

Climate Change Related Extreme Weather Events and Risk Management Options for Family Forests

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Forest Landowner Perceptions of CC

- Climate change is perceived to be a distant, future problem, and not something that will affect “me or my family.” For most Americans it is not a concrete or relevant problem and is therefore a low priority (Leiserowitz, 2006).
- A quarter of respondents to the Six Americas survey said that the issue of global warming made them feel “depressed” or “guilty” (Leiserowitz et al., 2010).
- Large forest landowners in FL concerned with profit; understanding CC was not important enough. Small landowners were more interested in learning more about CC (Krantz et al. 2012)
- A series of focus groups with family forest landowners in the Pacific Northwest found that the most common themes were uncertainty, complexity, and skepticism. Most landowners were confused by the science behind climate change, because the complex climate models made it difficult for them (Creighton et al., 2011).

Challenges to Forestry Extension CC Programming

- Politically & emotionally charged issue
- There are many misconceptions, such as confusion about weather and climate.
- Most climate science communication comes from scientists, who are not trained to communicate with the general public.
- Forest landowners have limited options for adaptively managing trees.
- How best to proceed?
- What are climate change perceptions of our clientele?

Cooperative Extension and Climate Change: Successful Program Delivery

(Morris et al. 2014) **Journal of Extension**

- To effectively communicate climate change adaptation strategies to agriculture and natural resource Extension clients:
 - Extension should provide climate science information to early adopters
 - emphasize risk management of specific threats to clients not convinced about climate change, focusing on local solutions and familiar management tools.

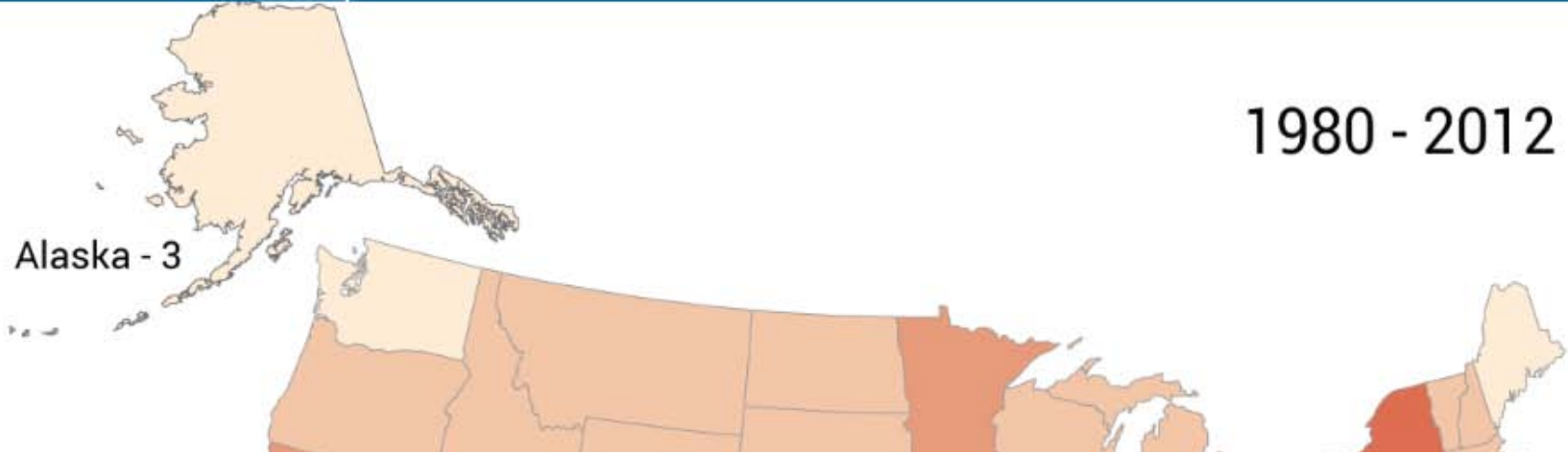


Extreme Weather Events and Risk Management Options for Family Forests

**A new MSU
Extension
Forestry Short
Course**

1980 - 2012

Alaska - 3



This map summarizes the number of times over the past 30 years that each state has been affected by weather and climate events that have resulted in more than a billion dollars in damages. The Southeast has been affected by more billion-dollar disasters than any other region. The primary disaster type for coastal states such as Florida is hurricanes, while interior and northern states in the region also experience sizeable numbers of tornadoes and winter storms. (Figure source: NOAA NCDC¹³).

Number of Events

Puerto Rico - 4



1 - 8



9 - 16



17 - 25



26 - 35

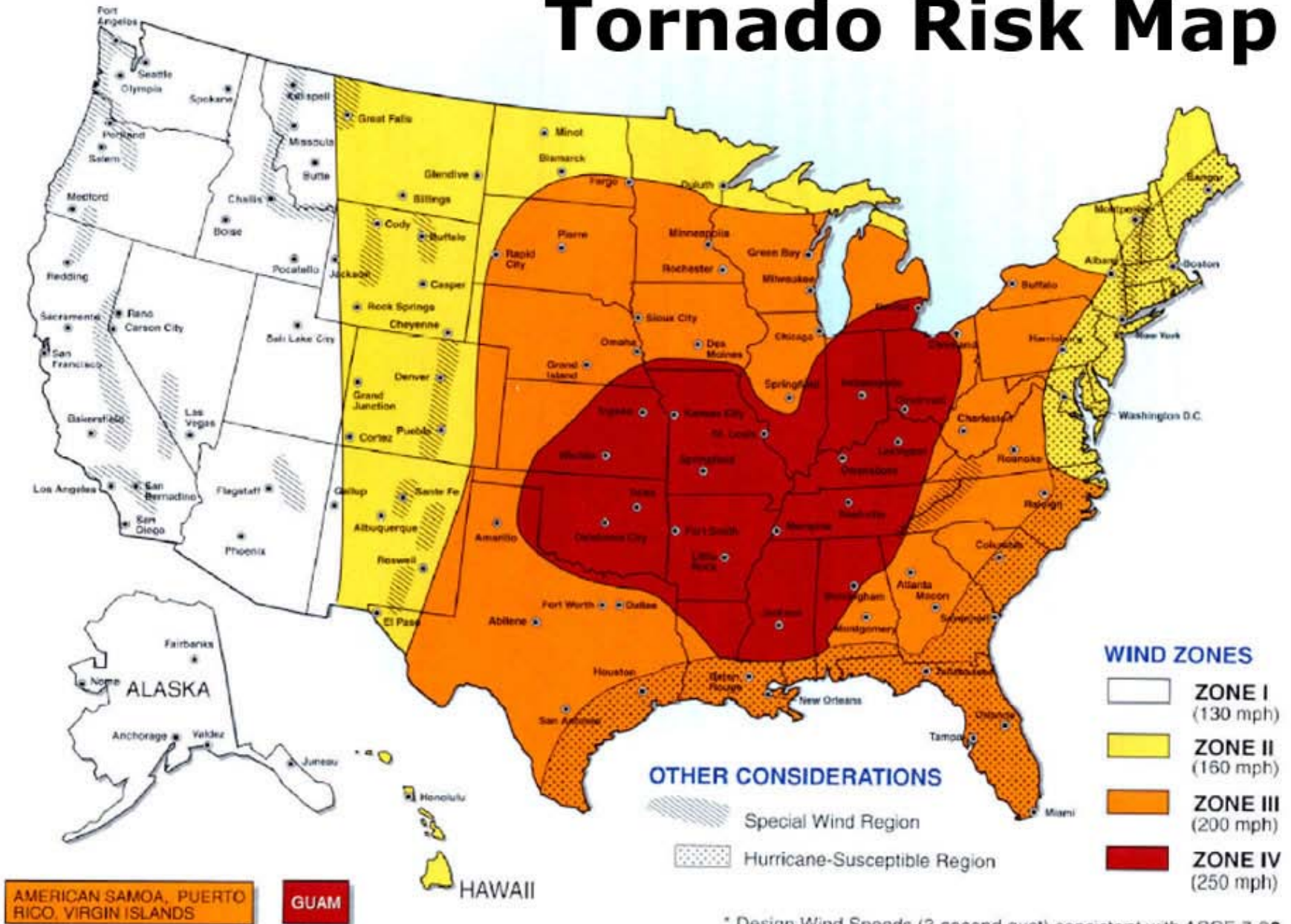


36 - 44



45 - 54

Tornado Risk Map





OFFICIAL NEWS RELEASE

MISSISSIPPI FORESTRY COMMISSION

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April 2014 Storm Damage Assessment

Name	Pine Acres Damaged	Hdwd Acres Damaged	Mixed Acres Damaged	Total Acres	Avg Value Per Acre	Total Value
Lee	401	775	237		\$ 638	\$ 902,352
Itawamba	232	2851	139		\$ 775	\$ 2,500,132
Prentiss	175	2234	85		\$ 597	\$ 1,490,859
Leake	2147	1093	610		\$ 563	\$ 2,167,546
Neshoba	1131	214	118		\$ 513	\$ 751,065
Winston	4931	3398	1440		\$ 666	\$ 6,514,938
Total Values	9017	10565	2629	22,211		\$ 14,326,895

Extreme Weather Events and Risk Management Options for Family Forests

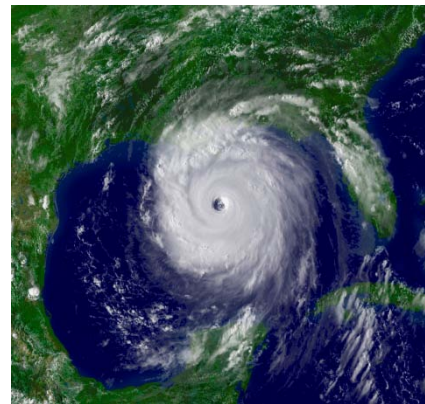
- 8 forestry short course programs (7 completed)
- 3 new Extension publications
- Extreme weather events represent one of the single most costly risks facing family forest owners
- Cover strategies to plan for and mitigate the risk
- Address silvicultural practices and economic decision-making
- Review climate models



Approach

Risk management of specific threats

Focus on local solutions and familiar management tools



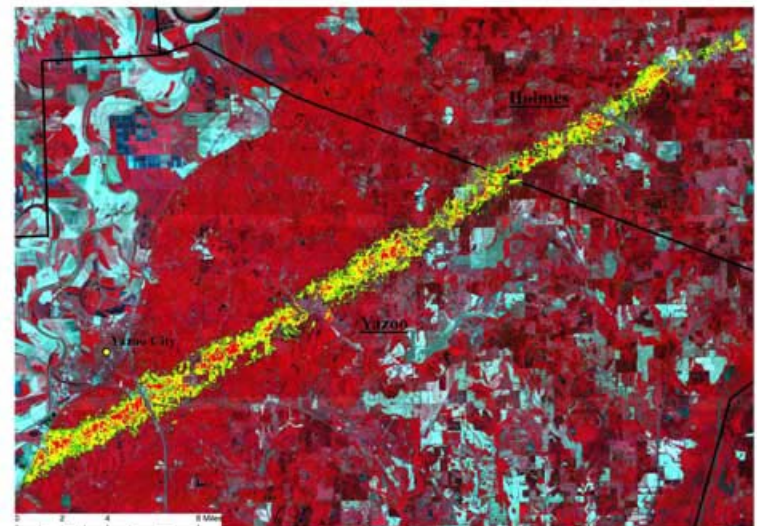
Extreme Weather Events and Risk Management Options for Family Forests

Key Topics

- pine thinning and timber stand improvement
- uneven-aged management
- salvage of storm damaged timber
- IRS timber casualty loss provisions
- timber insurance
- seedling survival
- manage or regenerate a forest following an extreme event
- climate change science



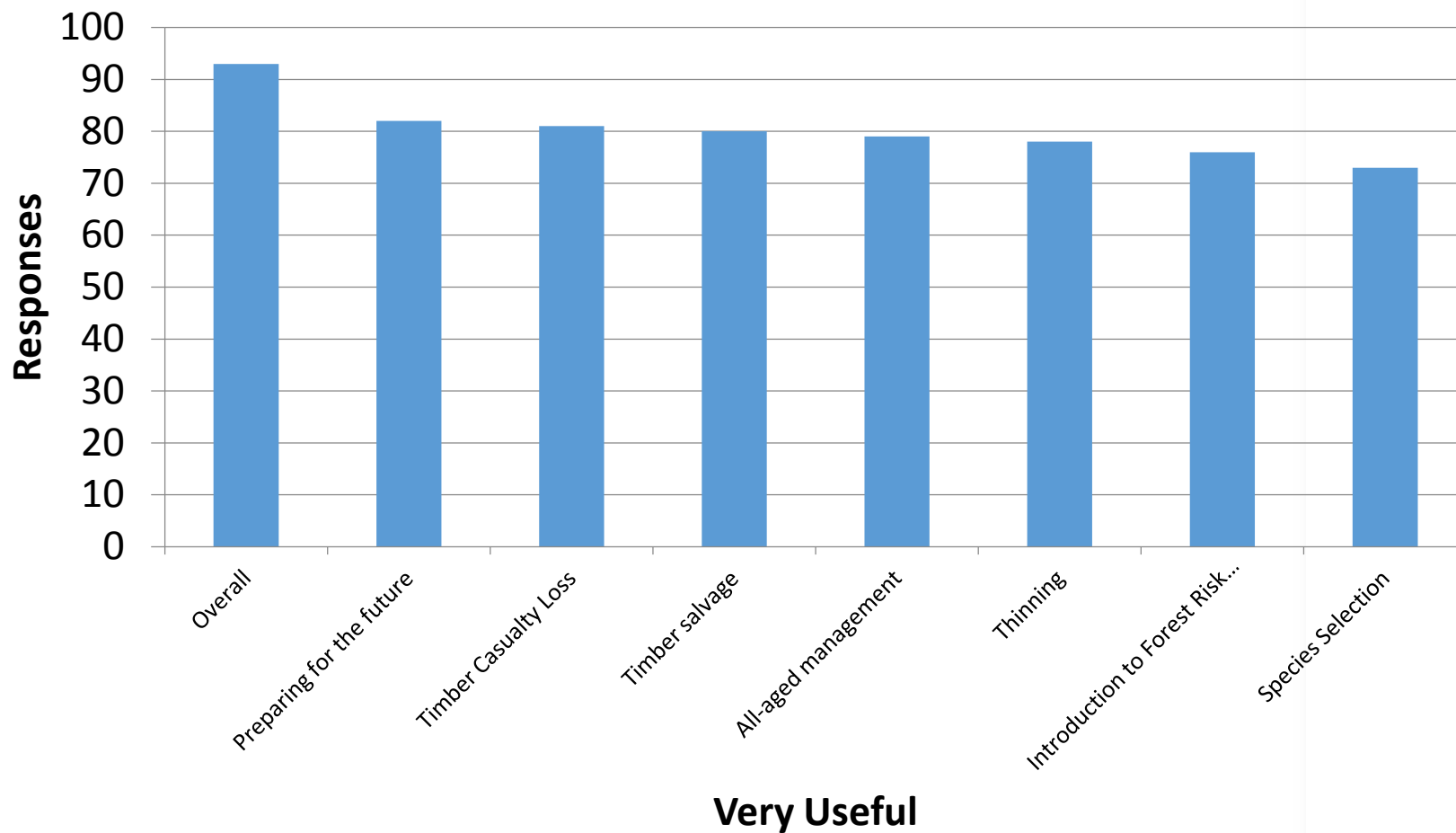
NE Yazoo and SW Holmes Counties
NDMI Differencing w/Thresholding (Vegetation Removal: Green - Light, Yellow - Moderate, Red - Heavy)



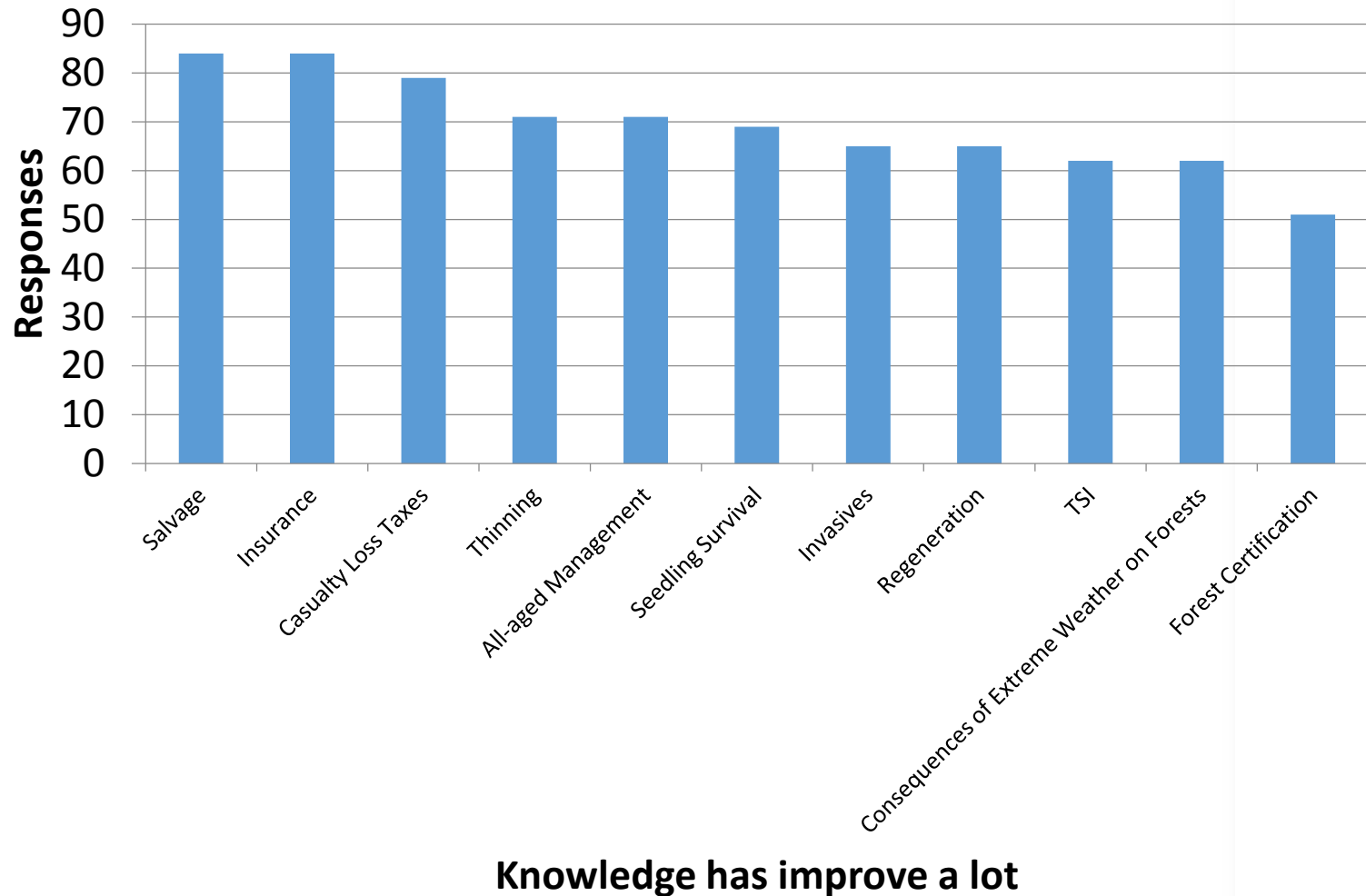
Participants

Attendance	239
Completed evaluations	157 (66%)
Acres owned or managed	1,575,166
Min	4
Participant type	
Landowner	103
Forester	40
Other (Logger, Extension agent)	9
Gender (Male)	81%
Race (White)	86%

How useful were today's topics for you?

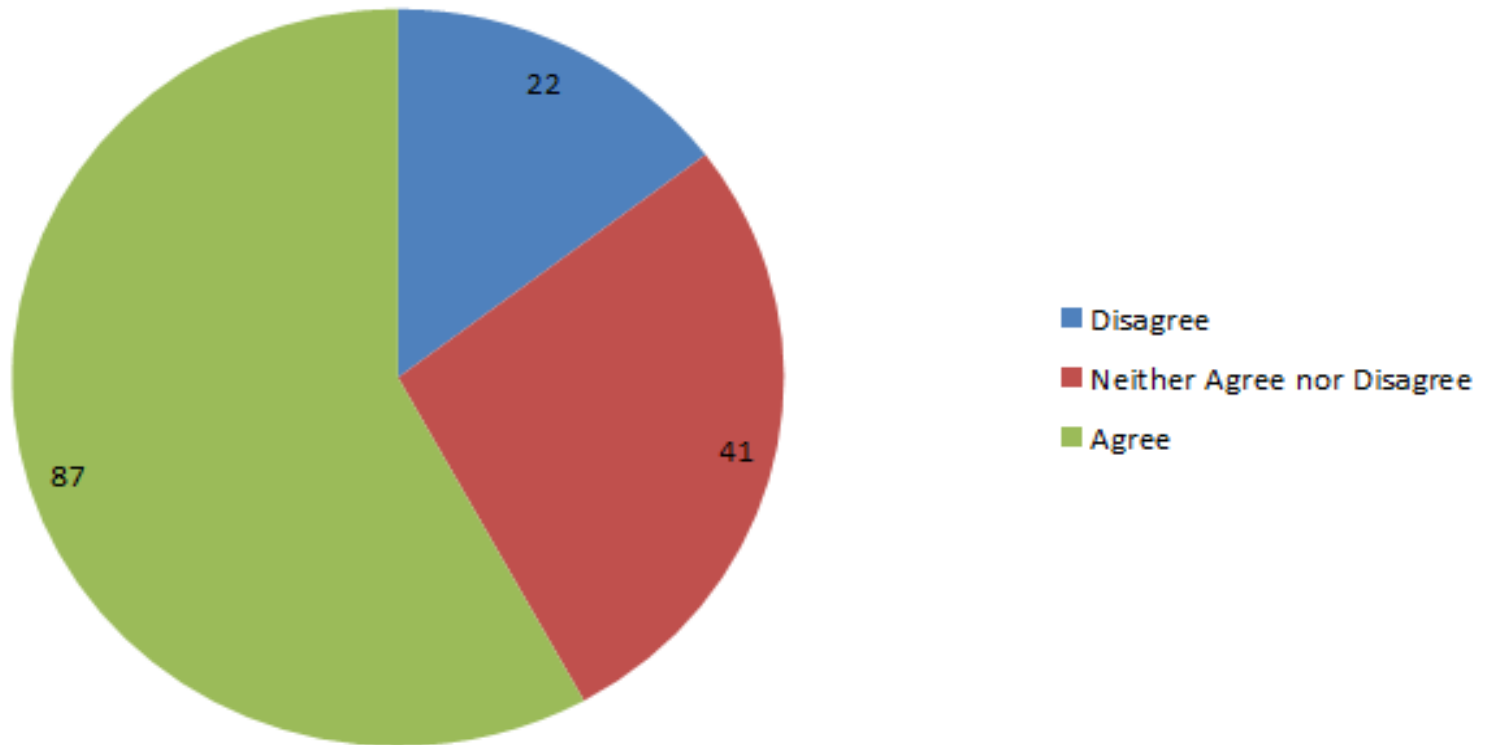


As a result of this program, how has your knowledge improved about the following topics?



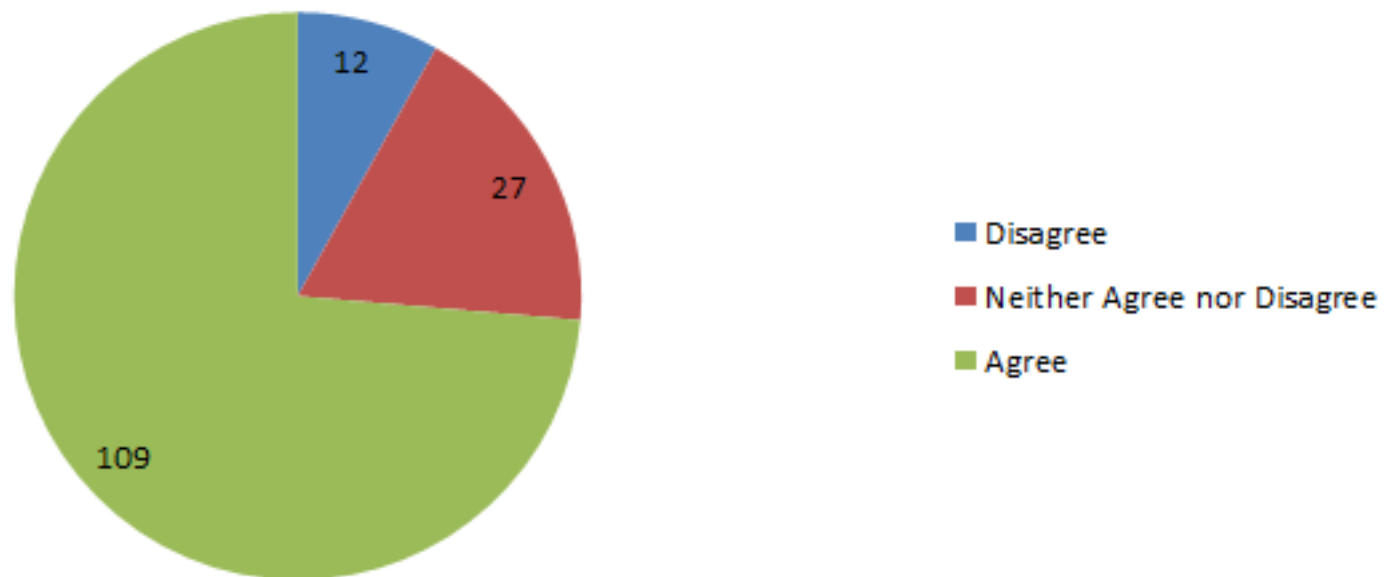
Now that you have participated in this program, what is your opinion about:

There is increasing frequency and severity of extreme weather in Mississippi



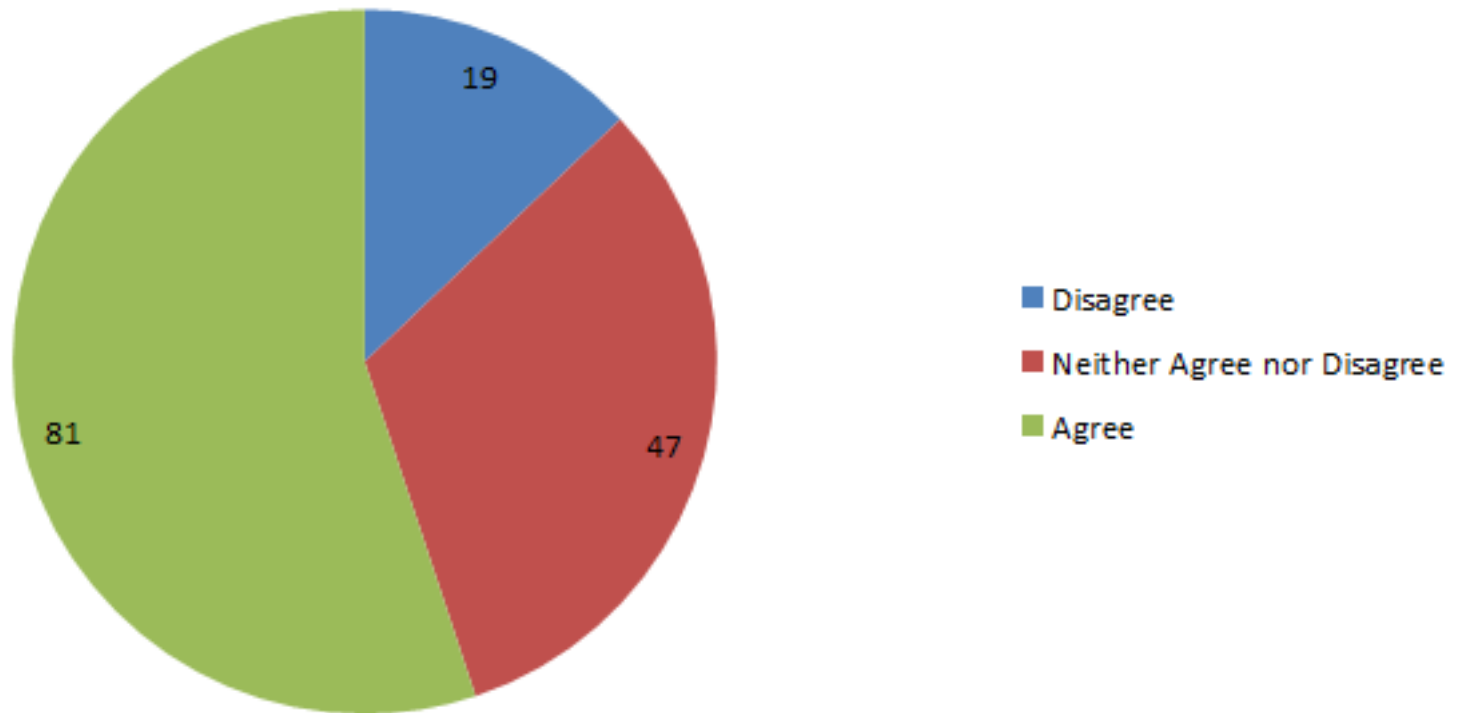
Now that you have participated in this program, what is your opinion about:

Appropriate forest silviculture techniques as discussed in this class mitigate the risk that my forest and my family will suffer as a result of a weather-related disaster



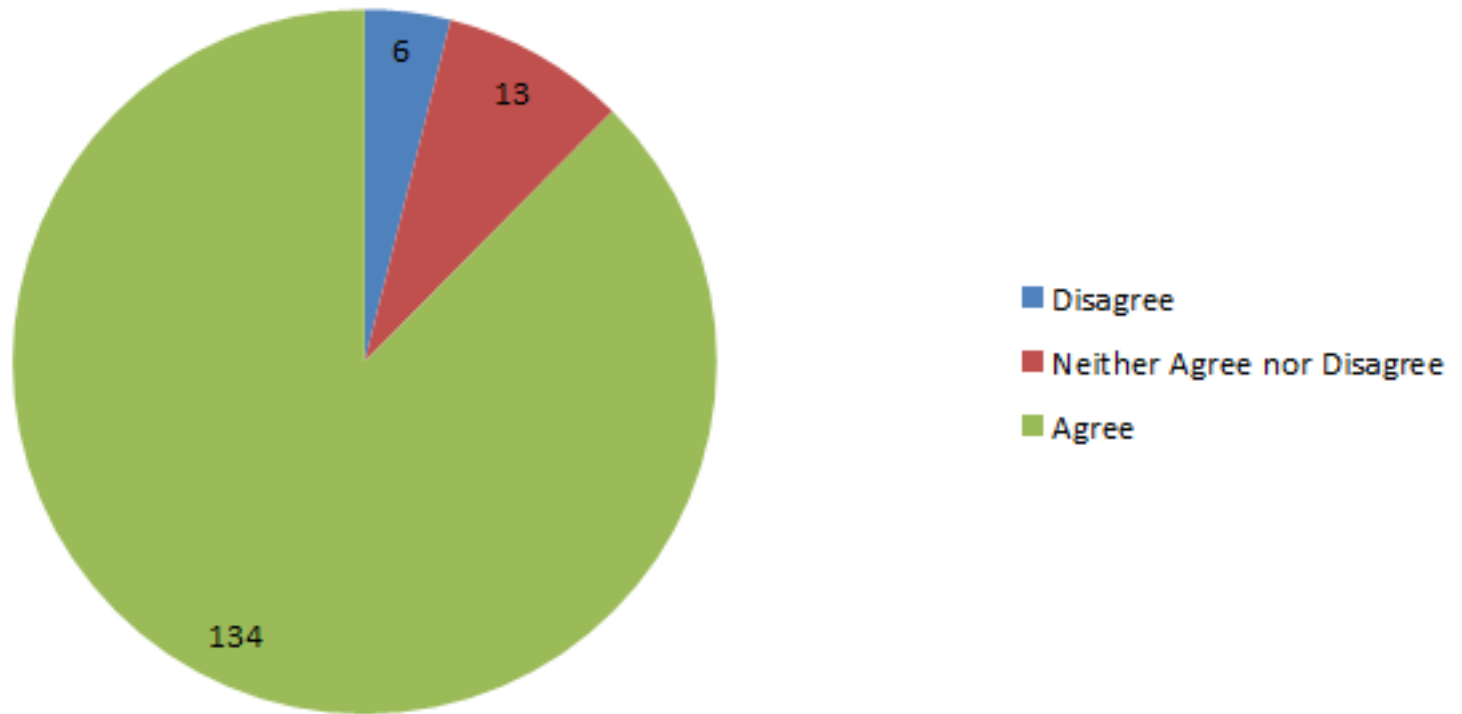
Now that you have participated in this program, what is your opinion about:

Timber insurance will become increasingly more important to own



Now that you have participated in this program, what is your opinion about:

I plan to employ at least some of the techniques discussed today



How do you plan to use the information you learned today?

Logging and advising customers

Earn more income

Better manage public timberland

Manage hardwoods Look for invasive species

Explore insurance options

Manage cattle and tree farm Pass on to others

Use for timber taxes

Work with/hire a forester

Manage timber better

Improve communication with landowners

Use for my business

Make good timber salvage decisions

Manage for natural regeneration

Develop forest management plan

Be a better steward of my land

Lessons Learned

- Terminology makes a difference: climate change versus extreme weather
 - Whose vocabulary should we use – scientists or stakeholders?
- Forest landowners indicate an openness to learning about extreme weather and mitigating consequences
- Participants expressed an interest in timber insurance
- Use the specific threats context stakeholders understand and have experienced
- Tie mitigation options into current management alternatives

Questions?