



SFI IMPLEMENTATION COMMITTEE PLAYBOOK CLIMATE SMART FORESTRY

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INTRODUCTION TO SIC PLAYBOOKS

The requirements of the 2022 SFI Standards for Forest Management and Fiber Sourcing introduce new opportunities for engagement and collaboration via the SFI Implementation Committees (SICs). These opportunities focus on new or enhanced elements of the SFI Standards including Climate Smart Forestry, Fire Resilience and Awareness, and Conservation of Biodiversity (Forests of Exceptional Conservation Value - FECVs). In a recent survey conducted by SFI, an overwhelming majority of SFI certified organizations indicated interest in collaboration via the SICs on these requirements.

In response, SFI is developing a set of *SIC Playbooks* that provide resources and actionable tips for SICs. The SIC Playbooks draw from and build on the resources and information provided in the [SFI Standard Guidance](#) but go further in outlining specific steps and resources that could be mobilized by SICs. In addition to this SIC Playbook on Climate Smart Forestry (2022 Forest Management, Objective 9), an SIC Playbook on Biodiversity in Fiber Sourcing (2022 SFI Fiber Sourcing, Objective 1) is also available. A Playbook on Fire Resilience and Awareness (2022 Forest Management Objective 10) is in development. Others may also be developed in response to needs and requests of SICs.

An Iterative Tool: Please Send Us Your Feedback + Suggestions

In response to growing interest, this [Climate Smart Forestry SIC Playbook](#) is released as a resource that SICs can begin using immediately. However, it is a tool that will be refined as it gets utilized. SICs and certified organizations are encouraged to let the SFI team know what is helpful and what could be improved. We are also seeking suggestions for the best regional resources, as well as ideas and best practices that your SIC has identified in implementing the Climate Smart Forestry SIC Playbook in your region, state or province. Please provide feedback and suggestions to Nadine Block, SFI Senior VP Community and Government Relations, at nadine.block@forests.org.

SICs offer a venue in which SFI-certified organizations can collaboratively undertake high leverage activities to meet SFI certification requirements in a cost efficient, expeditious and mutually beneficial way. Activities conducive to such collaboration constitute focal areas within the SIC Playbooks and tend to focus on shared resources, tools and services that can be modified and/or deployed in the context of an SFI-certified organization's specific operations. Activities that lend themselves to such collaboration may include but are not limited to:

- Gathering and analyzing best scientific information: Includes biological and other datasets; legislation, policy, and planning documents; academic research; etc.
- Engagement in or support of research: Research can have benefit for the collaborating SFI-certified organizations in a “pre-competitive” fashion.
- Identifying best practices: SICs can draw on the experiences and knowledge of SFI-certified organizations to identify and mutually share best practices that can be implemented in the context of SIF certified operations.
- Development and presentation of educational and informational materials: Audiences may include wood producers, loggers, foresters and others.

ASSESSING THE TRADEOFFS: WHERE SHOULD AN SIC FOCUS?

Many SICs support a range of important ongoing functions. With the introduction of the SFI 2022 Standards and new opportunities for collaboration on Climate Smart Forestry, Biodiversity/FECVs, and Fire Resilience/Awareness, SICs are encouraged to review their existing activities, along with new opportunities for collaboration, to assess tradeoffs and identify priorities for the SIC over a given timeframe.

CLIMATE SMART FORESTRY SIC PLAYBOOK

While many SFI certified organizations have been implementing forest management with an eye toward climate for years, specific elements to address Climate Smart Forestry are entirely new with the 2022 SFI Forest Management standard. With this, many SICs are seeking actionable advice to help them get started.

Ultimately, certified organizations are responsible for demonstrating conformance. However, SICs are positioned to support coordinated, strategic and streamlined implementation of these requirements, which will lead to greater impact through the SFI Standards. This SIC Playbook is designed to give SICs a set of resources and functional steps to operationalize the Climate Smart Forestry requirements in their states and provinces.

A clear benefit of coordination at the SIC level is that certified organizations can share the work of data gathering, identifying strategies for implementation, and developing best practices that certified organizations can, then, adopt, modify and implement in the context of their specific management strategy and forest lands.



WHO CAN USE THE SIC PLAYBOOK?

Many of the steps outlined in the SIC Playbook, especially Steps 1-3, may be implemented at the SIC level or at a regional level by a group of SICs.

IS USING THE SIC PLAYBOOK REQUIRED?

No. The SIC Playbook draws from and builds on the resources and information provided for Objective 9 in the [SFI Standard Guidance](#) to provide a system for practical and collaborative implementation. As such it is important to note:

- Use of the SIC Playbook is NOT required by SFI or auditors
- The SIC Playbook is NOT considered normative

ASSESSING THE TRADEOFFS: WHERE SHOULD AN SIC FOCUS?

Many SICs support important ongoing functions including logger training, landowner outreach and other activities. With the introduction of the 2022 SFI Standards and new opportunities for collaboration on Climate Smart Forestry, Fire Resilience, and Biodiversity/FECVs, SICs are encouraged to review their existing activities, along with new opportunities for collaboration, to assess tradeoffs and identify priorities for the SIC over a given timeframe.

HOW DOES THE CLIMATE SMART FORESTRY SIC PLAYBOOK WORK?

While demonstration of conformance lies with individual certified organizations, SICs can play an instrumental, supportive role. The SIC Playbook is designed to identify activities that may be undertaken in collaboration at the SIC level and provide a basis for action by certified organizations.

The Climate Smart Forestry requirements are structured a bit like a funnel. They begin wide with the gathering of the best scientific information and identifying climate related risks, focal issues, and strategy options. The approach then narrows, as certified organizations further refine, select, and implement the management techniques that are most appropriate for their operations and land base.

The sequence of steps below is focused on the wide end of the funnel, with activities that SICs can undertake to support coordinated action before handing off for further customization and implementation of forest management to certified organizations.

IS REGIONAL COORDINATION AN OPTION?

Yes. Because much of the best scientific information on climate and forests is developed and aggregated at a regional level, the Climate Smart Forestry requirements of the 2022 SFI Forest Management Standard may be particularly well suited to regional coordination, allowing for greater efficiency. As such, SICs may explore options to collaborate with SICs in neighboring states and provinces in implementation of the SIC Playbook. Steps 1-4 may be especially well suited to regional collaboration.

1. GETTING ORGANIZED	
To promote efficiency, review the SIC Playbook steps in advance, get organized and develop a plan for how to tackle it.	
	Big picture: Review the SIC's existing activities, as well as emerging opportunities associated with the 2022 SFI requirements related to Climate Smart Forestry, Fire Resilience, and Conservation of Biodiversity/FECVs. Identify top priorities and an overall timeline to address them.
	Calendar + teams: Review the SIC calendar for critical dates and your existing schedule of meetings. This will help the SIC and subcommittees create a timeline for each step. Some of the steps may be best suited to a smaller group that brings back information for consideration and decisions at the larger group level. Determine which activities may need a subcommittee and which are full SIC activities.
	Tips: - Hold an initial SIC call/meeting to review the Climate Smart Forestry SIC Playbook as a group to plan out the timing and dependencies of each step. - Ask: Will additional meetings or calls be needed? When should we hold them?
	Regional collaboration: Consider potential and options for collaboration with SICs neighboring states and provinces. Tips: - Some certified organizations have representatives participating in SICs several states and could help support coordination. - SFI will hold regional breakout sessions during virtual workshops and the June 2022 SFI Annual Conference; this may also be an opportunity to connect and/or share learning and best practices.
	Support: Utilize national SFI staff for help as you develop your plan.
2. REVIEW THE 2022 STANDARDS	
Orient to the Climate Smart Forestry requirements and how they relate to the broader SFI Forest Management Standard.	
	Review: Objective 9 Climate Smart Forestry requirements and guidance .
	Crosswalk: Some of the Climate Smart requirements (9.1.2, 9.1.3, 9.2.1 and 9.2.2) make reference to other parts of the 2022 SFI Forest Management Standard including inventories and reforestation, etc. Review these to ensure continuity for implementation and documentation for management planning and auditing purposes. See Appendix B for Crosswalk.
	Tip: Keep this crosswalk handy so that you can refer to it, as needed, and document connections to the risks, priorities and management options identified in the steps below.

3. BEST SCIENTIFIC INFORMATION

Gather the resources, research and documents to support Climate Smart Forestry, including risk assessments, adaptation strategies, and Greenhouse Gas (GHG) emissions models and tools.

National/regional resources: Many excellent guides have been developed by US and Canadian federal agencies and others that address national and regional considerations and/or provide guidance. Many of these represent “one-stop” resources and are a great starting place.

United States

- [Climate Hubs](#) (USDA Forest Service NRS): Linkage to regional data, reports and resources, including:
 - o [Forest Service Vulnerability Assessments](#) (USDA): Provides climate change vulnerability assessments from around the U.S. Examples include:
 - [Midwest/Northeast](#)
 - [New England and Northern New York](#)
- [USDA Climate Vulnerability Assessments](#): Describes the various kinds of assessments and links to [interactive assessment StoryMap and dashboard](#).
- [The Adaptation Workbook](#) (USDA Forest Service/NIACS): Explore climate impacts for different regions of the USA. Use the Adaptation Workbook process to create a custom climate adaptation plan for a property or ownership. Browse menus of forest adaptation strategies and approaches for a variety of topics – forest management, wildlife, forest carbon, watershed management, and more.
- [Forest Adaptation Resources: Climate Change Tools and Approaches](#) (USDA Forest Service NRS): Describes the Adaptation Workbook process and contains a menu of climate adaptation strategies and approaches for forest management.
- [Forest Management for Carbon Benefits](#) offers a synthesized, forest-specific summary of considerations derived from [Considering Forest and Grassland Carbon in Land Management](#) and options for mitigation or to enhance climate benefit of forests.
- [Management of Forest Carbon Stocks](#) provides options for enhancing the climate benefits of forests.
- [Climate Change Tree Atlas](#) (USDA Forest Service NRS): Modeled potential habitats for a range of eastern species.
- [Climate Change Resource Center](#) (USDA): Provides an index of tools intended to help land managers incorporate climate change and carbon stewardship into their decision-making. Tools range from specialized calculators to maps or models covering a variety of scales and geographical regions.
- [Fourth National Climate Assessment](#) (US Global Change Research Program).
 - o Northeast: [Fourth National Climate Assessment: Northeast](#)
 - o Southeast: [Fourth National Climate Assessment: Southeast](#)

	○ Lake States: Fourth National Climate Assessment: Midwest ○ Pacific Northwest: Fourth National Climate Assessment: Northwest ○ Intermountain West and Plains: Fourth National Climate Assessment: Northern Great Plains <u>Canada</u> - Vulnerability of Canada's Tree Species to Climate Change and Management Options for Adaptation (CCFM): Provides vulnerability assessment and management options. - Adapting Sustainable Forest Management to Climate Change: Preparing for the Future (CCFM): Presents an approach for adapting SFM to a changing climate and summarizes a suite of tools and products. - Climate Change and Sustainable Forest Management in Canada: A Guidebook for Assessing Vulnerability and Mainstreaming Adaptation into Decision Making (CCFM): Offers trends and scenario modeling, along with tools for prioritization and management options. - Canadian Centre for Climate Services (CCCS): Offers a suite of resources including climate atlas and case studies along with analytics and visualization for climate science. - Forest Change Adaptation Tools (NRCAN): A palette of tools and resources to support forest adaptation including modeling, climate and disturbance projections and tools, etc. State/provincial forest resources: Reach out to state/provincial forest agency leaders to gather and review any local climate assessments and plans. Examples include: - State-level Climate Summaries (NOAA): Trends and future climate projections for each state. - California: Adaptation Planning Guide - Idaho: Idaho Climate Economy Impacts Assessment - Strategic Climate Risk Assessment Framework for British Columbia - A range of applied science resources are available for British Columbia including vulnerability assessments in planning, timber supply range and productivity (British Columbia). - New Brunswick Federation of Woodlot Owners has compiled an index of plans, silvicultural tools and other resources. - Ontario's overview of managed forests and climate change resources. Tip: Ask: Is there a climate plan that applies to your state/province? In a Step 6 below, you will refer to how adaptation plans and options that could be implemented by Certified Organizations fit into these wider local/regional climate plans.
	Draw on other experts and resources:

	- Reach out to partners at local universities to gather the latest publications on climate impacts and management options. - Consider asking regional/state/provincial experts to be a resource as your SIC reviews materials to field any questions and/or join an SIC meeting. Greenhouse gas (GHG) related resources: Review resources for identifying sources of GHG emissions and options for reductions. Resources are available: - US Environmental Protection Agency Tip: Some of the national and regional climate and forest resources identified above may also provide information on GHG emissions and strategies for the forest sector. SFI Guidance: Objective 9 SFI Standard Guidance
4. IDENTIFY + PRIORITIZE CLIMATE CHANGE RISKS This is a place where SICs can add value by refining the sets of identified climate change risks most relevant to their state or region, as well as flag risks that may be most relevant for specific ecosystems that could affect different kinds of companies or management operations. This is also an area in which companies can think strategically together about the greatest threats and opportunities to their sector, to support both collaborative and individual action.	
	Identify: Drawing on the best available data gathered in the step above, identify the risks (or vulnerabilities) posed by climate change (9.1.1). Prioritize: To the extent appropriate or possible at the SIC level, prioritize the risks based on (9.1.1): - likelihood - nature - severity of expected impact to forest lands Tip: It may be useful considering how these risks may affect forests and, as a result, the certified organization and the wider forest sector. Example: Reviewing a range of resources, including a USDA Forest Service report Effects of climatic variability and change on forest ecosystems and the Fourth National Climate Assessment: Southeast, an SIC in the US Southeast finds that extreme rainfall events have increased in frequency and intensity in the Southeast, and will continue to increase in the future. Given that several certified organizations have experienced increased precipitation in recent years on the company-owned lands, the SIC identifies this risk as a priority to work on.

5. IDENTIFY OPPORTUNITIES TO ENHANCE CLIMATE BENEFITS

SICs can draw on their own operations and experiences to generate and refine management options or “best practices” that can be used by companies locally to enhance the benefits of responsible forest management implemented under SFI certification. These can also support collaborative or coordinated efforts to demonstrate climate action on a greater scale.

If possible and appropriate at the SIC level, identify opportunities to enhance climate benefits (9.2.1), using the information gathered.

Tip: Refer to the related portions of the 2022 SFI Forest Management Standard. Ask: What are the greatest climate benefits of responsibly managed forests? Can we do anything to “dial up” that impact?

Example: An SIC in the Northeast US reviews aggregated documents including USDA publication [Considering Forest and Grassland Carbon in Land Management](#) and develops a general set of best practices for use by certified organizations in the state. These include:

- Maintaining forest coverage to maintain both carbon stored in forests and the capacity to continue sequestering additional carbon.
- Increasing afforestation to promote sequestration through well managed forests.
- Decreasing forest carbon loss through reduced harvest intensity, lengthening rotations, increased stocking, and structural retention.
- Continued production of forest products to support carbon storage in harvested wood products and use of bioenergy as replacement for fossil fuels.

Identify opportunities to enhance ecosystem resilience (9.2.2) in response to the climate threats prioritized in the step above, using the gathered data.

Tips:

- Refer to Crosswalk with 2022 SFI Forest Management Standard (see Appendix B).
- Ask: Are there additional steps or refinements that could be made to elevate the resilience of forests and make them more able to “bounce back” in light of the risks we have identified and prioritized?
- Ask: Can we create a set of best practices for our state or province, drawing on both the information gathered and experiences of certified organizations?

Example: An SIC in the western US or Canada has reviewed the best scientific information including [Fourth National Climate Assessment: Northwest](#) and found that climate conditions are expected to continue to increase wildfire in the region, as warming trends impact vegetation and reduce snowpack. Forest structure and composition may interact

	with longer and drier growing seasons to increase the risk of wildfire. Mortality from climate-related disturbances can lead to increases in fuel loading, which can increase the risk or severity of fire. Although some forest types are tolerant of or dependent on fire, extremely hot fires can destroy seed banks, sterilize soils, induce hydrophobic soil conditions, or cause tree mortality. As such, the SIC prioritized wildfire risk as an issue to focus on in Step 4 above. The SIC identified the following list of best practices to enhance ecosystem resilience that could be implemented in the state of province: - Using prescribed fire and thinning to reduce surface fuels, increase height to live crown, decrease crown closure, and create a more open forest structure that is expected to be less vulnerable to severe wildfire - Using prescribed fire to maintain open conditions in ecosystems at lower elevations as a means of reducing fuels and the risk of wildfire in ecosystems at higher elevations - Promoting fire-resistant species, such as hardwoods, in buffer zones between more flammable conifers to slow the movement of wildfires - Physically removing dead or dying trees or other vegetation to reduce surface and ladder fuels, while minimizing exposure to invasive plants, pests, or pathogens. - Using herbicide or mechanical thinning to prevent the encroachment of woody competitors and invasive species, especially after disturbance.
6. IDENTIFY ADAPTATION OPTIONS This is an area where SICs bring local knowledge and share experiences, as well as develop a refined set of management options or “best practices” for use by companies at the local level in their state/region, as well as across the sector to address broader sectoral challenges, threats and opportunities. This activity can also provide a pathway by which coordinated climate action can be demonstrated and tracked.	
	Identify adaptation options (plans) for the prioritized risks, using the best scientific information gathered. Refer to the menus of adaptation strategies and approaches developed by NIACS. The CCRC keeps a broader list of adaptation actions called the Compendium of Adaptation Approaches, collected from resources across the country: https://www.fs.usda.gov/ccrc/climate-projects/adaptation-approaches
	Link: Connect the adaptation options with the various elements of the SFI standards (9.1.2) - Note those specific areas in the standard that this requirement touches and how implementation/fulfillment may be affected (9.1.2) Tips: - Refer to Crosswalk with 2022 SFI Forest Management Standard (see Appendix B).

	- Ask: Are there additional steps or refinements that could be made to help forests adapt to the risks we have identified and prioritized? - Ask: Can we create a set of best practices for our state or province, drawing on both the information gathered and experiences of certified organizations? Example: Having identified increased frequency and intensity of extreme rainfall events as a priority, an SIC in the US Southeast draws on the USDA Forest Service Forest Adaptation Resource to develop a set of best practices for adaptation that could be used by SFI certified organizations in their state. These include: - Ongoing use of BMPs and RMZs. - Upgrading culvert size and cleaning culverts regularly to accommodate changes in peak flow and thus reduce damage to infrastructure and the environment during heavy rain events. This example may also incorporate ecologically based stream crossing designs that allow passage for aquatic organisms. - Anchoring with fabric, wire, or natural materials to stabilize eroding stream banks. - Creating buffers along riparian areas with reduced or no harvest based on the landform, hydrology and vegetation of the riparian zone in addition to any recommended buffer distance. Describe: How each adaptation option refers to and fits into the wider strategy outlined the regional/state climate plans (9.1.3) reviewed in the step above.
7. GREENHOUSE GAS EMISSIONS SICs may be able to draw on their knowledge of common practices locally, relevant legislation, as well as document undocumented actions and changes that demonstrate conformance with these requirements. These can be handed off to certified organizations for implementation.	
	Identify: - Key sources of GHG emissions in forestry operations, generally - Options for reduction (9.2.3) using the resourced gathered in the step above. Tips: Ask: Can we create a set of best practices for our state or province, drawing on both the information gathered and experiences of certified organizations. Example: An SIC reviews USDA publication Considering Forest and Grassland Carbon in Land Management and related cited publications to identify GHG emissions associated with different harvest methods to develop a list of best practices for consideration and use by member certified organizations.

APPENDIX A – CLIMATE SMART FORESTRY REQUIREMENTS, SFI FOREST MANAGEMENT STANDARD OBJECTIVE 9

Objective 9. Climate Smart Forestry.

To ensure forest management activities address *climate change adaptation and mitigation* measures.

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*.

Indicators:

1. Based on *best scientific information*, *Certified Organizations* shall identify *climate change* risks and prioritize them based on the likelihood, nature, severity of their expected impact to their forest lands or forest tenures.
2. *Certified Organizations* shall develop an *adaptation* plan to address priority *climate change* risks, via effective implementation of the *SFI 2022 Forest Management Standard* requirements for potential adaptive management including:
 - a. periodic updates of *forest inventory* and recalculation of planned harvests as appropriate to account for changes in growth due to *productivity*
 - b. increases or decreases, including improved data, *long-term* drought, fertilization, *climate change*, or *forest health*;
 - c. access to *growth and yield modeling* capabilities;
 - d. documented harvest trends within *long-term* sustainable levels identified in the forest management plan, and
 - e. appropriate research, testing, evaluation, and deployment of *improved planting stock*, including *varietal seedlings*.
3. *Certified Organizations* shall document how their *adaptation* plan objectives and strategies fit within broader regional *climate adaptation* strategies and plans, where they exist.
4. *Certified Organizations* shall report annually to SFI Inc. their progress towards achieving *climate change adaptation* strategies and plans.

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*.

Indicators:

1. Based on *best scientific information*, *Certified Organizations* shall identify and address opportunities to enhance the climate benefits associated with forest management operations on the forests they own or manage via effective implementation of the *SFI 2022 Forest Management Standard* requirements such as:
 - a. Objective 2 – Forest Health and Productivity; Objective 10 – Fire Smart Forestry; and/or other silvicultural or operational *practices* to enhance the climate benefits associated with their forest operations.
2. Based on *best scientific information*, *Certified Organizations* shall identify and address opportunities to enhance ecosystem resilience for the forests they own or manage via effective implementation of the *SFI 2022 Forest Management Standard* requirements including:
 - a. prompt *reforestation* or planned *natural reforestation* as per Indicator 2.1.1;
 - b. adequate regeneration and appropriate actions to correct understocked areas, and
 - c. evaluation for *afforestation* of areas that are not *ecologically important*, and
 - d. *protection* of desirable or planned advanced regeneration during harvest and the retention of vigorous trees during partial harvest.
3. Based on *best scientific information*, *Certified Organizations* shall develop a *program* to identify and address greenhouse gas emissions within their operational control.
4. *Certified Organizations* shall report annually to SFI Inc. their measures to mitigate *climate change* associated with forest operations.

APPENDIX B – CLIMATE SMART FORESTRY CROSSWALK: LINKING OBJECTIVE 9 TO THE BROADER SFI FM STANDARD

Climate Smart Forestry Requirement	9.1.2 Certified Organizations shall develop an adaptation plan to address priority climate change risks, via effective implementation of the SFI 2022 Forest Management Standard requirements for potential adaptive management including: a. periodic updates of forest inventory and recalculation of planned harvests as appropriate to account for changes in growth due to productivity increases or decreases, including improved data, long-term drought, fertilization, climate change, or forest health; b. access to growth and yield modeling capabilities; (1.1.1f) c. documented harvest trends within long-term sustainable levels identified in the forest management plan, and d. appropriate research, testing, evaluation, and deployment of improved planting stock, including varietal seedlings
Related SFI FM Standard References	1.1.1 Forest management planning at a level appropriate to the size and scale of the operation, including: a. a <i>long-term</i> resource analysis; b. a periodic or ongoing <i>forest inventory</i>; c. a <i>land classification</i> system; d. <i>biodiversity</i> at <i>landscape</i> scales; e. soils inventory and maps, where available; f. access to and use of <i>growth-and-yield modeling</i> capabilities; g. up-to-date maps or a <i>geographic information system (GIS)</i>; h. recommended sustainable harvest levels for areas available for harvest; and i. consideration of non-timber issues such as recreation, tourism, pilot projects and economic incentive <i>programs</i> to promote water <i>protection</i>, carbon storage, <i>bioenergy feedstock</i> production, or <i>biological diversity conservation</i>, or to address climate-induced ecosystem change.
	1.1.2 Documented current harvest trends fall within <i>long-term</i> sustainable levels identified in the forest management plan.
	1.1.3 A <i>forest inventory</i> system and a method to calculate growth and yield is used to determine annual and/or periodic harvest levels.
	1.1.4 Periodic updates of <i>forest inventory</i> and recalculation of planned harvests to account for changes in growth due to <i>productivity</i> increases or decreases, including but not limited to: improved data, <i>long-term</i> drought, fertilization, <i>climate change</i>, changes in forest land ownership and tenure, or <i>forest health</i>.
	1.1.5 Documentation of forest management (such as: <i>planting</i>, fertilization, and thinning) consistent with assumptions in harvest plans.
	2.5.1 Program for appropriate research, testing, evaluation, and deployment of <i>improved planting stock</i>, including <i>varietal seedlings</i>.

	12.1.1 Financial or in-kind support of research, collaboratives, or knowledge transfer to address key themes of relevance in the region of operations as identified by <i>Certified Organizations</i>, <i>local stakeholders</i>, communities and/or <i>Indigenous Peoples</i>. Examples could include, but are not limited to, the following topics: a. climate change adaptation and mitigation; b. water quality and quantity; c. biodiversity, <i>Forests with Exceptional Conservation Value</i>, and species maintenance and recovery; d. <i>landscape</i> ecology; e. <i>Indigenous traditional forest-related knowledge</i>; f. <i>ecosystem services or non-timber forest products</i>; g. community engagement; h. <i>forest health and productivity</i>; i. support for Forest Inventory Analysis (FIA); j. SFI sponsored conservation research; k. the role of forests in the bioeconomy, and l. or similar themes which build broader understanding of the benefits and effects of sustainable forest management or sustainable supply chains.
	12.1.2 Ensure that knowledge gained through research is shared, to the extent possible, to positively influence sustainable forest management.
Climate Smart Forestry Requirement	9.2.1 Based on best scientific information, Certified Organizations shall identify and address opportunities to enhance the climate benefits associated with forest management operations on the forests they own or manage via effective implementation of the SFI 2022 Forest Management Standard requirements such as: a. Objective 2 – Forest Health and Productivity; Objective 10 – Fire Resilience and Awareness; and/or other silvicultural or operational practices to enhance the climate benefits associated with the forest operations.
Related SFI FM Standard References	1.1.1. i. consideration of non-timber issues such as recreation, tourism, pilot projects and economic incentive <i>programs</i> to promote water <i>protection</i>, carbon storage, <i>bioenergy feedstock</i> production, or <i>biological diversity conservation</i>, or to address climate-induced ecosystem change. 1.1.4 Periodic updates of <i>forest inventory</i> and recalculation of planned harvests to account for changes in growth due to <i>productivity</i> increases or decreases, including but not limited to: improved data, <i>long-term</i> drought, fertilization, <i>climate change</i>, changes in forest land ownership and tenure, or <i>forest health</i>.

	1.2.2, a a response to address <i>forest health</i> issues such as pests or pathogens, or proactive consideration of anticipated impacts of fire or climate change, reforestation challenges, or riparian <i>protection</i> needs, provided that such justification is supported by the <i>best scientific information</i>.
	1.4.1 Any afforestation activity must include an evaluation of the proposed site to determine the presence of: a. ecologically important natural communities, or b. threatened and endangered species, or c. native natural communities that could be at risk of becoming rare.
	1.4.2 Afforestation shall not occur on that location if the evaluation determines a negative impact to: a. ecologically important natural communities, or b. threatened and endangered species, or c. native natural communities which could be at risk of becoming rare.
	<u>Objective 2. Forest Health and Productivity</u> To ensure <i>long-term</i> forest <i>productivity</i>, <i>forest health</i> and <i>conservation</i> of forest resources through prompt <i>reforestation</i>, <i>afforestation</i>, deploying <i>integrated pest management</i> strategies, <i>minimized</i> chemical use, <i>soil conservation</i>, and protecting forests from damaging agents.
	2.1.1 Documented <i>reforestation</i> plans, including designation of all harvest areas for either natural, planted, or direct seeded regeneration and prompt <i>reforestation</i>, unless delayed for site-specific environmental or <i>forest health</i> considerations or legal requirements, through <i>planting</i> within two years or two <i>planting</i> seasons, or by planned <i>natural regeneration</i> methods within five years.
	2.1.2 Clear criteria to judge adequate regeneration and appropriate actions to correct understocked areas and achieve acceptable species composition and stocking rates for <i>planting</i>, <i>direct seeding</i>, and <i>natural regeneration</i>.
	2.1.4 Retention of vigorous trees during partial harvesting, consistent with scientific silvicultural standards for the area.
	2.3.1 Process to identify soils vulnerable to compaction, and use of appropriate methods, including the use of soil maps where available, to avoid excessive soil disturbance.
	2.3.2 Use of erosion control measures to minimize the loss of soil and impacts to site productivity.
	2.3.3 Post-harvest conditions conducive to maintaining site productivity (such as: retained down woody debris and minimized skid trails).
	2.3.4 Retention of vigorous trees during partial harvesting, consistent with scientific silvicultural standards for the area.
	2.3.5 Practices that address harvesting and site preparation to protect soil productivity and soil health.

	2.3.6 Road construction, skidding layout, and harvest plans designed to minimize impacts to soil productivity and soil health.
	2.4.1 <i>Program to protect forests from damaging agents.</i>
	2.4.2 Management to promote healthy and productive forest conditions to reduce susceptibility to damaging agents.
	2.4.3 Participation in, and support of, fire and pest prevention and control <i>programs</i> .
	2.5.1 <i>Program for appropriate research, testing, evaluation, and deployment of improved planting stock, including varietal seedlings.</i>
	4.1.2 Development of criteria and implementation of practices, as guided by regionally based best scientific information, to retain stand-level wildlife habitat elements such as snags, stumps, mast trees, down woody debris, den trees and nest trees.
	4.1.6 Identification and protection of non-forested wetlands, including bogs, peatlands, fens and marshes, and vernal pools that are ecologically important.
	4.2.3 Support of and participation in programs for the conservation of old-growth forests in the region of ownership or forest tenure.
	10.1.1 <i>Program to evaluate the risk of undesirable impacts of wildfire and the role of fire on the forests they own or manage.</i>
	10.1.2 Use of <i>stand</i> and <i>landscape</i> level management techniques, actions and/or policies to promote <i>forest health</i> and resilience, and to mitigate the likelihood of undesirable impacts of wildfire, such as, prescribed fire, cultural burning, thinning, or hazardous fuel reduction where appropriate based on risk.
	10.1.3 Use of management techniques to address wildfire damage, mitigate negative impacts to water and soils, and to promote forest restoration and future forest resilience.
	10.2.1 Participation in, or support of, local, state, provincial, federal, or Indigenous fire management and prevention programs.
	10.2.2 Participation in, or support of, programs to promote benefits of fire management, and raise awareness about the environmental, economic, and social risks of undesirable impacts of wildfire to values such as carbon emissions, water quality and quantity, air quality, species <i>habitat</i> , public safety, and human health.

	12.1.1 Financial or in-kind support of research, collaboratives, or knowledge transfer to address key themes of relevance in the region of operations as identified by <i>Certified Organizations</i>, <i>local stakeholders</i>, communities and/or <i>Indigenous Peoples</i>. Examples could include, but are not limited to, the following topics: a. climate change adaptation and mitigation; b. water quality and quantity; c. biodiversity, <i>Forests with Exceptional Conservation Value</i>, and species maintenance and recovery; d. <i>landscape</i> ecology; e. <i>Indigenous traditional forest-related knowledge</i>; f. <i>ecosystem services or non-timber forest products</i>; g. community engagement; h. <i>forest health and productivity</i>; i. support for Forest Inventory Analysis (FIA); j. SFI sponsored conservation research; k. the role of forests in the bioeconomy, and or similar themes which build broader understanding of the benefits and effects of sustainable forest management or sustainable supply chains.
Climate Smart Forestry Requirement	9.2.2 Based on best scientific information, Certified Organizations shall identify and address opportunities to enhance ecosystem resilience for the forests they own or manage via effective implementation of the SFI 2022 Forest Management Standard requirements including: a. prompt reforestation or planned natural reforestation as per Indicator 2.1.1; b. adequate regeneration and appropriate actions to correct understocked areas, and c. evaluation for afforestation of areas that are not ecologically important, and d. protection of desirable or planned advanced regeneration during harvest and the retention of vigorous trees during partial harvest.
Related SFI FM Standard References	2.1.1 Documented <i>reforestation</i> plans, including designation of all harvest areas for either natural, planted, or direct seeded regeneration and prompt <i>reforestation</i>, unless delayed for site-specific environmental or <i>forest health</i> considerations or legal requirements, through <i>planting</i> within two years or two <i>planting</i> seasons, or by planned <i>natural regeneration</i> methods within five years.
	2.1.2 Clear criteria to judge adequate regeneration and appropriate actions to correct understocked areas and achieve acceptable species composition and stocking rates for <i>planting</i>, <i>direct seeding</i>, and <i>natural regeneration</i>.
	1.4.1 Any <i>afforestation</i> activity must include an evaluation of the proposed site to determine the presence of: a. <i>ecologically important natural communities</i>, or b. <i>threatened and endangered species, or native natural communities</i> that could be at risk of becoming rare.

	1.4.2 <i>Afforestation</i> shall not occur on that location if the evaluation determines a negative impact to: c. <i>ecologically important natural communities, or</i> d. <i>threatened and endangered species, or</i> e. <i>native natural communities</i> which could be at risk of becoming rare.
	2.1.4 <i>Protection</i> of desirable or planned advanced <i>natural regeneration</i> during harvest.
	2.4.1 Program to protect forests from damaging agents.
	2.4.2 Management to promote healthy and productive forest conditions to reduce susceptibility to damaging agents.
	2.4.3 Participation in, and support of, fire and pest prevention and control programs.
	12.1.1 Financial or in-kind support of research, collaboratives, or knowledge transfer to address key themes of relevance in the region of operations as identified by Certified Organizations, local stakeholders, communities and/or Indigenous Peoples. Examples could include, but are not limited to, the following topics: a. climate change adaptation and mitigation; d. landscape ecology; f. ecosystem services or non-timber forest products; h. forest health and productivity;