

Southern Region SIC Climate Smart Forestry Regional Assessment

2022



The SFI 2022 Forest Management Standard has incorporated opportunities for cooperative efforts involving SFI Implementation Committees to meet various Indicators in this standard. SFI Inc. developed a [playbook](#) and hosted a national workshop on March 31 to discuss how Climate Smart Forestry Indicators could be addressed collaboratively.

On September 29th, 2022, SFI hosted a Southern US Regional Workshop specifically to help SICs in that region meet Performance Measures 9.1 and 9.2.

Performance Measure 9.1 Certified Organizations shall individually and/or through cooperative efforts involving SFI Implementation Committees or other partners identify and address the climate change risks to forests and forest operations and develop appropriate adaptation objectives and strategies. Strategies are based on best scientific information.

Performance Measure 9.2 Certified Organizations shall individually and/or through cooperative efforts involving SFI Implementation Committees or other partners identify and address opportunities to mitigate the effects associated with its forest operations on climate change.

The workshop was facilitated by Todd Ontl, Climate Adaptation Specialist, Office of Sustainability and Climate, USDA Forest Service. The workshop helped SICs:

- Discuss potential climate change risks to SFI-Certified Organizations and develop a regional risk assessment.
- Identify potential adaptation actions to address priority climate impacts and in some cases offer mitigation opportunities.

The full agenda for the meeting can be found in Appendix 1.

The workshop was attended by SIC Participants representing 9 states – Virginia, Georgia, Mississippi, Alabama, Florida, South Carolina, North Carolina, West Virginia, Tennessee – as well as several organizations certified to the SFI Forest Management or Fiber Sourcing standards. A full list of attendees can be viewed in Appendix 2.

The process of the workshop was to:

1. Identify climate change risks to forests,
2. Prioritize risks utilizing a matrix, and
3. Identify opportunities to adapt to risks.

1. Identifying Climate Change Risks

The Southern US climate change risks identified were:

1. **Extreme Weather (storms and hurricanes)** – Increased likelihood of forest damage from extreme events.
2. **Increased damage from pests and invasives** – Greater risk from new and existing insect pests and non-native plant species
3. **Drought / Mortality** – Increased frequency and severity of drought, combined with the impacts of insect's pests on stressed trees, increases tree mortality rates
4. **Increased heavy rainfall** – Enhanced risk of damage to infrastructure (roads, culverts) and associated impacts for access for operations
5. **Increased wildfire** – Greater likelihood of wildfire from increased lightning, drier fuels, and increased fuel loads in forests from tree mortality
6. **Loss or range shift of individual species** – Elevated risk of loss of individual tree species due to loss of suitable habitat from warming temperatures , changing precipitation, and associated impacts.
7. **Regeneration** – Reduced seedling survival from warming temperatures, increased drought impacts
8. **Warming Temperatures and increased safety concerns of forest workers** – Impacts of extreme heat for operations crews
9. **Changing Forest Habitat** - Wetter sites becoming wetter, drier sites becoming drier
10. **Increased costs for forest operators** - Damage from storms, heavy rainfall, regeneration failures from seedling mortality, all add up to increased costs.

2. The risks were prioritized using the matrix below:

The effects of climate change will vary greatly, and some will have a more substantial impact on forest ecosystems and forestry operations. A risk management framework can help to identify the most significant climate change impacts and vulnerabilities and prioritize management responses. Considering these risks broadly across the Southeast region and across all SFI certified organizations can provide a common understanding that individual organizations can use to refine based on their own circumstances. This regional risk assessment is designed to help focus (not limit) an individual organization's climate change efforts.

We will use the risk matrix below to identify the highest-priority issues from among all of the impacts that have been identified.

Risk = the probability of an event multiplied by some measure of its consequence

Assessing Risk

Use the figure to determine the risk rating for each impact or vulnerability (low-high).

1. What is the likelihood of the impact or vulnerability?

- Very likely**— it's already beginning or has already happened
- Likely**— it's imminent that it will happen
- Possible**— there's evidence to support it happening, but depends on other factors
- Unlikely**— there's evidence predominately supporting that it won't happen
- Very unlikely**— it would be against long odds to happen, but it's still possible

2. What is the severity of the impact if it does happen?

Consider forest ecosystem health as well as forestry operations.

Negligible— there is little visible, functional, or economic consequence

Minor— there is some visible, functional, or economic consequence, but within the range of normal variability

Moderate— visible, functional, or economic consequence is slightly outside the range of normal variability

Major— visible, functional, or economic consequence is detrimental to operations and must be addressed for operations to continue

Severe— visible, functional, or economic consequence that results in system failure

		Severity of Impacts				
		Negligible	Minor	Moderate	Major	Severe
Likelihood	Very Likely	Med. Low	Medium	Med. High	High	High
	Likely	Low	Med. Low	Medium	Med. High	High
	Possible	Low	Med. Low	Medium	Med. High	Med. High
	Unlikely	Low	Med. Low	Med. Low	Medium	Med. High
	Very Unlikely	Low	Low	Med. Low	Medium	Med. High

The prioritization was averaged across the different breakout groups and resulted as follows:

Ranking	Climate Change Risk	Rating (Severity / Likelihood)
1	Extreme Weather (Storms and Hurricanes)	High (Severe / Very Likely)
1	Increased wildfires	High (Major / Very Likely)
1	Drought / Mortality	High (Major / Very Likely)
4	Increased Invasives, Pests and Pathogens	Med High (Major / Likely)
5	Heavy Rainfall	Med High (Major / Likely)
6	Regeneration	Med (Moderate / Likely)
7	Changes in Forest Habitat	Med (Moderate / Likely)
8	Warming temperatures and increased safety concerns of forest workers.	Med Low (Minor / Likely)
9	Loss or range shift of individual species	Med Low (Minor / Possible)
10	Increased costs for forest operators	Low (Negligible / Likely)

The final portion of the workshop was to identify adaptation and some associated mitigation strategies to address the top 5 risks. The adaptation ideas are separated into two categories of action for SICs (SIC) and Certified Organizations (CO). This yielded the following table (a further list of adaptation actions can be found at the [Menu of Adaptation Strategies and Approaches – Developed for forests](#)):

Risk	Impacts	(CO /SIC) - Adaptations / Mitigations when applicable
Extreme Weather Storms and Hurricanes	Increased likelihood of forest damage	(CO) – Mitigation/Adaptation – Ensuring prompt regeneration after events (CO) – Adaptation – Adaptive salvage plans to better handle occurrences (CO) – Adaptation/Mitigation – Planting of native species / restoration of appropriate ecosystems. (SIC / CO) – Adaptation - Review water BMP's for effectiveness while continuing to use enhanced BMP measures. (CO) – Adaptation - Development/Update management plans that address future uncertainty (CO) – Adaptation / Mitigation – Consider shorter thinning rotations (CO) – Adaptation - Edge feathering of stands to increase resistance (CO) – Adaptation - Consider divesting of high risk properties (CO) – Adaptation -Thinning to a higher Trees Per Acre (TPA) for resistance to events (CO) – Adaptation - Support outlets for salvage timber (CO / SIC) – Support logger training on salvage operations
Increased Wildfires	Greater likelihood of wildfire from increased lightning,	(CO) – Adaptation / Mitigation – Increase thinning's to reduce density of stands

	drier fuels, and increased fuel loads in forests from tree mortality	(CO) – Adaptation – Maintain access and natural barriers for improved firefighting/prevention. (SIC / CO) – Adaptation / Mitigation – Increase in education and awareness (CO) – Adaptation - Increase controlled burn frequency (CO) – Mitigation / Adaptation – Increase diversity in tree size and age to increase resilience.
Increased Drought / Mortality periods	Increased tree mortality	(SIC / CO) – Adaptation – Support improved tree genetics (CO) – Adaptation – increased control of competition to reduce effects of drought. (CO) – Promote healthy stands - Manage to desired trees per acre - Increased thinning - Proper species for the site (CO) – Adaptation - Adaptive salvage harvest plans (CO) – (Adaptation) Increase utilization of containerized seedlings (CO) – (Adaptation) Promotion of tree size an age diversity in stands and across large landscapes to increase resistance. (CO / SIC) – Adaptation – Assess drought vulnerabilities and landscape changes to employ aggressive adaptive management strategies and monitor effectiveness to adapt future strategies.
Increased Invasives, Pests and Pathogens	- Increased tree mortality - Increased cost to maintain forest	(CO) - Enhance /implement internal procedures to reduce spread (CO) – Adaptation - encourage stand and landscape level age and species diversity (CO) – Adaptation - Increase monitoring and early intervention strategies (CO)– Adaptation – Adaptive salvage plans (CO) – Adaptation – Increase frequency of thinning's to maintain tree vigor (CO) – Adaptation - Manage soil disturbances when thinning (CO) – Promote healthy stands - Manage to desired trees per acre - Increased thinning - Use proper species for the site - Use of prescribed fire - Treating seedlings against pests (SIC / CO) – Adaptation – Support improved tree genetics (CO) – Adaptation - Promotion of tree size an age diversity in stands and across large landscapes to increase resistance. (CO) – Adaptation - Increase monitoring

		(SIC) – Adaptation - Share best practice across landowners in region. (SIC) – Adaptation / Mitigation – public outreach on prevention of invasives (SIC / CO) – Adaptation – Support research to focus on control (CO) – Adaptation / Mitigation – Implement and/or support invasive eradication plans
Heavy Rainfall	Enhanced risk of damage to infrastructure (roads, culverts) and associated impacts for access for operations	(CO) – Adaptation – Increased monitoring of road conditions (CO) – Adaptation – Use of BMP's (culverts, waterbars, turnouts) (CO) – Adaptation – Having an adequate road budget to upgrade infrastructure (CO) – Adaptation – Loggers performing close-out during harvest instead of waiting until the end. (CO) – Adaptation – Increase utilization of enhanced BMP's (Fords, wider SMZ's, larger culverts) (CO) Adaptation – Consider timing of harvests during heavy rainfall periods. (CO / SIC) – Adaptation - Consider renewing logger training on BMP's (CO) – Adaptation – match best contractor based on equipment and know how to logging conditions.

This SIC CSF report aligns within the broader US Southern regional climate strategies and adaptations found in:

1. <https://www.mdpi.com/1999-4907/13/9/1460/pdf?version=1662885831> as adaptations are similar to this report such as: improved genetics, site prep, weed and woody control, thinning's, and research.
2. <https://southernforests.org/news-events/southern-perspective/TopFiveThreats/> as Risks are similar to this report such as: Wildfires, and Pest/Invasives/Pathogens.

This report is intended to serve as a resource for climate smart forestry and does not constitute a complete list of adaptations. As further risks and adaptations are realized, this report should be updated accordingly.

Appendix 1

Southern States SIC Regional Climate Change Workshop Thursday, September 29th, 2022

PURPOSE & OBJECTIVES

The 2022 SFI Forest Management Standard includes a new Objective on “Climate-Smart Forestry,” which sets expectations for SFI certified organizations related to climate change risk assessment, adaptation, and carbon management. The Climate-Smart Forestry Objective also introduces new opportunities for engagement and collaboration via the SFI State Implementation Committees (SICs). This regional workshop is designed to help the SICs in the southern states exchange ideas and provide some regional information for SFI certified organizations, which they can use as a starting point.

Specifically, this workshop will help the SICs to:

- Discuss potential climate change impacts to SFI certified organizations and SFI managed forests and develop a regional risk assessment
- Identify potential adaptation actions to address priority climate impacts
- Determine how SICs will share this information with SFI certified organizations

Outcomes:

1. A ranked list of climate impacts and vulnerabilities for the southeast region
2. An initial list of adaptation actions for SFI certified organizations to consider

WORKSHOP PRE-WORK

1. Explore climate change information:
 - a. Emerging Forest Threats – [State Fact Sheets](#) (work in progress)
 - b. State Climate [Summaries](#)
 - c. Drought Impacts in the Southern Region [report](#)
2. Share your climate change concerns and questions with this short survey by [ASAP](#):
<https://tinyurl.com/rmt2n682>
3. Review the [Climate-Smart Forestry Objective](#) in the 2022 SFI Forest Management Standard
4. Review the SIC [Climate Smart Forestry Playbook](#)

WORKSHOP AGENDA

Location: Embassy Suites, 4700 Southport Rd, Atlanta, GA

9:00 **Introduction (Gordy)**

- Welcome & Introductions
- Workshop Purpose
- Connection to SFI Playbook for Climate-Smart Forestry
- Antitrust Statement

9:20 **Presentation: Climate and Forests (Mac Callahan, USDA Southeast Climate Hub)**

10:20 **Climate Impacts & Vulnerabilities (Todd)**

The goal is to create a list of the climate change impacts that are of greatest concern for SFI certified organizations and SFI managed forests. We will be considering these impacts broadly at the regional level, so we don't need to discuss these items in extreme detail. This list does not have to include every potential impact.

- Share a summarized list of climate impacts that were identified as part of the pre-work survey.
 - Review each making sure that everyone understands the issue, adding additional detail or clarification as needed.
 - Ask what other climate impacts may be missing that were not captured in the survey responses.
- Have a good discussion of climate impacts
- Don't worry about rating or ranking impacts at this point – just get the ideas down
- Gordy take Notes in Step 2 worksheet.

11:00 **Break**

11:15 **Risk Assessment – State Groups (Todd)**

The goal is to understand which climate impacts create the most concerning risks to SFI certified organizations in the region. Risks may related to the health and condition of certified forests, or they relate to the forestry operations of SFI certified organizations (e.g., infrastructure damage due to extreme rainfall). We will use a risk assessment process to evaluate how individual risks may broadly affect SFI certified organizations in the region, and then prioritize them.

- Present slides to explain process. Time frame is next 20 years. = 15 minutes [Provide an example to illustrate how to rate likelihood and severity.]
- Break into small groups by state. Each group should look at the list of climate impacts and select 5 items to evaluate using the prioritization process. You can pick any 5 based on what you think will be the most important or things you'd like to think about in more detail as a group.
- ~30 min group work time. For each item, groups should:
 - Evaluate likelihood that it will happen
 - Evaluate severity if the impact does happen – effects on forests and operations
 - Create overall risk rating
- While group is working, put diagram up in a place where people can view it (if possible).

11:45 **Risk Assessment – Full Group Discussion (Todd)**

- Instruct groups to use sticky notes to place their ratings on the diagram (if possible). Each team gets a different color.
 - Where groups evaluated the same impact, compare and discuss how they rated the risk of these impacts.
 - Then discuss climate impacts where only 1 group rated that impact.
 - Capture notes regarding the risk evaluation or suggestions for possible adaptation responses as appropriate
- After all items have been evaluated, go back and look through risk ratings to determine whether to prioritize items.

- What impacts rise to the top of the list because several groups rated high risk?
- For impacts that are low priority, why is that? Is that okay?
- If we looked at a longer time period, would any ratings or priorities change?
- Finalize Step 3 worksheet.

12:15 **Lunch**

1:00 **Complete Risk Assessment & Review Risk Ratings**

Buffer time if needed, otherwise move ahead!

1:15 **Climate Change Adaptation Concepts (Todd)**

Presentation on management options to help forests adapt to changing conditions. Introduce menus of adaptation strategies and approaches and describe how they can be used to connect big ideas to more targeted actions. For this workshop, the SICs will be discussing adaptation actions that could be broadly applicable across the region, rather than specific tactics to implement on individual ownerships.

1:45 **Identify and Evaluate Adaptation Actions – State Groups (Todd)**

Goal is to brainstorm a list of actions that SFI certified organizations could take to address the highest-priority risks. This list will be a starting point for individual organizations to consider.

- Break into small groups. Each group should consider the list of high-priority climate impacts.
- For each high-priority impact, use the worksheet to:
 - Brainstorm ~5 potential adaptation actions that could be broadly applicable to respond and adapt to the risk, trying to get many people to provide suggestions. Teams can use any of the NIACS menus to generate ideas or come up with their own.
 - Consider urgency, barriers, opportunities, and capacity for implementation

2:30 **Break**

2:45 **Identify and Evaluate Adaptation Actions – Large Group Discussion (Todd)**

- Groups report out
- Gordy takes notes to complete Step 4 worksheet

3:30 **Summarize & Next steps (Gordy)**

Items for discussion:

- Are there any big takeaways or ‘ahas’ from the discussion?
- Are there gaps or ideas we didn’t discuss?
- How can we compile this information so individual certified organizations can carry the ball forward?
- What are some concrete next steps?

4:00 **Adjourn!**

Appendix 2

Attendee List

Name	Organization
Ashley Smith	AL SIC
Noah Shepard	Auburn University
Russell Hatcher	Boise Cascade
Travis Schmitt	Clemson
Trevor Stame	Clemson
Steve Fowler	DS Smith
Reid yates	Four River Land and Timber Company
Tim Gahl	FRC
Chase Cook	GA SIC
Erin Novak	GP
Rich Haddock	Green Diamond
Tom Morgan	Green Diamond
Brad Murfee	Green Diamond
Mark Waterman	Green Diamond
Emily Newburg	IP
Andrew Carroll	Jamestown
John Auel	Mississippi SIC / MFA
Zachary Tidwell	Molpus
Kathleen Ellis	Potlach Deltic
Kevin Gallagher	Resolute
Jeff Green	RMS
Paul Lambert	RMS
Kristie White	RMS
Guy Sabin	SC SIC / FASC
Gordy Mouw	SFI
Teri Frye	TN SIC
Todd Ontl	USDA
Anne Taylor	VFA
Aprille Cook	Westervelt
Eric Carlson	WV SIC / WVFA