern universities and Extension Services, state forestry agencies and the USDA Forest Service.

Why you? We value your input and insights.

What will we do with your answers? We will compile all responses and use them to develop curriculum and teach resource professionals how to more effectively manage forests under challenging climatic and weather conditions. Results will be available to participants upon request.

In this questionnaire, we will use the following terms. Please read through them carefully.

1. **Resilience** - The capacity of forest stands to respond to disturbance by resisting damage and/or recovering quickly.
2. **Weather** - The current or short-term atmospheric condition (hours to days) at a given place (wind, temperature, cloudiness, moisture, humidity, etc.). A rain event is an example of weather.
3. **Climate** - The long-term atmospheric conditions (weeks to decades) in a general area (temperature, humidity, precipitation, averaged over a series of years). The frequency of rain events over a month, season, etc. is an example of climate.

NOTE: The results from this survey will also be analyzed as research. There are no known risks or discomforts associated with this research. In order to secure confidentiality for our participants, we will use the Survey Monkey server to collect data and will utilize their selection to "turn off the ip addresses". This way, the ip addresses will not be kept with the survey results and will help ensure confidentiality of responses. However, despite this collection protocol, internet communications are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself.

Your involvement in this study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled.

By completing this survey, you are agreeing to participate in the research.

Questions about this study should be directed to: Leslie Boby, Extension Associate, Southern Regional Extension Forestry, Building 4-433 Warnell School of Forestry, University of Georgia, Athens, GA 30602; telephone: (706) 542-9022; email: lboby@sref.info.

Questions or concerns about your rights as a research participant should be directed to: The Chairperson, University of Georgia Institutional Review Board, 629 Boyd GSRC, Athens, Georgia, 30602; telephone: (706) 542-3199; email: irb@uga.edu.

This survey is part of the Pine Integrated Network: Education, Mitigation and Adaptation Project (PINEMAP). For more information on this project and resources that may be helpful to you, go to www.pinemap.org.

To follow new developments, please like us on facebook at www.facebook.com/pinemap or go to our webpage www.pinemap.org and click 'subscribe'.

Participation in this survey is voluntary.

- I'm ready to proceed.
- I'd prefer not to participate; please take my email off reminder lists.

Other (please specify)



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How would you best describe yourself?

(This survey is designed for forestry and natural resource professionals. However, others are welcome to submit answers as well.)

- Forester
- Wildlife Biologist
- Landowner
- Logger
- Industry Professional (non-forester)
- Other (please specify)



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Section I. Changing climate conditions in the Southern United States

Please provide a response to the following general climate condition questions or statements.

Please indicate your level of agreement with the following statement: "In my lifetime, I have noticed a change in the climate (longer, hotter summers; warmer, drier winters; cooler, moister summers; earlier, drier springs, etc.)."

- Strongly disagree
- Disagree
- Neither disagree or agree
- Agree
- Strongly agree

The following are some conditions that U.S. farmers and forest owners/managers have experienced over the past few years. To what extent have you or your clients witnessed any of these in the past several years?

	Never	Rarely	Occasionally	Frequently	Very frequently
Greater frequency and/or severity of flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Longer dry periods and/or drought conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of insect damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of disease damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of invasive plant infestations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More frequent and/or extreme rainfall events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased soil erosion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased frequency of or more severe fire events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warmer winters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooler winters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hotter summers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooler summers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drier planting seasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetter planting seasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Change in length of growing season	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase in frequency of extreme weather events (tornadoes, hurricanes, ice storms, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify and provide how frequently you see this)	<input type="text"/>				

To what extent do you feel *concerned* about the long term impacts on our forests from the following weather and climate related factors:

	Not concerned	Slightly concerned	Somewhat concerned	Moderately concerned	Very concerned
Greater frequency and/or severity of flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Longer dry periods and/or drought conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of insect damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of disease damage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater frequency of or more severe occurrences of invasive plant infestations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More frequent and/or extreme rainfall events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased soil erosion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased frequency of or more severe fire events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Warmer winters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooler winters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hotter summers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooler summers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drier planting seasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetter planting seasons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Change in length of growing season	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase in frequency of extreme weather events (tornadoes, hurricanes, ice storms, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

To what extent do you think that forest management strategies will need to change to better respond to future weather and climate uncertainties?

- No change needed
- Slight change needed
- Some change needed
- Moderate change needed
- Significant change needed
- Uncertain

Please select the statement that best reflects your perspective concerning climate change:

- Sufficient evidence exists that shows that climate change is not occurring
- Sufficient evidence does not exist to know with certainty whether climate change is occurring or not
- Climate change is occurring, but we don't know its cause
- Climate change is occurring, and it is caused equally by natural changes in the environment and human activities
- Climate change is occurring, and it is mostly caused by natural changes in the environment in addition to contributions from human activities
- Climate change is occurring, and it is mostly caused by human activities in addition to contributions from natural factors
- Unsure

Do your clients ever ask you about changes in climate or extreme weather and how it might affect their forest?

- Yes
- No

If yes, what kinds of questions have they asked?

If you answered yes to the previous question, did you feel confident in answering their question?

Yes

No

Unsure

Comments?

Do you think climate change might provide any benefits to forest management?

Yes

No

Unsure

Comments?



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Section II.

In this section, we are interested in your current knowledge and your level of interest in continuing education regarding climate change and extreme weather.

How knowledgeable do you feel you are about the science behind climate and the climate change discussion?

- Not knowledgeable
- Slightly knowledgeable
- Somewhat knowledgeable
- Moderately knowledgeable
- Very knowledgeable

How interested are you in learning more about the science behind climate and the climate change discussion?

- Not interested
- Slightly interested
- Somewhat interested
- Moderately interested
- Very interested

Do you use any tools to assist with "climate smart" forest management (such as long-term climate models, recent updates to the plant hardiness zone maps, the U.S. Drought Monitor, the Keech-Byram Drought Index, etc.)?

- Yes
- No
- Unsure

Comments?

If yes, how confident are you in accessing and using these tools to make management decisions?

- Not confident
- Slightly confident
- Somewhat confident
- Moderately confident
- Very confident

Comments?

If yes, how confident do you feel about the information that these tools provide?

- Not confident
- Slightly confident
- Somewhat confident
- Moderately confident
- Very confident

Comments?

In general, how knowledgeable are you about weather (including forecasts, tools, technologies and the science behind it)?

- Not knowledgeable
- Slightly knowledgeable
- Somewhat knowledgeable
- Moderately knowledgeable
- Very knowledgeable

Comments?

How interested are you in learning more about weather (science, forecasts, and tools and technologies)?

- Not interested
- Slightly interested
- Somewhat interested
- Moderately interested
- Very interested

Comments?

Do you use any weather tools to assist with forest management (such as short term and 1-3 month weather forecasts, soil moisture predictions, or other measurements)?

- Yes
- No
- Unsure

Comments?

If yes, how confident are you in using these tools?

- Not confident
- Slightly confident
- Somewhat confident
- Moderately confident
- Very confident

Comments?

In general, how knowledgeable are you about forest resiliency strategies, options and concepts (including risk assessment, "climate-smart" best management practices, economic sensitivity analyses, etc.) that help promote forest health and productivity under increasingly uncertain future scenarios?

- Not knowledgeable
- Slightly knowledgeable
- Somewhat knowledgeable
- Moderately knowledgeable
- Very knowledgeable

Comments?

How interested are you in learning more about forest management strategies that promote forest health and resiliency?

- Not interested
- Slightly interested
- Somewhat interested
- Moderately interested
- Very interested

Comments?



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Section III.

In this section, we are interested in specific forest management topics in continuing education regarding climate change and extreme weather.

Please rate your level of interest in the following topics.

	Not interested	Slightly interested	Somewhat interested	Moderately interested	Very interested
General climate and weather science education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communication skills regarding the importance of climate, weather and forest resilience to my clients	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate and weather models	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Silvicultural recommendations based on weather and climate guidance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Growth and yield models reflective of climate and weather variables	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planting guidelines, seedling selection and genetics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Assessing stand vulnerability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic impact of weather, climate and climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)



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Would you be willing to participate in following types of learning activities?

	Yes	No
Individual webinars or webinar series	<input type="radio"/>	<input type="radio"/>
Online courses that are self-led (i.e., you can do them at any time)	<input type="radio"/>	<input type="radio"/>
Online courses that are led by an instructor	<input type="radio"/>	<input type="radio"/>
Online courses that include both an instructor-led portion and a self-led portion	<input type="radio"/>	<input type="radio"/>
Videos/DVDs	<input type="radio"/>	<input type="radio"/>
Correspondence courses	<input type="radio"/>	<input type="radio"/>
In-person workshops or short courses	<input type="radio"/>	<input type="radio"/>
An online community for sharing information and interacting	<input type="radio"/>	<input type="radio"/>

If you answered "no" to any of the above educational methods, could you please elaborate?



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Section IV.

In this section, we would like to gather some personal information from you.

In which states do you perform forest management services? Please check all that apply.

- Alabama
- Arkansas
- Georgia
- Florida
- Kentucky
- Louisiana
- Mississippi
- North Carolina
- Oklahoma
- South Carolina
- Texas
- Tennessee
- Virginia

Other states (please specify)

In what general natural resources field is your highest degree?

- Forestry
- Wildlife
- Natural Resource Conservation

Other (please specify)

What was the highest level of education you reached?

- Associates or Technical Degree
- Bachelors Degree
- Masters Degree
- Doctorate or Professional Degree

Other (please specify)

In what year did you finish your final education?

Select a range

Range of years

What is your gender?

- Male
- Female

How many years have you worked in the forestry profession?

Which of the following best represents your current employer?

- A state forestry agency (for example, Georgia Forestry Commission, Florida Forest Service, etc.)
- The Cooperative Extension Service
- A private forestry consulting business
- A Timber Management Investment Organization (TIMO) or Real Estate Investment Trust (REIT)
- A private forestry association or organization
- A federal natural resource agency
- A private research firm
- A private forest industrial company
- A university, college, or other academic institution

Other (please specify)

If you work with clients directly, which categories best describe your clients? Please check all that apply.

- Forest products companies
- Forest contractors (tree planting, harvesting, or other clients)
- Private landowners
- Industrial landowners
- Natural resource professionals
- Extension agents
- TIMO or REIT clients
- Fellow researchers
- Granting agencies
- I don't work with clients directly

Other (please specify)

If you don't work with clients directly, who is your target audience?

Does your work involve pine plantation management either directly, or through advising others?

Yes

No

If yes, approximately how many acres do you manage or advise others on managing?

How do you identify yourself politically?

Very liberal

Liberal

Moderate

Conservative

Very conservative

Other (please specify)



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Thanks!

* Please select YES if you would like to include your answers in our research survey. Please select NO if you want your responses discarded.

Yes

No

Please provide your email if you are interested in receiving continuing education and other information regarding pine plantation management in the face of uncertain weather and climate conditions. ***Note: your answers will not be linked to your email address.**



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Thank you for your participation!

If you have any questions or concerns about the content of this survey, please contact Leslie Boby: Leslie Boby, Extension Associate Southern Regional Extension Forestry lboby@sref.info (706) 542-9022 This survey is part of the Pine Integrated Network: Education, Mitigation and Adaptation Project (PINEMAP). For more information on this project and resources that may be helpful to you, go to www.pinemap.org and on the lower left, there is a button to 'subscribe' for any updates! To follow new developments, please like us on facebook: www.facebook.com/pinemap