



**Guidance to *SFI* 2022 Standards and Rules
(Section 7)**

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Introduction

SFI Inc. completes a review of its standards and supporting documents consistent with international protocols for forest certification standard revision cycles. The fifth public review, conducted in 2020-2021, led to the *SFI 2022 Standards* and supporting documents.

This guidance document is intended to assist *SFI Certified Organizations* and *certification bodies* in interpreting and implementing new and existing provisions in the *SFI 2022 Standards and Rules*.

This document provides additional information that may help *Certified Organizations* make management decisions to meet *SFI 2022 Standards and Rules* requirements. *SFI Inc.* routinely researches ways to improve the functionality of the *SFI* program; thus this document may be updated over time.

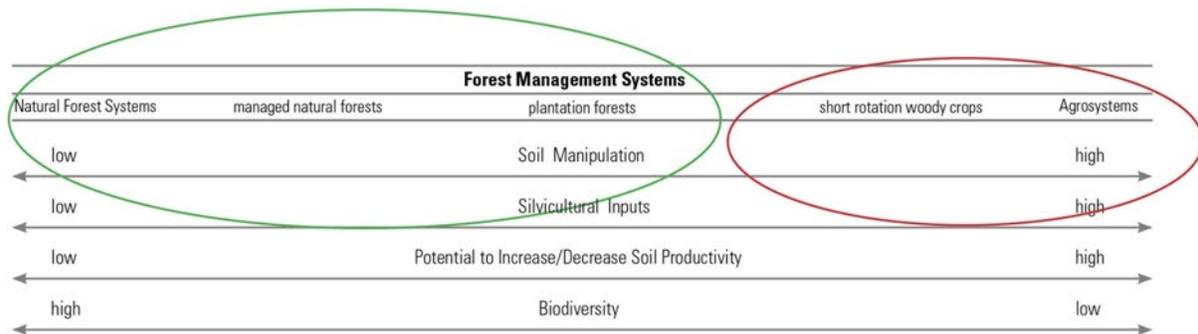
1. Guidance for the SFI 2022 Forest Management Standard

Application of the *SFI 2022 Forest Management Standard*, *SFI 2022 Fiber Sourcing Standard* and *SFI 2022 Chain of Custody Standard*

Scope of the *SFI 2022 Forest Management* and *SFI 2022 Fiber Sourcing Standards*

The *SFI 2022 Forest Management Standard* and *SFI 2022 Fiber Sourcing Standards* apply to management of and sourcing from forests throughout the United States and Canada where management intensities are characterized by managed natural forests and plantation *forestry*, regardless of the forest products derived from management of such forests. The figure (Figure 1) below illustrates the spectrum of forest management systems. The *SFI 2022 Forest Management Standard* and *SFI 2022 Fiber Sourcing Standard* are intended to apply to forest management systems that are classified as natural forest systems, managed natural forests and plantation forests. Management operations that are classified as short rotation woody crops or agro-forestry are not within the scope of the *SFI 2022 Standards and Rules*.

Figure 1. Spectrum of forest management systems (green circle) that qualify for certification to the *SFI 2022* Standards (Adapted from Burger, 2002¹).



Objective 1. Forest Management Planning

Long-term Sustainable Harvest Levels

Determining the Most Appropriate Geographic Scale

Objective 1 Performance Measure 1.1 requires long-term harvest levels that are sustainable and consistent with appropriate *growth and yield models*. Indicator 1.1.1 lists items required in forest management planning “at a level appropriate to the size and scale of the operation”, with 1.1.1(d) requiring that “*biodiversity* at the *landscape* scale” be factored into forest management planning decision-making. From these requirements it can be inferred that a *Certified Organization* must base their *long-term* sustainable harvest level planning at a geographic scale that accurately reflects forest growth and yield and conservation of biodiversity. Likewise, the requirement that forest management planning shall ensure *long-term* (one rotation or greater) sustainable harvest levels requires planning to occur on forest types in similar biological, geological, and climatic areas.

Acquisitions and Sustainable Harvest Planning

An SFI *Certified Organization* with a prolonged, accelerated harvest level in one operational region cannot “offset” a long term unsustainable level of harvests through land acquisition. This practice does not meet the spirit and intent of the SFI program and to allow this practice could result in an imbalance in forest age classes and species composition in certain portions of the *Certified organization’s* lands, which in turn could have significant negative impacts on the conservation of *biological diversity* contrary to Indicator 1.1.1 (d), which requires that forest management planning consider *biodiversity* at the *landscape* scale. Any acquired lands should be integrated into the organization’s forest management planning, and the organization should recalculate appropriate long-term harvest levels that are sustainable and consistent with accepted growth and yield models by operational region.

¹ Burger, J. A. 2002. Soil and Long-Term Site Productivity Values. In: Richardson, J.; Bjorheden, R.; Hakkila, P.; Lowe, A. T.; and Smith, C. T. Bioenergy from Sustainable Forestry: Guiding Principles and Practice. Dordrecht, The Netherlands: Kluwer Academic Publishers: 165-189.

Temporal Scale

It is SFI's expectation that certification bodies shall audit sustainable harvest levels based on the criteria specified in Performance Measure 1.1, taking into account the maintenance of *landscape* level *biodiversity*, and confirming that any increases in planned harvest level(s) are consistent with the SFI *Certified Organization's* forest management plan. Additionally, sustainable harvest levels or government regulated allowable annual harvest should not be exceeded for extended periods of time unless a substantive ecological rationale is developed to justify the elevation, examples of which could include a response to forest health emergencies such as beetle epidemics or sanitation logging of forests impacted by catastrophic wildfire, ice storm or wind damage. In instances where harvest levels are exceeded for extended periods, a documented plan must be in place to demonstrate how harvest planning will achieve a return to the long-term sustainable harvest levels over one rotation.

Record Retention

The requirements of Objective 1, Performance Measure 1.1 address the need to have a *long-term* resources analysis, *forest inventory*, *growth-and-yield modeling* capabilities, and recommended sustainable harvest levels for areas available for harvest. Likewise, Indicator 1.1.2 requires that "documented current harvest trends fall within *long-term* sustainable levels identified in the forest management plan" and Indicator 1.1.4 requires "periodic updates of *forest inventory* and recalculation of planned harvests to account for changes in growth due to *productivity* increases or decreases".

Forest management plans by their very nature are adjusted as needed to reflect changes in factors such as inventory, growth and yield modeling capabilities, growing stock, harvest levels and the cyclical nature of the forest products market. To ensure effective decision making regarding *long-term* sustainable harvest levels, an SFI *Certified Organization* must be able to assess the accuracy of past planning inputs and decisions made through appropriate document retention. It is expected that an SFI *Certified Organization* has the ability to look backwards over a sufficiently long time-frame in order to inform its future forest management planning.

Conversion

Conversion of One *Forest Cover Type* to Another *Forest Cover Type*

The intent of Performance Measure 1.2 is to outline the limitations on conversion and the due diligence process to be followed when converting to a different *forest cover type*. Limitations exist where the conversion is unlawful, threatens rare and ecologically important *native* forest types, or where *long-term* adverse impacts are expected on species, *habitats* or *special sites* already protected by the *SFI 2022 Forest Management Standard*.

In situations where a *Certified Organization* intends to convert from one *forest cover type* to another *forest cover type*, the *Certified Organization* is expected to demonstrate proficiency of assessment of the conditions outlined in *Indicator 1.2.2*.

The formality of the assessment has not been prescribed and therefore, *Certified Organizations* are able to structure the assessment in accordance with the scope and scale of their organization and scale of the intended conversion.

It is not the intent of Performance Measure 1.2 to limit activities that are of ecological benefit, such as returning a site to a historical *forest cover type*, responding to *forest health* concerns, or mitigating present or future environmental harm (e.g., *climate change*).

In situations where a *Certified Organization* proposes a site for conversion from one forest cover type to another forest cover type, the *Certified Organization* is expected to demonstrate proficiency of assessments outlined in Indicator 1.2.2., and to further demonstrate that these conditions are fully met before further consideration is given to the potential for conversion at the site level.

If the conditions noted under 1.2.1 are met, then the *Certified Organization* must further meet the conditions and justifications noted under 1.2.2., in order to move forward with conversion of forest types – so that these requirements are essentially hierarchical in application.

Relative to application of 1.2.2, conversion objectives should include stand- and landscape-level outcomes generally consistent with the natural distribution of forest cover types and structural composition at the landscape scale. Supporting assessments and spatial analyses are consistent with the requirements under Objective 4.

There may be circumstances under which an ecologically important 'native forest cover type' could be considered for conversion. A possible example could be limited conversion of a bottomland hardwood stand to loblolly pine - a species that is more economically justified for the site. In this instance, bottomland hardwood may be considered an ecologically important forest native forest cover type, although it still occurs extensively across the landscape. Such conversion could be allowable under limited circumstances, if justified for economic reasons, provided that such conversion would not put native forest cover types, or Forests of Exceptional Conservation Value, at risk. An important determinant in this instance is the scale of the conversion – this should be fully explored in the required assessments to provide assurance that the scale of the proposed conversion does not generate undue risk to FECV, or to the perpetuation of the native forest cover type itself. The SFI Forest Management Standard is intended to safeguard such ecologically important natural communities, so that forest managers must carefully consider impacts prior to approval of any such conversion.

1.2.2d notes the need for "appropriate consultation" with local communities, Indigenous People, and other *stakeholders* who could be affected by such activities. Landowners must recognize the societal context of managed forests within landscapes, and consider *stakeholder* concerns, if any, when determining scale and impact of the proposed conversion. "Appropriate consultation" includes the possibility that circumstances of any particular conversion proposal may not merit any consultation (i.e. that consultation is not necessary, and therefore no consultation is "appropriate"). For example, if the project is sufficiently remote, it may occur beyond the range of impact to any local community or group. Therefore, with sufficient explanation and justification, the *Certified Organization* may determine to forego consultation.

In the event that "appropriate consultation" suggests the need for consultation, such consultation should help to gauge possible impacts of conversion on local values – recreation, aesthetics, cultural, etc. Such consultation becomes increasingly critical with the scale of the proposed conversion, but there is no specific prescription for a threshold of size of conversion that should trigger the consultation.

Conversion of Forest Land to Another Land Use

The intent of Performance Measure 1.3 is to ensure that forest land that is being converted to non-forest land uses is appropriately scoped out of *SFI* certificates. Two basic tenets establish the rationale for this *Performance Measure*. First, forest land that is being converted to non-forest land uses would not likely meet any of the *SFI 22022 Forest Management Standard* requirements (prompt *reforestation*, *biodiversity*, etc.) and therefore could not be certified under the *SFI 2022 Forest Management Standard*.

Second, fiber (roundwood and/or chips) from forest land being converted to non-forest land uses cannot be counted as *certified forest content* in any product bearing an *SFI program* label (see definition of *conversion sources*).

Scope of Certification

Notwithstanding the tenets listed in Section 4.3.2 of this guidance, the issue with conversion to non-forest land use is really a question of which lands are eligible to be within the scope of a *Certified organization's SFI 2022 Forest Management Standard* certificate. There is no limit on the percentage of land that can be "scoped out" of an *SFI 2022 Forest Management Standard* certificate. However, it is important to ensure that forest land within the scope of the *Certified organization's SFI 2022 Forest Management Standard* certificate continues to be managed as forest land consistent with the *SFI 2022 Forest Management Standard*. In some circumstances forest land designated for sale may not sell in the short term nor is there certainty that these forest lands will be converted to another land use by the purchaser. As such, the *Certified Organization* should continue to manage these forest lands in conformance with the *SFI 2022 Forest Management Standard* until a sales contract has been executed. Once a sales contract is executed, the *Certified Organization* should scope out the lands that will be sold.

Certified Organizations are not restricted in their decision making regarding the purchase of or sale of forest land or the movement of forest land (or the quantity) in or out of the scope of an *SFI 2022 Forest Management Standard* certificate. *Certification bodies* must ensure that lands within the scope of an *SFI 2022 Forest Management Standard* audit are being managed in conformance with the *SFI 2022 Forest Management Standard* to *protect* the integrity of the *SFI 2022 Standards and Rules*. Furthermore, *certification bodies* and *Certified Organizations* must ensure that there is absolute clarity on which forest lands – whether owned, managed or controlled (see 4.3.2.2 below) – are included in the scope of the *SFI 2022 Forest Management Standard certificate*.

Control of Decision Making

The issue of control of decision making by the *Certified Organization* is the central factor when determining which forest land should be scoped out of an *SFI 2022 Forest Management Standard* certificate. When a *Certified Organization* knowingly intends to convert forest land to a non-forest land use and has control over the process, then the forest lands should be scoped out of the certificate when the decision is made to convert.

The example above where forest land is being sold or purposefully converted to non-forest land use is relatively straight-forward when it comes to identifying who has control of decision making. However, there are other examples where control of management practices is less clearly defined or where control over decisions regarding forest land use shifts to a different

party after a fixed period of time. Examples of these more ambiguous circumstances include *long-term* leases and timber deeds.

Like the forest land sale example, the decision whether to scope forest land in or out of an *SFI 2022 Forest Management Standard* certificate still rests with the organization who has control over decisions related to management of the forest land in conformance with the *SFI 2022 Forest Management Standard*. More specifically, if a *Certified Organization* has forest management authority over Objective 1 of the *SFI 2022 Forest Management Standard* then such lands can remain within the scope of the *SFI 2022 Forest Management Standard* certificate until such time as control of forest management decisions is relinquished. Likewise, in the case of *long-term* leases or timber deeds; if a *Certified Organization* has a reasonable expectation the lands will remain in a forested condition after their lease or deed expires, then such lands can remain within the scope of the *SFI 2022 Forest Management Standard* certificate until such time as control of forest management decisions is relinquished.

Mining and drilling activities are other examples of where *Certified Organizations* may have control over forest management, but may not have control over the ultimate fate of the land use. In this example, so long as the *Certified Organization* is not the party deciding to mine or drill or has not engaged into a contractual relationship with a third-party to do so, then lands being managed in accordance with the *SFI 2022 Forest Management Standard* may remain within the scope of an *SFI 2022 Forest Management Standard* certificate until such time as forest management control is relinquished.

Accounting for Non-Certified Forest Content

Despite efforts to scope out forest lands intended to be converted to non-forest land uses, small parcels of land intended for conversion may remain in the scope of an *SFI 2022 Forest Management Standard* certificate (e.g., utility right-of-way, well drilling pad). Accounting for the *conversion sources* from such small “inclusions” within a larger *SFI* certified forest may be impracticable. In order to meet the spirit and intent of Performance Measure 1.3, *Certified Organizations* should make reasonable efforts to separate *conversion sources* from *certified forest content* where the volume of *conversion sources* is more than a minimal amount (e.g., 1 percent of the harvested volume).

Objective 2. Forest Health and Productivity

Prohibited Chemicals

The intent of Performance Measure 2.2 is to *minimize* the chemical use required to achieve management *objectives* while ensuring the protection of employees, the public and the environment; including *wildlife* and *aquatic habitats*. To ensure these results are achieved, the use of forest management pesticides must follow federal, state and local laws; the label instructions, and be implemented with proper equipment and training. Furthermore, pesticides, such as chlorinated hydrocarbons whose derivatives remain biologically active beyond their intended use, as well as pesticides banned by international agreement, are prohibited for use by *Certified Organizations*. This last requirement is addressed by *Indicators* 2.2.5 and 2.2.6.

Indicator 2.2.5: The World Health Organization (WHO) type 1A and 1B pesticides shall be prohibited, except where no other viable alternative is available.

It is the responsibility of the *Certified Organization* to ensure that any chemical use in forest management avoids the use of chemicals on the WHO type 1A and 1B list of prohibited chemicals. In the rare exception where a *Certified Organization* believes a variance on the prohibition on the use of a WHO type 1A and 1B chemical is warranted, the *Certified Organization* will submit their rationale to their *certification body* for approval. The *certification body* will then monitor the chemical usage approved under this variance, should this variance be approved.

The WHO type 1A and 1B list of prohibited chemicals is at:

https://apps.who.int/iris/bitstream/handle/10665/44271/9789241547963_eng.pdf?sequence=1&isAllowed=y

Indicator 2.2.6: Use of pesticides banned under the Stockholm Convention on Persistent Organic Pollutants (2001) shall be prohibited.

It is the responsibility of the *Certified Organization* to ensure that any chemical use in forest management complies with the ban on the use of chemicals under the Stockholm Convention on Persistent Organic Pollutants (2001). There is no option of a variance for the use of chemicals banned under the Stockholm Convention (2001).

The list of chemicals banned under the Stockholm Convention on Persistent Organic Pollutants is at: <http://chm.pops.int/TheConvention/ThePOPs/tabid/673/Default.aspx>

Objective 4. Conservation of Biological Diversity

Conservation of Biological Diversity

The intent of Performance Measure 4.1 is to ensure that *SFI Certified Organizations* utilize the best available scientific information to inform action at multiple scales, for purposes of *biodiversity conservation*. The individual Indicators specify the means by which this should be executed.

Several indicators suggest the use of *best scientific information*. This is intended to drive the utilization of credible sources to determine *landscape* level priorities, to facilitate assessments and ultimately to maximize the potential of the managed area to contribute to *landscape* level *biodiversity*, within the context of management objectives. Credible sources of science information could include (but are not limited to) The Nature Conservancy ecoregional plans, NatureServe biodiversity metrics, or other credible sources.

Assessments conducted under Performance Measure 4.1, or any assessments consulted to meet the requirements of 4.1, should inform efforts to maintain or advance *biodiversity conservation* at multiple scales, including *landscape* scale. Indicator 4.1.3 suggests the need for documentation of *biodiversity* at *landscape* and ownership levels, and incorporation of such documentation "to ensure the contribution of the managed area to the diversity of conditions

that promote *biodiversity*.” Such documentation is increasingly available through remote sensing sources, NatureServe biodiversity metrics (a project of SFI), The Nature Conservancy, Forest Inventory and Analysis (US) and/or Canadian Forest Service (Canada). It also may be possible for a *Certified Organization* to develop its own documentation of diversity at this scale, though credibility is likely to be enhanced by participating in a broader collaborative process.

To achieve the intended goal of contributing to *biodiversity conservation* at *landscape* scale, managers will need to evaluate the required “documentation of *biodiversity* at *landscape* and ownership/tenure levels” in the context of their own management strategies, to determine if there may be opportunities to fill gaps in *biodiversity* outcomes, or to provide certain forest composition, age-classes or conditions that may be lacking on the *landscape*. The “planning and priority-setting efforts” cited in Indicator 4.1.4 are intended to be informative to this effort, by helping managers understand *conservation* priorities that have been independently and scientifically established, and “incorporating results” into their own planning. The list of credible sources for such analyses provided in 4.1.4 is intended to aid in that process – these sources often intersect or dovetail with the *landscape biodiversity* assessments noted above.

Another credible prioritization effort at large scale is the “Forests for the Birds” project, collaboratively developed by SFI, the American Bird Conservancy, and multiple *Certified Organizations*. Incorporation of the results of this project should be considered appropriate to meet the intent of Indicator 4.1.4 by informing management strategies for conservation of wide-ranging bird species.

Certain commonly understood forest metrics, such as stand age, and size-class distribution, can be valuable elements of credible analyses to better understand the contributions of a given managed area to *biodiversity conservation*. Certain imperiled species, such as Red Cockaded Woodpecker (in the US South), may have life cycle requirements related to tree size and distribution – in this case, larger diameter trees. Analysis and “incorporation” therefore could include assessment of range maps or habitat prediction models of species that may be dependent on such conditions. In this way, managers can develop strategies to enhance habitat for species with known requirements, and potentially elevate the contribution of their managed area toward landscape goals, using well-established metrics beyond just the *forest cover type*.

An advantage of using credible planning and priority-setting frameworks, such as those noted above, is that multiple elements and scales of *biodiversity* analysis are already inherent to these constructs. For example, the NatureServe *biodiversity* metrics approach (a project in collaboration with SFI and multiple *Certified Organizations*) includes metrics relative to “*landscape* condition” and “species assemblages”, effectively addressing “connectivity” and “natural communities” respectively. The metric of “*Landscape* Spatial Pattern” effectively speaks to both “fragmentation” and “connectivity” as inherent attributes of *biodiversity* at multiple scales.

Forests with Exceptional Conservation Value

Objective 4 of the *SFI 2022 Forest Management Standard* extends the *biodiversity* requirements to *Forests with Exceptional Conservation Value* (FECV).

Indicator 4.2.2: *Program* to locate and *protect* known sites flora and fauna associated with viable occurrences of *critically imperiled* and *imperiled* species and communities also known as

Forests with Exceptional Conservation Value. Plans for *protection* may be developed independently or collaboratively and may include *Certified Organization* management, cooperation with other *stakeholders*, or use of easements, *conservation* land sales, exchanges, or other *conservation* strategies.

Definition of *Forests with Exceptional Conservation Value*: *critically imperiled* (G1) and *imperiled* (G2) species and ecological communities.

Critically imperiled: A plant or animal or community, often referred to as G1, that is globally extremely rare or, because of some factor(s), especially vulnerable to extinction. Typically, five or fewer occurrences or populations remain, or very few individuals (<1,000), acres (<2,000 acres or 809 hectares), or linear miles (<10 miles or 16 kilometers) exist.

Imperiled: A plant or animal or community, often referred to as G2, that is globally rare or, because of some factor(s), is very vulnerable to extinction or elimination. Typically, six to 20 occurrences, or few remaining individuals (1,000 to 3,000), or acres (2,000 to 10,000 acres or 809 to 4047 hectares), or linear miles (10 to 50 miles or 16 to 80.5 kilometers) exist.

In the United States and Canada, *SFI Certified Organizations* can use the NatureServe database to identify species and communities for *protection*. Learn more about NatureServe *Conservation Status Assessments* at <https://www.natureserve.org/biodiversity-science/publications/natureserve-conservation-status-assessments-methodology-assigning>

NatureServe Resources for Global and Occurrence Ranks

Identification and *protection* of *critically imperiled* and *imperiled species* and communities is a step-wise process. First, NatureServe determines the global rank, which reflects the rarity/imperilment of the species or community. Then it assesses the estimated viability, or probability of persistence, of particular occurrences of *critically imperiled* and *imperiled* species and communities. A viable species or community is one that is of sufficient quality to likely survive *long-term*. Clearly, little *conservation* benefit is gained unless protected occurrences have a good likelihood of *long-term* survival.

NatureServe inventory and *conservation* activities focus on locating, maintaining records on, and working with partners to conserve viable occurrences of *conservation* elements. NatureServe/ Natural Heritage Programs rank viability of element occurrences (community or species) using standard methodologies to yield an element occurrence ranking. A standard set of Element Occurrence Rank Specifications is developed and maintained for each element, and then applied against individual occurrences of the element.

The basic element occurrence ranks are:

- A: Excellent estimated viability
- B: Good estimated viability
- C: Fair estimated viability
- D: Poor estimated viability
- E: Verified extant (viability not assessed)
- H: Historical
- F: Failed to find
- X: Extirpated

The *SFI Standard* requires that *Certified Organizations* have “plans to locate and *protect* known sites associated with viable occurrences of *critically imperiled* and *imperiled* species and communities.”

Under the *SFI 2022 Forest Management Standard*, occurrences of *critically imperiled* and *imperiled* species and communities ranked as A and B are to be protected. C-ranked occurrences should be reviewed and addressed on a case-by-case basis. If they have greater potential to be viable (C+), they should be protected. If there is less potential for viability (C-), they are to be managed at the *Certified Organization’s* discretion.

Element occurrences with poor estimated viability (D) would not be protected under the *SFI 2022 Forest Management Standard*. A D rank might result because the acreage of a community or the population of a species is too small, the quality is very low, and/or the ecological processes required to maintain the occurrence are fundamentally altered and un-restorable. E-ranked occurrences (viability not assessed) should be presumed viable and protected until assessed and determined to be of C- or D quality. Occurrences ranked F are not covered under the *SFI 2022 Forest Management Standard* since only known occurrences are included. Historical (H) and extirpated (X) occurrences are clearly nonviable, and no *protection* activity is warranted.

In determining the viability and potential to *protect* occurrences, *Certified Organizations* are encouraged to seek additional information on occurrence ranking from NatureServe <https://www.natureserve.org/conservation-tools/standards-methods/element-occurrence-data-standard> and/or collaborate with qualified *conservation* experts.

Occurrence Quality

The following material provides additional information on the standards and methodologies employed by NatureServe in determining the quality or viability of occurrences.

For an ecological assessment, scientists and managers want to know if each occurrence is of sufficient quality, or feasibly restorable, before including it in management planning. With adequate information, ecologists evaluate and rate the quality of element occurrences using criteria grouped into three categories: size, condition, and *landscape* context.

Characterizing the quality of an occurrence provides the basis for assessing stresses – the degradation or impairment – of element occurrences at a given site. To assess the quality of element occurrences, ecologists must identify the key ecological factors (ecological processes, population abundance, disturbance regimes, composition and structure, etc.) that support them. Once these are identified, it is possible to describe their expected ranges of variation and assess whether the on-site factors are within those ranges or requires significant effort to be maintained or restored to its desired status.

Key ecological factors vary by element type, but all are grouped into three categories of size, condition and *landscape* context. Each of these three categories is reviewed and ranked for each occurrence as A (excellent), B (good), C (fair) and D (poor). The break between C and D establishes a minimum quality threshold for occurrences. Occurrences ranked D are typically presumed to be beyond practical consideration for ecological restoration. In subsequent

management planning, these ranks and underlying criteria aid in focusing *conservation* activities and measure progress toward local *conservation* objectives.

Definitions of these categories are:

Size is a measure of the area or abundance of the *conservation* element's occurrence. It may simply be a measure of the occurrence's patch size or geographic coverage, and it may also include an estimate of sub-population size or density. Minimum dynamic area, one aspect of size, is the area needed to ensure survival or re-establishment of a population or community after natural disturbance.

Condition is an integrated measure of the composition, structure and biotic interactions that characterize the occurrence. This includes factors such as reproduction, age structure, biological composition (e.g., presence of *native* versus *invasive species*; presence of characteristic patch types), physical and spatial structure (e.g., canopy, understory and groundcover; spatial distribution and juxtaposition of patch types or seral stages in an ecological system), and biotic interactions that directly involve the element (e.g., competition and disease).

Landscape context measures two factors: the dominant environmental regimes and processes that establish and maintain the element occurrence, and connectivity. Dominant environmental regimes include hydrologic and water chemistry regimes (surface and groundwater), geomorphic processes, climatic regimes (temperature and precipitation), fire regimes, and natural disturbances. Connectivity includes such factors as species elements having access to *habitats* and resources needed for lifecycle completion, fragmentation of ecological communities and systems, and the ability of any element to respond to environmental change through dispersal, migration, or re-colonization. Criteria for ranking ecological communities vary by type. In many instances, criteria are developed for ecological systems, then modified (mostly with size attributes) for application to occurrences of individual rare plant associations that may occur among the more broadly defined ecological system.

Guidance on Incorporation of Ecosystems in the *SFI 2022 Forest Management Standard*

In the *SFI 2022 Forest Management Standard* the term "ecosystem" or "ecosystems" is referenced in several different *objectives* and *indicators*, yet guidance on how the concept of ecosystems should be integrated into *sustainable forestry* is lacking. Ecosystems represent the integration of biotic (e.g., plants, animals) and abiotic (e.g., soils, water) elements of the environment. In the context of *sustainable forestry* key components of ecosystems include: 1) forest composition; 2) forest structure; 3) connectivity across *landscapes*; and 4) how ecological processes like competition, nutrient cycling, or herbivory influence the sustainability of forest ecosystems.

Sustainable forestry is based on applying management at multiple scales with most *SFI Certified Organizations* operating at *stand* to *landscape* scales. The guidance provided is not a template for ecosystem management. Rather, currently accepted *SFI* definitions and approved elements of the *SFI 2022 Forest Management Standard* are relied on to demonstrate how ecosystems are an integral component of sustainable forest management. The guidance is consistent with the four aforementioned components of ecosystems: 1) forest composition, 2) forest structure, 3) connectivity, and 4) ecological processes.

Integrating the Biotic and Abiotic Elements of the Environment

The combination of *forest cover type* and soils maps, supplemented by non-timber information like *non-forested wetlands* and *Forests with Exception Conservation Values (FECV)*, provide the foundation for *landscape* scale mapping and planning that incorporates ecosystems into sustainable forest management for *Certified Organizations*. *Certified Organizations* are required to have a *land classification* system (Indicator 1.1.1c), soils inventory and maps, where available (Indicator 1.1.1e, Performance Measure 2.3), up-to-date maps or a *geographic information system* (Indicator 1.1.1g), and information on non-timber resources (Indicators 1.1.1i, 3.2.2, 3.2.3, 4.1.6, 4.2.2, 4.2.3) as part of their forest planning processes. *Certified Organizations* also are required to integrate biotic and abiotic elements in forest conversion decisions (Indicator 1.2.2b), forest regeneration (Performance Measure 2.3), and during implementation of forest *protection* activities (Performance Measure 2.4). Additionally, the *conservation of biological diversity* inherently integrates the biotic and abiotic elements of the environment through the accounting of *wildlife habitats* (Indicators 4.1.1, 4.1.2, 4.1.5), ecological community types (Indicators 4.1.1, 4.2.2, Performance Measure 4.3), *native biological diversity* (Indicator 4.1.1), and *Forests with Exceptional Conservation Value* (Indicator 4.2.2, Performance Measure 4.4).

Forest Composition

Forest composition is closely linked to abiotic factors like soil, microclimate, and moisture availability. Forest managers tend to think of composition at three levels: 1) *forest health* and *productivity* (e.g., high growth rates, drought resistant, disease resistance) of planting or regeneration stock (the "genetic" level"); 2) *stand* level considerations including tree species composition, management of competing vegetation, and structural retention practices (Indicator 4.1.2); and 3) *landscape* scale considerations (across ownerships or across multiple ownerships - Indicators 4.1.3, 4.1.4) in terms of *forest cover types* or other land cover classes.

Forest Structure

Within forest *stands*, structure refers to a number of characteristics, including the physical arrangement of trees, snags, and down woody debris. Within a *stand* and depending on the situation, *Certified Organizations* have criteria for the desired forest composition (Performance Measure 2.1), tree stocking (Indicator 2.1.2), size distributions (Indicator 1.1.1a, Indicator 1.1.1h), retention of *habitat* elements (Indicator 4.1.2), and *protection of special sites* (Indicators 4.1.5, 4.1.6, Performance Measure 4.3, Objective 6). At larger scales, like multiple forest *stands*, forest structure is often based on differences in size/density or stand age (in even-aged management systems), as portrayed by a *land classification* system (Indicator 4.1.3). This *land classification* system often includes information on *riparian zones* and the locations of *special sites* and *wetlands* (Indicators 3.2.2, 3.2.3). At even larger scales (e.g., *landscapes*), forest managers tend to portray the diversity of size, density, or age classes in management blocks, across entire ownerships, or in some instances across multiple ownerships (Indicator 4.1.3).

Connectivity

Integration of connectivity into sustainable forest management occurs through *protection of riparian zones* (Performance Measure 3.2), provision of diverse *forest cover types* and structures (Indicators 4.1.2, 4.1.3), and *protection of other ecologically important sites* (Indicators 4.1.5, 4.1.6, Performance Measure 4.3, Objective 6). Connectivity can be assessed at multiple scales and can be thought of as structural or functional. As the labels imply,

structural connectivity refers to *forest cover types* or *habitats* physically touching, providing the ability of genes and species to move through the managed forest *landscape*. Functional connectivity refers to *forest cover types* or *habitats* that are not physically touching but are arranged in a *landscape* such that genes and species can move. The *SFI 2022 Forest Management Standard* contains *indicators* that both directly and indirectly influence connectivity via requirements for prompt forest *reforestation* (Performance Measure 2.1), limitations on clearcut harvest area sizes (Indicator 5.2.1), limitations on forest *conversion* (Performance Measures 1.2, 1.3), the *protection* of *riparian zones* (Performance Measure 3.2), non-forested areas, and other ecological sites (Indicators 4.1.5, 4.1.6, Performance Measure 4.3), and through aesthetic considerations (Objective 5). In certain situations, some *Certified Organizations* may explicitly identify species of *conservation* concern that warrant direct assessments of connectivity (Performance Measure 4.2).

Ecological Processes

Ecological processes help sustain forest composition, structure, and connectivity. The *SFI 2022 Forest Management Standard* explicitly recognizes numerous important ecological processes that are important to *sustainable forestry*, including forest *reforestation* (Performance Measure 2.1), *forest health* (Performance Measure 2.4), hydrological function (Objective 3), and consideration of the role of natural disturbances (Indicator 4.1.8). In many certified forest *landscapes* the ecological processes that sustain composition and structure are influenced by active or passive management activities including harvesting, *reforestation*, and maintenance or enhancement of *biological diversity* and *wildlife habitat*.

Wildlife Habitat Diversity, Significant Species of Concern and Invasive Species

Objective 4 in the *SFI 2022 Forest Management Standard* includes *performance measures* and *indicators* for *conservation* of *biological diversity*. Additional information is provided here for *wildlife habitat* diversity and *invasive species*.

Wildlife Habitat Diversity

Performance Measure 4.1 in the *SFI 2022 Forest Management Standard* includes programs to incorporate *conservation of biological diversity* and recognize the value of a diversity of *habitats* to support fish and *wildlife habitats*. Early successional forest stages, for example, are particularly lacking in certain regions of the U.S. and Canada, and managing for them can aid in preventing the decline of species dependent on them (e.g., ruffed grouse). Historically, fires and other natural disturbances created forest openings and the types of *habitat* needed by these early succession forest dependent species. As forests across the *landscape* mature, this type of *habitat* declines in abundance. However, it can easily be created by proper selection of harvesting methods including clearcutting and the use of prescribed fire.

Ecologically Important Species

Indicator 4.1.5 requires a *program* to address *conservation* of ecologically important species and natural communities, including those that are locally rare. "Locally rare" is a term intended to give managers flexibility in interpretation, though managers are encouraged to consult objective sources (such as NatureServe G and S-Rank systems) to achieve consistent application of the concept.

The intent of indicator 4.1.5 is for *Certified Organizations* to; (1) evaluate *conservation* opportunities relative to species or communities that are not officially designated for protection by state, provincial or federal law, or ranked G1 or G2 (and thus addressed through *Forests with Exceptional Conservation Value*); (2) identify *ecologically important* species for management attention; and (3) incorporate *conservation* actions for the selected species into management.

The term "*ecologically important species*", replaces the former term "viable occurrences of significant species of concern". *Ecologically important* is a defined term, which can be applied to either species or *natural communities* (which is also now a defined term).

The intent is for *conservation* to occur on *Certified Organization* lands. *Although Certified Organizations* are not required to survey to determine known occurrences, they should refer to available sources to identify the presence of ecologically important species or natural communities. *Certified Organizations* should look to the definition of *ecologically important* to help determine which species or *natural communities* should be considered under this indicator, in addition to considering rarity, regional importance, and sensitivity to, or reliance upon, forest management activities. Resources for determining rarity may include Nature Serve G or S ranks, International Union for Conservation of Nature Red List and federal, provincial or state lists. Resources for determining regional importance may include The Nature Conservancy Ecoregional Plans, State Wildlife Action Plans or other credible *conservation* plans. Information regarding known occurrences (i.e. presence) can be drawn from Nature Serve, State/Provincial Natural Resource Agencies, Conservation Data Centers, or other regional mapping efforts or assessments.

It should be noted that *non-forested wetlands*, bogs, fens, marshes, and *vernal pools* (cited for identification and *protection* in Indicator 4.1.6) are characterized by distinct *natural communities* and can thus be identified using the methods and sources noted above.

Ecologically important species or *natural communities* could include species that are ranked G3 or S1-S3 by NatureServe, at the discretion of the forest manager, and based on potential opportunities for the managed area to aid in recovery or perpetuation of that species (note that G1-G2 species are already afforded *protection* by definition and related requirements under *Forest with Exceptional Conservation Value*). For example, the Gopher Tortoise (*Gopherus polyphemus*), ranked G3, is considered a species of concern across much of its range. Many forest managers in the range of Gopher tortoise in the US South include specific attention to the needs of that species in management planning.

It is recognized that lists of "special concern species," "rare species," "species of greatest conservation need," or similarly described lists have been published by state/provincial or federal agencies or others. It is not the intent of this indicator to imply that any particular species on such lists should require management or *protection* under this indicator – rather such lists should serve as a resource for identification of *ecologically important* species or *natural communities*.

The concept of ensuring *programs* to address *ecologically important* species and *natural communities* provides forest managers with opportunities to address vulnerable, and locally rare, species in multiple ways. *Certified Organizations* are encouraged to work closely with non-governmental organizations, state, provincial and federal agencies, to advance *conservation*

efforts collaboratively, and to mitigate the need for formal listing and regulatory protections under the Endangered Species Act (US), or the Species at Risk Act (Canada).

Invasive Species

Indicator 4.1.7 addresses *invasive species*.

According to the U.S. Department of Agriculture Animal and Plant Health Inspection Service, *invasive species* are “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem, whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Examples would include gypsy moth and kudzu, but not the barred owl.

SFI Certified Organizations should become knowledgeable about *invasive species* within their area of operation. The expectation is that they will participate in cooperative efforts by others (e.g., government agencies or non-government environmental organizations) and work proactively within their own programs (e.g., erosion control or seed selection for *wildlife* plots) to limit the introduction, impact and spread of *invasive species*. Indicator 4.1.6 does not require an *SFI Certified Organization* to eliminate *invasive species* on their land. In some places *invasive species* are well established and eradication by the *SFI Certified Organizations* is unrealistic.

Experts in this area believe the most effective means of addressing *invasive species* include:

- awareness building,
- monitoring,
- preventing new introductions, and
- eliminating new occurrences.

SFI Certified Organizations should emphasize these as priorities in their programs. Forest practices that reduce the abundance of *invasive species* are preferred if they can be addressed within the context of the *SFI Certified organization's* overall management objectives.

Application of Research to Forest Management Decisions

The intent of Performance Measure 4.4 is to ensure that the substantial investment of *SFI Certified Organizations* toward research is resulting in advancements in application of practices toward *biodiversity conservation*. *Certified Organizations* can participate in advancing this knowledge in multiple ways. Performance Measure 4.4 suggests the need for acquiring biodiversity-related data through inventory processes, mapping, interaction with natural heritage programs, data centers, or NatureServe. The implication is that *Certified Organizations* can both utilize such data, and also participate in the advancement of general understanding by contributing data to be widely shared, where feasible and appropriate – this could include, for example, sharing element occurrence data with NatureServe data centers to augment understanding of species' distribution. Participation could further include direct engagement in collaborative projects with non-governmental organization, academic partners, and other *Certified Organizations*, in a variety of projects that serve to increase understanding and advance common practice. Modes of implementation could include (but are not limited to):

- collaborative research participation, and sharing results, through *SFI Implementation Committee* engagement

- participation in research projects with external partners, through direct engagement, *SFI* Conservation Grant projects, multilateral partnerships, etc.
- sharing of proprietary research results, as appropriate, to support elevation of forest practices across the sector

Objective 8. Recognize and Respect Indigenous Peoples' Rights

Aboriginal Title

SFI 2022 Forest Management Standard Performance Measure 8.1 requires that *Certified Organizations* recognize and respect *Indigenous Peoples'* rights. Additionally, Objective 10 requires *Certified Organizations* to comply with all applicable federal, provincial/state laws and regulations.

On June 26, 2014 the Supreme Court of Canada provided a significant ruling on the occurrence of Aboriginal title in Canada (*Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44). The *Tsilhqot'in* decision is significant as it recognizes "Aboriginal title" over 1,900 km² of *Tsilhqot'in* territory establishing what is a new form of land tenure in Canada. This decision will have implications for Canadian *Certified Organizations* as First Nations legally establish "Aboriginal title" on territories that are currently non-treaty lands.

With this legal precedent in place, *Certified Organizations* must ensure they are in compliance with all applicable laws including recent court decisions that bear on forest management and land tenure. *Certified Organizations* operating in non-treaty areas of Canada over which "Aboriginal title" claims are made should be aware of the recent Supreme Court of Canada decision (*Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44) and the tests for and content of "Aboriginal title" to land.

Communications with Indigenous Communities

Forest Management Standard Indicator 8.2.1 e. requires a *certified organization* with public forest tenures to communicate with *Indigenous Peoples* whose rights may be affected by forest management practices through processes that respect their representative institutions and cultural preferences. At a minimum, *certified organizations* with forest management responsibilities on public lands must fulfill their legal requirements arising from relevant federal, state, or provincial regulations. Many jurisdictions have existing legislation or regulations that guide communications with *Indigenous Peoples* in the context of sustainable forest management. Areas of consideration and levels of prescriptiveness vary by jurisdiction but may include:

- i. timing of communications;
- ii. subject matter of communications;
- iii. delivery method(s) of communications;
- iv. timelines for responses to communications;
- v. necessary recipients of communications; and,
- vi. ability to modify prescribed communication procedures to accommodate local preferences.

Early, often and ongoing communication with *Indigenous Peoples* can enhance relationship building efforts, promote trust and collaboration, and enable all parties to proactively address potentially contentious issues before they become sources of disruptive conflict. As such, *certified organizations* are encouraged to implement communications programs that build on regulated requirements and are aimed at supporting open, respectful and locally relevant communication with *Indigenous Peoples*.

Certified organizations are encouraged to identify communications protocols that have been previously developed and endorsed by affected Indigenous communities and integrate them into their broader communications programs. These protocols can often be obtained by: i. checking a nation, tribal or community's website; ii. calling the nation, tribe or community's administrative office; or, iii. contacting relevant federal, provincial, or state authorities who have responsibilities to communicate with Indigenous Peoples. Many Indigenous communities will have someone who leads external consultation and engagement activities who can advise *certified organizations* on appropriate protocols.

Where community-endorsed communications protocol does not already exist, *certified organizations* are encouraged to co-develop customized communications protocols with affected Indigenous communities. Such protocols should seek to build upon relevant legal or regulatory requirements, while considering the unique interests, needs and capacity of each party. Communications protocols should be periodically reviewed and updated to ensure they remain relevant and meaningful to all parties, considering evolving local circumstances and forest management priorities. Appropriate training should be provided to personnel and contractors so that they are competent to fulfill both their legal responsibilities with respect to communications with *Indigenous Peoples* as well as responsibilities arising from co-developed communications protocols.

Objective 9: Climate Smart Forestry

Atmospheric carbon continues to influence the effects of climate change on forest ecosystems and global climate cycles. Carbon sequestered in and released from forests has been identified as having a significant effect on atmospheric carbon levels. As such, understanding the benefits of carbon sequestration and storage in managed forests is an important element of sustainable forest management.

Natural disturbances such as fire and insect outbreaks have occurred throughout history in North American forests. However, recent evidence suggests that these events are becoming more frequent and severe due to climate change. These unprecedented increases in extent and severity of disturbance have shifted large areas of forests to become significant sources of emissions to atmospheric carbon pools, compounding the climate change effects of anthropogenic carbon emissions.

Forest management decisions need to take into consideration a suite of objectives which are appropriately responsive to the unprecedented changes to our forests, resulting from climate change. These include managing for wildfire risk, maintaining landscape diversity for wildlife

and recreation, maintaining growing forests that remove carbon from the atmosphere, and providing a sustainable resource for rural communities that rely on forest-based economies. We know that when we actively manage our forested landscapes for wood products, we can maintain forests as a carbon sink^{2,3}. Understanding carbon dynamics in managed forests allows *certified organizations* to make informed decisions relative to objectives, strategies, and practices applied, which are both responsive and responsible with respect to climate change impacts.

In 2019, the Michigan State University Forest Carbon and Climate Program (FCCP) undertook a preliminary study which included a qualitative analysis of SFI programmatic documents, interviews with key experts, and observations of SFI training activities. This analysis found that while *SFI Forest Management Standard* did not explicitly require performance relative to carbon or climate mitigation, nonetheless “climate-smart forestry”⁴ concepts, management practices, and other best practices with benefits were prevalent throughout the standards, training materials, and program participant interviews. Beyond those valued practices, which remain as important elements of the *SFI Forest Management Standard*, the Climate Smart Forestry Objective is the next logical step in providing the assurance that such practices are undertaken, audited, and tracked as a proof point of forest sustainability.

The Climate Smart Forestry objective ensures that *certified organizations* are aware of the effects of their management on forest carbon dynamics as they relate to climate, and that such considerations are taken into account in business and forest management planning. However, the requirement of the Climate Smart Forestry objective do not extend to the quantification and verification of carbon pools as might be required by voluntary carbon markets or offset programs such as the Carbonzero program, the Verified Carbon Standard (VCS), or Carbonfund.org.

It is important to note that the scope and scale at which *certified organizations* may address some of these objectives will depend on the size and complexity of their operations. For example, larger forest land owners and managers may have the capability to conduct a more complex inventory of greenhouse gas emissions and harvest removals whereas it is reasonable to expect that smaller land owners and managers can make use of regional averages for greenhouse gas emissions and harvest removal estimates for purposes of developing an *adaptation* strategy and *mitigation* plans.

Performance Measure 9.1 - Identifying Climate Change Risks and Vulnerabilities

Risks and vulnerabilities that result from climate change impacts on managed forests and the values within them will vary from region to region and across forest stand types and ages. This variation may include differences in effects on tree mortality, forest infestation, wildfire, and

² Kurz W.A., Smyth, C. and Lemprière, T. (2016) Climate change mitigation through forest sector activities: principles, potential and priorities. *Unasylva* 246 (67), 61-67.

³ Smyth, C.E., Stinson, G., Neilson, E., Lempriere, T.C., Rampley, G.J. and Kurz, W.A. (2014). Quantifying the biophysical climate change mitigation potential of Canada’s forest sector. *Biogeosciences* 11, 3515-3529.

⁴ See FAO 2019 for more information on Climate-smart Forestry

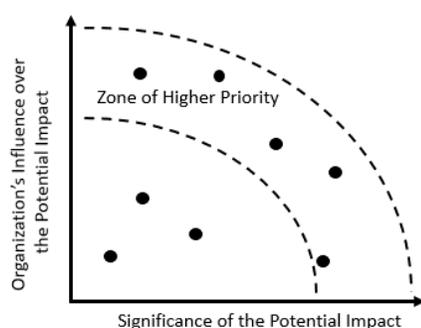
species distributions⁵. Identifying risks and vulnerabilities based on best scientific and economic information is important to test the relevance or efficacy of a *certified organization's* existing risk management strategies under climate change or to help identify whether new or additional strategies may be warranted. Standard risk identification and assessment approaches exist that can be directly used in a forest management context (Edwards et al 2015⁶) or can be adapted from similar approaches (CoastAdapt 2020⁷).

Indicator 9.1.1 - Prioritization of Risks and Vulnerabilities

Risk or vulnerability assessment is the process of assessing the probabilities and consequences of potential risk events. Indicator 9.1.1 requires *certified organizations* to conduct an assessment to prioritize identified climate change risks. Management efforts can then be better allocated to reduce risks to forests and the values within them, as per Objectives 2 (Forest Health and Productivity), 3 (Protection and Maintenance of Water Resources), 4 (Conservation of Biological Diversity), 5 (Management of Visual Quality and Recreation Benefits) and 6 (Protection of Special Sites).

Determining the climate-related material risks to a *certified organization* may involve identifying, refining, and assessing numerous potential environmental, social and economic climate-related risks and vulnerabilities that could affect the organization or its stakeholders. These could then be distilled into a short-list of topics that inform forest management strategies, targets, operations and reporting⁸. Determining which risks and vulnerabilities are the highest priority may involve considering the nature of the impacts, including whether they are positive or negative, actual or potential, direct or indirect, short-term or long-term, or intended or unintended. A further consideration may be given to the significance of the potential impact on the organization, its operations, or stakeholders, and the level to which the impact can be influenced (Figure 1).

Figure 1: Prioritization of climate-related risks to a certified organization based on the significance of the potential impact and the organization's ability to influence the risks.



⁵ Romero-Lankao et al 2014, Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

⁶ Climate change and sustainable forest management in Canada: a guidebook for assessing vulnerability and mainstreaming adaptation into decision making / J.E. Edwards, C. Pearce, A.E. Ogden, and T.B. Williamson.

⁷ Plunket, J., Stanzel, K., Weber, R. and S. Lerberg. 2015. Climate Change Vulnerability Assessment Tool for Coastal

Habitats: Guidance Documentation. Available: <http://www.ccvatch.com>

⁸ KPMG 2014, Sustainable Insight: The essentials of materiality assessment.

Indicators 9.1.2 and 9.1.3 - Identifying *Adaptation* Strategies

Indicator 9.1.2 requires a *certified organization* to develop an *adaptation* plan to address priority climate change risks. Indicator 9.1.3 then addresses how these *adaptation* plans should be reviewed in the context of Regional Climate Change Adaptation Strategies (RCCAS), where they exist. RCCAS are useful tools that help governments and organizations conduct operations that are aligned with overall *adaptation* efforts that are sensitive to regionally specific climate change risks. RCCAS have been developed for several jurisdictions and municipalities and are readily available for downloading, such as those found in Table 1. *Adaptation* strategies may involve consideration of potential adjustments to account for altered timing of spring thaw, shorter winters, assisted tree migration through selective planting, and consideration of planting the right tree species in the right place, at the right time, to name a few.

Table 1: A non-exhaustive list of Regional Adaptation Strategies by relevant jurisdiction, with title and source URLs for locating the documents (accessed April 26, 2020).

Jurisdiction	Title	Source
California	California Adaptation Planning Guide: planning for adaptive communities	https://resources.ca.gov/CNRALegacyFiles/docs/climate/01APG_Planning_for_Adaptive_Communities.pdf
New Hampshire	Climate Change Resilience Plan: resilience and preparedness in state government project	https://www.des.nh.gov/organization/divisions/water/dwgb/documents/wd-14-02.pdf
U.S. Southeast	UE EPA Region 4 Adaptation Implementation Plan	https://www3.epa.gov/climatechange/Downloads/Region4-climate-change-adaptation-plan.pdf
British Columbia	Strategic Climate Risk Assessment Framework for British Columbia	https://www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/climate-risk-assessment-framework.pdf
Ontario	Climate Ready: Ontario's adaptation strategy and action plan	http://www.climateontario.ca/doc/publications/ClimateReady-OntariosAdaptationStrategy.pdf
Canada	Adapting Sustainable Forest Management to Climate Change: preparing for the future	https://www.ccfm.org/pdf/Edwards_PreparingForFuture_FinalEng.pdf
U.S.	Climate Hubs – U.S. Department of Agriculture	https://www.climatehubs.usda.gov/

Indicator 9.2.1 - Identifying options for addressing stored carbon and greenhouse gas emissions

Adapting forest practices to address potential risks (identified in 9.1) involves understanding the potential range of variability in future climate scenarios, and adapting management and silvicultural practices to those conditions in order to sustain a thriving forest with all of its inherent values. Larger forest land owners and managers may have the capability to conduct a more wholistic adaptation plan and incorporate a broader range of options, whereas it is

reasonable to expect that smaller land owners and managers may have a narrower range of feasible options for purposes of developing an adaptation strategy. Resulting activities may range from assessing the impact of the forest management plan on overall carbon balance, to assessing the impact of different silvicultural and operational practices on live tree carbon to support the maintenance of forest benefits, potentially including target-setting for reduced net emissions or increased sequestration. Some examples may include:

- Consideration of equipment age, operability and maintenance;
- Selecting the correct equipment size (most efficient machine for the job);
- Finding alternative uses for logging waste to minimize open burning; and/or
- Modifications to site preparation techniques.

Indicator 9.2.2 - Quantifying GHG emissions in forest management operations

Understanding the overall impact of forest operations on forest carbon balance can encompass analysis of carbon pools and fluxes or the identification and management of the most significant fluxes over which *certified organizations* have an influence. Larger forest land owners and managers may have the capability to conduct a full inventory of greenhouse gas emissions whereas it is reasonable to expect that smaller land owners and managers can make use of regional averages for greenhouse gas emissions estimates for purposes of quantifying GHG emissions and informing forest management operations.

Sources of models and tools to quantify local, regional and national level forest carbon storage that may assist in addressing carbon storage or emission calculations are available from a variety of sources. The USDA Forest Service website maintains a list of tools for carbon inventory, management and reporting here. Some freely available data sources include the USFS Forest Inventory and Analysis (FIA) National Program, as well as resources available from Natural Resource Canada's (NRCan) Carbon Accounting Program, such as the CBM-CFS3 model (available here). Other more regionally-specific resources are available from industry-specific vendors (e.g., NCASI, Silviaterra), or through available tools such as FORECAST or FORCARB. Selection of tools and approaches may consider resolution, accuracy and scalability. Irrespective of the source, accounting tools should be characterized by sensitivity to forest types and employ the appropriate scale and climate modelling analysis suitable to the forest management area in question.

Resources to develop programs (Indicator 9.2.2) are related to the tools and methods developed to address carbon and greenhouse gas emissions (Indicator 9.2.1), combined with approaches to prioritize the most significant emission sources for management. Tools and models developed to quantify emissions are listed in Table 2.

Table 2 – Forest carbon emission and storage estimation models and tools, with references to geographic applicability. Note this is not an exhaustive list of possible tools.

Tool	Country, State/Province	Description	Source
CBM-CFS3	Canada (all)	The operational-scale Carbon Budget Model of the Canadian Forest Sector (CBM-CFS3) is an aspatial, stand- and landscape-level modeling framework that simulates the dynamics of all forest carbon stocks required under the Kyoto Protocol (aboveground biomass, belowground biomass, litter, dead wood and soil organic carbon). It complies with the carbon estimation methods outlined by the Intergovernmental Panel on Climate Change (IPCC)	Link
Generic Carbon Budget Model (GCBM)	Canada (all)	The GCBM is the next generation, fully spatial version of the CBM-CFS3 that the federal government is currently using for various internal research and collaborative projects.	Contact
FORECAST model	Canada (BC, AB, SK, S. ON, NS)	FORECAST is an ecosystem-based, stand-level, forest growth simulator. The model was designed to accommodate a wide variety of harvesting and silvicultural systems in order to compare and contrast their effect upon forest productivity, stand dynamics, and various biophysical indicators of non-timber values. Forest carbon is one of the outputs that can be modeled.	Link
FORCARB model	Canada (ON)	FORCARB is a U.S. developed model that the government of Ontario has modified for provincial use. The Ontario model is referred to as FORCARB-ON. The model can be used to project carbon storage in harvested wood products.	Link
i-Tree Harvest Carbon Calculator	US	The i-Tree Harvest Carbon Calculator (originally known as the PRESTO Wood Calculator) allows land managers and landowners to estimate the amount of carbon stored in harvested wood products. Carbon estimates are based on harvest volume, geographic region, and wood type.	Link
Methods for calculating ecosystem and harvested carbon	US	A publication with guidelines and default tables for estimating forest ecosystem carbon pools in the US and storage of harvested wood products in use and in landfills	Link
FORCARB2	US and Ontario	FORCARB2 produces estimates of carbon stocks and stock changes for forest ecosystems and forest products at 5-year intervals; it includes a new methodology for carbon in harvested wood products, updated initial inventory data, a revised algorithm for	Link

		dead wood, and now includes public forest land, reserved forest land, and forest land of low productivity.	
US Forest Carbon Calculation Tool	US	The Carbon Calculation Tool 4.0, <i>CCTv40.exe</i> , is a computer application that reads publicly available forest inventory data collected by the U.S. Forest Service's Forest Inventory and Analysis Program (FIA) and generates state-level annualized estimates of carbon stocks on forest land based on FORCARB2 estimators.	Link
EVALIDator	US	Generates user-specified reports on forest inventory estimates, including forest carbon stocks and changes in dry biomass over time, using US Forest Inventory and Analysis (FIA) data.	Link

DEFINITIONS

Adaptation - **Climate change adaptation** refers to actions that reduce the negative impact of climate change, while taking advantage of potential new opportunities. It involves adjusting policies and actions because of observed or expected changes in climate.

Richardson, G.R.A., 2010. *Adapting to Climate Change: An Introduction for Canadian Municipalities*. Ottawa, Ontario. Natural Resources Canada, 40 p.

Mitigation – **Climate change mitigation** consists of actions to limit the magnitude or rate of global warming and its related effects. This generally involves reductions in human emissions of greenhouse gases.

IPCC AR4 WG3 (2007), Metz, B.; Davidson, O.R.; Bosch, P.R.; Dave, R.; Meyer, L.A. (eds.), *Climate Change 2007: Mitigation of Climate Change, Contribution of Working Group III (WG3) to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)*, Cambridge University Press,

Objective 10. Legal and Regulatory Compliance (and Objective 4 of SFI Fiber Sourcing Standard

Illegal Logging

The *SFI program* has strong existing measures in the *SFI 2022 Standards and Rules* to avoid sourcing fiber from *illegal logging*. These measures are reinforced by the *SFI Policy on Illegal Logging* (September 2008). These measures address the issue of *illegal logging* from sources within the United States and Canada and off-shore.

The United States Lacey Act, as amended May 22, 2008, makes it unlawful to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce any plant, with

some limited exceptions, taken, possessed, transported or sold in violation of the laws of the United States, a State, an Indian tribe, or any foreign law that protects plants from removal or that regulates the removal of plants and products made from illegally removed plants. The European Union Timber Regulation (EUTR), applied since March 3, 2013, prohibits illegally harvested timber, or products derived from such timber, to be brought into the EU and creates due diligence obligations for operators who place timber and timber products on the EU market.

SFI 2022 Forest Management Standard Objective 10 and *SFI 2022 Fiber Sourcing Standard* Objective 4 requires legal and regulatory compliance with applicable federal, provincial, state and local laws and regulations.

SFI 2022 Forest Management Standard Performance Measure 10.1 and *SFI 2022 Fiber Sourcing Standard* Performance Measure 4.1.

Certified Organizations shall comply with applicable federal, provincial, state and local *forestry* and related social and environmental laws and regulations and take appropriate steps to avoid *illegal logging*.

The definition of *illegal logging* is intended to cover intentional violations, such as timber theft from areas that are precluded from logging, falsification of official documents, avoidance of harvest payments and duties, and deliberate removal of trees from the land without the legal right to do so. The definition is not intended to cover isolated occurrences of legal infractions such as unintentional trespass over a property line (for private ownership) or unit boundaries (for public ownership), violation of roadway laws, or minor contract disputes. As stated in *SFI 2022 Forest Management Standard* Objective 10 and *SFI 2022 Fiber Sourcing Standard* Objective 4, *Certified Organizations* are required to comply with applicable federal, provincial, state and local laws and regulations.

ILO Core Conventions

SFI 2022 Forest Management Standard Performance Measure 10.2 and *SFI 2022 Fiber Sourcing Standard* Performance Measure 4.2 addresses differences in U.S. labor law and the ILO core conventions. Additional guidance is provided here for application of 10.2 and 4.2 for independent contractors and for *Certified Organizations*.

Application of *SFI 2022 Forest Management Standard* Performance Measure 10.2 and *SFI 2022 Fiber Sourcing Standard* Performance Measure 4.2 for independent contractors operating on lands owned or controlled by *Certified Organizations*:

- *Certification bodies* at the time of the audit will collect and review information the *Certified Organization* has received from outside *stakeholders* with regards to concerns or conformance pertaining to independent contractor actions related to ILO Core conventions 87, 98 and 111.
- Any information collected by the *certification bodies* during normal auditing times will be promptly submitted without contractor identifying information to the *Program Participant*, *SFI Inc.* and the *SFI ILO* Task Force. Information received will be reviewed every 6 months by the *SFI ILO* Task Force which will develop recommendations to the *SFI Inc.* Board of Directors for resolution of any significant problems identified.

- Indicators 10.2 and 4.2 shall only apply to the core conventions not fully covered by existing U.S. or Canadian law.
 - Right to Organise (No. 87)
 - Right to Organise and Collective Bargaining (No. 98)
 - Discrimination (111).
- In addition, any ILO related issue that is being addressed through a formal grievance process or before any of the agencies established by the U.S. National Labor Relations Act (NLRA), the appropriate Provincial Labour Code or Act, or the courts until those processes are completed, and will not be subject to review, consideration or recommendations by the *SFI ILO* Task Force nor by the *SFI Inc.* Board of Directors.

Application of *SFI 2022 Forest Management Standard* Performance Measure 10.2 for *Certified Organizations* with respect to their employees operating on lands owned or controlled by *Certified Organizations*:

- *Certification bodies* at the time of the audit will collect and review information the *Certified Organization* has received from outside *stakeholders* with regards to concerns or conformance pertaining to their employee relations with regards to ILO Core conventions 87, 98 and 111.
- *Stakeholders* may raise issues regarding conformance to indicator 10.2.2 through the inconsistent practices procedures outlined in the *SFI* Public Inquiries and Official Complaints (Section 11) requirements, item 3.
- All information collected through the inconsistent practices process will be reviewed every 6 months by the *SFI ILO* Task Force which will develop recommendations to the *SFI Inc.* Board of Directors for resolution of any significant problems identified.
- Indicator 10.2.2 shall only apply to the core conventions not fully covered by existing U.S. or Canadian law.
 - Right to Organise (No. 87)
 - Right to Organise and Collective Bargaining (No. 98)
 - Discrimination (111).
- In addition, any ILO related issue that is being addressed through a formal grievance process or before any of the agencies established by the U.S. National Labor Relations Act (NLRA), the appropriate Provincial Labour Code or Act, or the courts until those processes are completed will not be subject to review, consideration or recommendations by the *SFI ILO* Task Force nor by the *SFI Inc.* Board of Directors.

Public forest landowners in states (Alabama, North Carolina and Virginia) that currently have laws prohibiting bargaining with their public employees shall be "grandfathered in" as meeting the requirements in indicator 10.2.2 but must still participate in the information gathering process with their *certification bodies* (for independent contractors) and the inconsistent practices process in item 3 of the *SFI* Public Inquiries and Official Complaints (Section 12) requirements to aid in resolution of any issues that may be identified.

Objective 12. Training and Education (and Objective 6 in SFI 2022 Fiber Sourcing Standard)

Use of Qualified Logging Professionals and Certified Logging Companies

Use of Qualified Logging Professionals

Logger training is a very effective tool in promoting sustainable forest management, and has been a key component of the *SFI program* since its inception. The *SFI 2022 Forest Management Standard* strengthens requirements for logger training with revisions to *Indicators*, 12.1.5, 12.2.1 and 12.2.2 and the *SFI 2022 Fiber Sourcing Standard* does the same with *Indicators* 3.1.1, 6.1.5, 6.2.1 and 6.2.2.

"*SFI 2022 Fiber Sourcing Standard* indicator 3.1.1. *Program* to promote the use of *qualified logging professionals, certified logging companies* (where available) and *qualified resource professionals*."

"*SFI 2022 Forest Management Standard* indicator 12.1.5 and *SFI 2022 Fiber Sourcing Standard* indicator 6.1.5 - *Certified Organizations* shall have written agreements for the use of *qualified logging professionals* and/or *certified logging companies* (where available) and/or *wood producers* that have completed training programs and are recognized as *qualified logging professionals*."

"*SFI 2022 Forest Management Standard* indicator 12.2.1 and *SFI 2022 Fiber Sourcing Standard* indicator 6.2.1 - Participation in or support of *SFI Implementation Committees* to establish criteria and identify delivery mechanisms for *wood producer* core training courses that address:

- a. awareness of *sustainable forestry principles* and the *SFI program*;
- b. *best management practices*, including streamside management and road construction, maintenance and retirement;
- c. awareness of responsibilities under the U.S. Endangered Species Act, the Canadian Species at Risk Act, *Forests with Exceptional Conservation Value* (*critically imperiled* and *imperiled* species and ecological communities), and other measures to *protect wildlife habitat* ;
- d. logging safety;
- e. U.S. Occupational Safety and Health Administration (OSHA) and Canadian Centre for Occupational Health and Safety (CCOHS) regulations, wage and hour rules, and other provincial, state and local employment laws;

"*SFI 2022 Forest Management Standard* indicator 12.2.2 and *SFI 2022 Fiber Sourcing Standard* indicator 6.2.2 -

Participation in or support of *SFI Implementation Committees* to establish criteria and identify delivery mechanisms for *wood producer* continuing education training courses at least once every two years that address one or more of the following topics:

- a. *reforestation, invasive species, forest resource conservation, aesthetics and special sites*;

- b. awareness of rare forested *natural communities* as identified by provincial or state agencies, or by credible organizations such as NatureServe and The Nature Conservancy;
- c. transportation issues;
- d. business management;
- e. public policy and outreach;
- f. awareness of emerging technologies;
- g. logging safety;
- h. trends related to the effectiveness of the *SFI Implementation Committee* approved *wood producer* training programs.

Program is defined in the *SFI 2022 Standards and Rules* as an organized system, process or set of activities to achieve an *objective* or *performance measure*.

SFI 2022 Forest Management Standard Indicator 12.1.5 and *SFI 2022 Fiber Sourcing Standard* Indicators 3.1.1 require *Certified Organizations* to develop a *program* for the purchase of their raw material from logging professionals who have completed training *programs*. The *SFI 2022 Fiber Sourcing Standard* indicator 6.1.5 says that *Certified Organizations* will use written agreements requiring the use of *qualified logging professionals*. *SFI Fiber Sourcing Standard* Indicator 6.1.6 states that *Certified Organizations* shall strive to achieve 100 percent of their raw material deliveries from *qualified logging professionals*, or *certified logging companies* who:

- a. has completed the *SFI Implementation Committee* approved *wood producer* training *program*;
- b. is an owner of, employee of, or contracted by the *wood producer*;
- c. has direct responsibility and is on-site regularly to consistently carry out the roles and responsibilities of the *qualified logging professional* or *certified logging companies* under the *SFI 2022 Forest Management or Fiber Sourcing Standards*.

Where the *Certified Organization* cannot contract with *qualified logging professionals* or *certified logging companies* they should strive to contract with loggers in the process of completing a *SIC*-approved logger training *program*, with allowances for turnover in the logging workforce, availability, timing and length of training *programs*, *other wood suppliers* (defined as a person who or organization that infrequently supplies wood fiber on a small scale, such as farmers and small-scale land-clearing operators), and availability of *qualified logging professionals* and *certified logging companies* locally. This cap on deliveries by untrained loggers also needs to recognize that catastrophic events (e.g., severe storms, wildfire, beetle epidemics) can result in large-scale salvage efforts over comparatively short periods of time which can result in increased deliveries by untrained loggers. Where the *Certified Organization* identifies a region where the availability of *qualified logging professionals* or *certified logging companies* is not sufficient to meet the expectations of *SFI 2022 Forest Management Standard* indicator 12.1.5 and *SFI 2022 Fiber Sourcing Standard* indicator 6.1.5, the *Certified Organization* will develop a *program*, individually or collaboratively, to address this shortage.

Certified Logging Companies

The *SFI 2022 Forest Management Standard* at Performance Measure 12.3 and the *SFI 2022 Fiber Sourcing Standard* Performance Measure 6.3 detail the requirements for a *certified logging company*.

Performance Measure 12.3 / 6.3. *Program Participants* shall work individually and/or with *SFI Implementation Committees*, logging or *forestry* associations, or appropriate agencies or others in the *forestry* community to foster improvement in the professionalism of *wood producers* specific to *certified logging professionals* where they exist.

1. Participation in or support of *SFI Implementation Committees* to establish criteria for recognition of logger certification *programs*, where they exist, that include:
 - a. completion of *SFI Implementation Committee* recognized logger training *programs* and meeting continuing education requirements of the training *program* of key personnel;
 - b. independent in-the-forest verification of conformance with the logger certification *program* standards;
 - c. compliance with all applicable laws and regulations including responsibilities under the U.S. Endangered Species Act, the Canadian Species at Risk Act and other measures to *protect wildlife habitat including Forest with Exceptional Conservation Value (critically imperiled and imperiled species and ecological communities)*;
 - d. use of *best management practices* to *protect* water quality;
 - e. adherence to a logging safety *program*;
 - f. compliance with acceptable *silviculture* and utilization standards;
 - g. aesthetic management techniques employed where applicable; and
 - h. adherence to a management or harvest plan that is site specific and agreed to by the forest landowner.
 - i. independent verification that each crew includes an individual who:
 - i. has completed the *SFI Implementation Committee* approved *wood producer* training program,
 - ii. is an owner of, employee of, or contracted by the *wood producer*, and
 - iii. has direct responsibility and is on-site regularly to consistently carry out the roles and responsibilities of the *wood producer*.

SFI recognizes that there are logger training programs in some jurisdictions that require more than the level of training as required in Forest Management Standard Performance Measures 12.1. and 12.2 (and Fiber Sourcing Standard Performance Measures 6.1 and 6.2). These programs also offer training that their proponents believe is the equivalent of the *certified logging company* requirements in Performance Measure 12.3 (and Fiber Sourcing Standard Performance Measure 6.3). SFI also recognizes that these programs may wish to apply to the *SFI Implementation Committees* in their State or Region for recognition as *certified logging companies*, those companies that have successfully completed these training programs. To facilitate this application process, *SFI Implementation Committees* shall review the candidate programs and assess them impartially. To be credible, the *SFI Implementation Committee's* recognition process must be publicly available citing all the requirements to be met by a

candidate program and all requirements must be consistent with the SFI Standards Principles and Objectives.

At a minimum, the *SFI Implementation Committee* must assess and confirm the candidate program's requirements meet the requirements at *SFI Forest Management Standard Performance Measure 12.1* and *Performance Measure 12.2* (and *Fiber Sourcing Standard Performance Measure 6.1* and *6.2*), and demonstrate equivalence with the requirement at *Forest Management Standard Performance Measure 12.3* (and *Fiber Sourcing Performance Measure 6.3*). Additionally, the *SFI Implementation Committee* must determine the program's requirements do not include practices that appear inconsistent with the SFI Standards Principles and Objectives.

SFI understands that a *certified logging company* program may wish to appeal an unsuccessful application to an *SFI Implementation Committee*. In the event the *certified logging company* program wishes to appeal the *SFI Implementation Committee* decision, the *certified logging company* shall send a written notice of appeal to SFI Inc. Upon receipt, SFI Inc. will pass the notice of appeal to the External Review Panel which will impartially assess the *SFI Implementation Committee's* review of the application and its decision. Upon the completion of its review the ERP will inform the appellant of its decision in writing. The decision of the External Review Panel shall be final. An applicant who is unsuccessful in the *SFI Implementation Committee* application or the appeal can make changes to their programs as determined by the written appeals decision and reapply for recognition by the *SFI Implementation Committee*. If directed by the External Review Panel appeals decision, the *SFI Implementation Committee* shall make whatever changes are necessary to ensure a fair, impartial review process for recognition of certified logging programs.

Expectations for On-site Supervision by *Qualified Logging Professional* or *Certified Logging Company*

SFI 2022 Forest Management Standard Indicator 12.3.1 i. and *SFI 2022 Fiber Sourcing Standard* Indicator 6.1.6 c. and 6.3.1 i. require that a logging crew is supervised by an individual who "has direct responsibility and is on-site regularly to consistently carry out the roles and responsibilities of the *wood producer*". It is understood a logging crew will not be under the supervision of a *qualified logging professional* or *certified logging company* at all times given the additional responsibilities that can be placed on the supervisor such as dealing with equipment failures, etc. Also, it is understood that the environmental and legal risks inherent with a logging site can vary. When assessing whether a logging site needs a trained supervisor "onsite regularly" it is the knowledge of such risks that needs to be assessed and taken into account. For a site with high biodiversity or water quality values, or a complicated harvest unit boundary, it is reasonable to expect regular onsite supervision of the crew. The principal of the logging company or his representative should be sufficiently knowledgeable about the harvest unit and its harvest plan to do this risk assessment. Using this assessment, the contractor principal or his representative can determine the level of onsite supervision required to consistently carry out the roles and responsibilities of the *wood producer* or if additional trained supervisors are required on the harvest site.

2. SFI 2022 Fiber Sourcing Standard

Objective 2. Adherence to Best Management Practices

Best Management Practices

Objective 2 of the *SFI 2022 Fiber Sourcing Standard* calls for adherence to *Best Management Practices*: "To monitor the use of *best management practices* to *protect* water quality."

The use of *best management practices* to *protect* water quality is a critical component of sustainable forest management and is emphasized in the *SFI 2022 Fiber Sourcing Standard* with requirements for on-the-ground management, monitoring, training and research. The *SFI 2022 Fiber Sourcing Standard* strengthened requirements for *best management practices* application with a new indicator:

"2.1.1 Use of written agreements for the purchase of raw material sourced directly from the forest is required and must include provisions requiring the use of *best management practices*."

While it is not practical to have auditing requirements that go beyond reviewing *Certified Organizations'* contracts for purchasing raw material from their suppliers to ensure they do require the use of *best management practices*, this new indicator will further highlight the importance of *best management practices* and their use by all suppliers throughout the supply stream.

3. SFI 2022 Fiber Sourcing Standard, SFI 2022 Chain of Custody Standard and SFI 2022 Certified Sourcing Standard

SFI Due Diligence System for Assessment Risk of Sourcing from Controversial Sources

The SFI due diligence system provides the framework for assessing the risk of sourcing from controversial sources whether in the United States, Canada or offshore. Below are resources a *Certified Organization* can use to assist in addressing the elements of the controversial sources definition.

- Forest activities which are not in compliance with applicable state, provincial, federal, or international laws - The United States and Canada have a strong legal framework which *Certified Organizations* must abide by. *Certified organizations* can refer to the latest Transparency International (TI) Corruption Perception Index (CPI). A score higher than 50 is considered low risk.
- Forest activities which are contributing to regional declines in habitat conservation and species protection (including biodiversity and special sites, threatened and endangered species) - The SFI program has strong existing measures in the SFI 2020 Forest Management Standard and the SFI 2020 Fiber Sourcing Standard regarding conservation of biodiversity. The United States and Canada also have strong legal frameworks which *Certified Organizations* must

abide by. *Certified organizations* can refer to the latest Environmental Performance Index (EPI) score of "Biodiversity & Habitat" of the country. A score higher than 50 is considered low risk.

- Conversion sources originating from regions experiencing forest area decline - Regions with a net loss of forest area <1% over the most recent ten years of available data are considered low risk. *Certified organizations* can refer to public data such as FAO, FIA ecoregional data, and Statistics Canada, Canadian Forest Service, State, Provincial or Federal "State of the Forest" reports.
- Forest activities where the spirit of the ILO Declaration on Fundamental Principles and Rights at work (1998) are not met - The U.S. and Canada are both members of ILO, by virtue of that membership, they commit to promote and realize the principles set forth in the ILO Declaration on Fundamental Principles and Rights at work (1998) through laws and regulations which include support of the basic principles of freedom of association and the right to collective bargaining; elimination of child labor and forced labor; and elimination of discrimination.
 - Forest activities where the spirit of the United Nations Declaration on the Rights of Indigenous Peoples (2007) are not met - United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) seeks to enhance harmonious and cooperative relations between the States and Indigenous Peoples in the spirit of partnership and mutual respect. The U.S. can refer to this study by Cornell Law School, and Canada can refer to the Canadian Constitution Act. Fiber from countries without the following regulatory frameworks will require a risk assessment. Domestic legal regime that considers regional particularities pertaining to Indigenous Peoples' rights, including (a) historical and cultural backgrounds of Indigenous Peoples and, (b) treaties, agreements and other constructive arrangements between Indigenous Peoples and the State;
 - Political or legal mechanisms for Indigenous People to pursue their unique interests and seek just and fair redress based on the principles of justice, democracy, respect for human rights, non-discrimination and good faith; and
 - Right or ability of Indigenous Peoples to organize and advocate through self-determined representative institutions.
- Fiber sourced from areas without effective social laws - The United States and Canada have a strong legal framework. Fiber from countries without effective laws addressing the following will need a risk assessment. *Certified organizations* can refer to the latest Transparency International (TI) Corruption Perception Index (CPI). A score higher than 50 is considered low risk.
 - workers' health and safety;

- fair labor practices;
 - Indigenous Peoples' rights;
 - anti-discrimination and anti-harassment measures;
 - prevailing wages and
 - workers' right to organize.
- Illegal Logging including trade in CITES (The Convention on International Trade in Endangered Species of Wild Fauna and Flora) listed species - Harvesting and trading of wood fiber in violation of applicable laws and regulations in the country of harvest. The United States and Canada have a strong legal framework. *Certified organizations* can refer to the latest Transparency International (TI) Corruption Perception Index (CPI). A score higher than 50 is considered low risk. Refer to SFI's policy on Illegal Logging in SFI Section 8 - Policies for more information.
 - Conflict Timber - The country/region has a been identified as having high intensity violent conflicts according to the Heidelberg conflict barometer.
 - Genetically modified trees via forest tree biotechnology - The SFI program has strong existing measures in the SFI 2020 Forest Management Standard and the SFI 2020 Fiber Sourcing Standard regarding research on genetically modified trees via forest tree biotechnology. SFI also has a policy on genetically modified trees via forest tree biotechnology located in SFI Section 8 Policies.

Because genetically modified forest trees are not approved for commercial plantings in the United States and Canada, and the SFI Forest Management Standard is endorsed by the Program for the Endorsement of Forest Certification (www.pefc.org) which has restrictions on the use of genetically modified trees, the use of fiber from genetically modified trees via forest tree biotechnology is not approved for use in SFI labeled products.

SFI realizes that much research is still being conducted to study the ecological cost benefits of genetically modified trees and regulations concerning forest biotechnology continue to evolve. As such research and regulations develop, SFI Inc. will review to understand the impacts of genetically modified trees from an ecological perspective and SFI will proactively review and update the SFI this policy as necessary.

4. SFI Audit Procedures

Certifying Multiple Forest Management Units or Fiber Procurement Operations

SFI recognizes that an organization might manage multiple forest management units/tenures and operate multiple manufacturing facilities. As such, an organization can choose which forest management units/tenures obtain SFI Forest Management certification. Isolated small forest management units for which the primary purpose is to buffer a manufacturing facility are not required to be certified to the *SFI 202215-2019 Forest Management Standard*. These forest management buffer areas may include wood production as an additional goal but not the primary goal and activities in these buffer areas should reflect the commitment to SFI and be in compliance with the requirements of the *SFI 2022 Fiber Sourcing Standard*. Furthermore, only

those manufacturing facilities that are sourcing from the *wood and fiber supply area* of the land units/tenures that are certified to the *SFI 2022 Forest Management Standard* are required to obtain *SFI 2022 Fiber Sourcing Standard* certification. Organizations with multiple forest management units/tenures and multiple manufacturing facilities have 2 years to ensure certification to the respective SFI Standards.

Primary Producers with SFI Chain of Custody and SFI Fiber Sourcing Certification

1.2 - Additional Requirements in the *SFI 2022 Chain of Custody Standard*, requires *primary producers* to conform to the *SFI 2022 Fiber Sourcing Standard* if they choose to get certified to the *SFI 2022 Chain of Custody Standard*.

However, we understand the work requirements needed to obtain a certification to the *SFI 2022 Fiber Sourcing Standard*, and given this work requirement, *primary producers* have 2 years to ensure certification to the *SFI 2022 Fiber Sourcing Standard*. This two-year time frame will allow the primary producer to meet immediate market demands, while working towards fiber sourcing certification.

Exemption from Chain of Custody Surveillance Audits

An *SFI chain of custody certified organization* can upon receiving approval from their certificate body waive a surveillance audit if they have not sold any certified material since their last audit. The chain of custody *certified organization* must sign a declaration for their *certification body* stating that no material has been sold as *SFI certified* since the last audit. The declaration must also include a commitment by the chain of custody *certified organization* to contact the *certification body* as soon as they wish to sell *SFI certified* material. *Certification bodies* shall not waive more than two consecutive audits.

Scoping Suppliers into a Chain of Custody

A *Certified Organization* that sources from *primary producers* can include these organizations in the scope of their *SFI 2022 Chain of Custody Standard* certificate. The *Certified Organization* will be responsible for all chain of custody requirements of the organizations they scope into their own chain of custody procedures. The scoped-in organizations are subject to sample audits. *Certification bodies* shall follow guidelines in Section 9 SFI 2022 Audit Procedures and Auditor Qualifications and Accreditation - Appendix 1, for "multi-site organizations." If the *Certified Organization* scopes in *primary producers*, the *Certified Organization* is also responsible for all *SFI Implementation Committee* related activity for that company.

5. SFI Implementation Committees

SFI Certified Organizations established state *SFI Implementation Committees* in 1995 and the first provincial *SFI Implementation Committee* in 2001. *SFI Implementation Committees* provide a strong foundation for the *SFI program* and make important contributions in assuring *SFI Standard* conformance and *SFI program* recognition. The state, provincial and regional *SFI Implementation Committees* are semi-autonomous committees reflecting significant geographic

and organizational diversity. This flexible, grassroots infrastructure is a fundamental strength of the *SFI program* and its goal to promote responsible *forestry* across all forest ownerships.

The definition of *SFI Implementation Committee (SIC)* in Section 14 of the *SFI 2022: Standard and Rules* is: "A state, provincial, or regional committee organized by *SFI Certified Organizations* to facilitate or manage the *programs* and alliances that support the growth of the *SFI program*, including sustainable forest management."

The *SFI Implementation Committee* governance document for reviewed for relevance to the current *SFI program*, and to ensure consistency with the *SFI 2022 Standard and Rules*. The *SFI Implementation Committee* governance document will be updated in conjunction with future *SFI Standard* revisions, and may also be reviewed between scheduled revisions if there are significant *SFI program* changes.

Some key elements from the governance document and how they relate to the *SFI 2022 Standards* are included here.

Vision Statement

SFI Implementation Committees (SICs) are an integral part of the *SFI program* and play a vital role in promoting training and landowner outreach, maintaining integrity of the *SFI program* and supporting and promoting responsible *forestry* and the *SFI program* at local levels.

Mission Statement

The Memorandum of Understanding (MOU) defines the *SIC* Mission, ensuring *SIC* goals and priorities are based on recommendations from the *SIC* Governance Review Ad-hoc Committee. The MOU clarifies both the *SIC* mission and supports obligations for *SFI Certified Organizations* as follows:

- I. Overall *SIC* Mission – Effectively facilitate or manage at a state, provincial or regional level the *programs* and alliances which support the growth of sustainable forest management through the *SFI program*.
- II. Core *SIC* Mission – Priorities for all *SICs*:
 - a. Training & Education – Establish criteria and identify delivery mechanisms for *qualified logging professional, qualified resource professional* and *wood producer* training, and defining what it means to be "*SFI trained*."⁹ Establish criteria for recognition of *certified logging companies*, where they exist.¹⁰
 - b. Inconsistent Practices – Establish protocols for addressing, investigating, and responding to *SFI Standard* nonconformity allegations and inconsistent practices, and allegations regarding non-*Certified Organization* forest management practices.¹¹
 - c. Landowner Outreach – Focus landowner outreach efforts on education and technical assistance.¹²

⁹ *SFI 2022 Standard* Indicator 12.2.1 & 12.2.2 (FM) and 6.2.1 & 6.2.2 (FS).

¹⁰ *SFI 2022 Standard* Indicator 12.3.1 (FM) and 6.3.1 (FS).

¹¹ *SFI 2022 Standard* Performance Measure 13.3 (FM) and 7.3 (FS).

¹² *SFI 2022 Standard Indicators* 13.1.1 and 13.2.1 (FM) and 7.1.1 and 7.1.2 (FS).

- d. Informational Resources – Focus informational resource efforts on increasing *SFI program* recognition, awareness and support with groups, such as local opinion leaders and *forestry* resource professionals.¹³
 - e. Annual Reporting – Submit the *SIC* Annual Progress Report to *SFI Inc.*
 - f. *SFI Program Integrity*¹⁴ -- Protect the integrity of the *SFI program* by:
 - a) ensuring proper *SIC* service mark usage;
 - b) alerting *SFI Inc.* when improper communications or misleading claims are observed;
 - c) avoiding the appearance of participation or compliance by non-*SFI Certified Organizations*; and
 - d) avoiding appearance of *third-party certification* by non-certified *SFI Certified Organizations*.
- III. Secondary *SIC* Mission – Below are priorities which may be determined by each *SIC*; however, individual participants may choose not to participate or support these *objectives*.
- a. Training & Education – Provide delivery mechanisms for *qualified logging professional*, and *qualified resource professional*, and *wood producer* training to address *SFI program* needs not adequately provided by other *programs*.
 - b. Market Outreach – Sponsor active market outreach efforts in local communities that may include paid advertising.
 - c. Recruitment – Encourage large landowners and all forest products facilities to enroll as *SFI Certified Organizations*; encourage family forest owners to participate in *American Tree Farm System* or similar *programs* recognized by the *SFI program*, as appropriate.
 - d. Forest Management Statistics – Encourage government agencies to provide accessible timely, accurate harvest and regeneration statistics, in support of a *Certified organization's sustainable forestry programs*.¹⁵
 - e. Research – Promote *forestry* research, science and technology, upon which sustainable forest management decisions are based.¹⁶

SIC Organization

SICs are semi-autonomous committees reflecting significant geographic and organizational diversity. This flexible, grassroots infrastructure is a fundamental strength of the *SFI* program and our goal to promote *sustainable forestry* across all ownerships.

SIC Participation

All *SFI Certified Organizations* owning and/or operating forest product facilities, owning and/or managing forestland, or procuring fiber within the state or province are expected to participate in the *SFI* Implementation Committees (*SICs*). *SFI Certified Organizations* are required to participate in the *SIC* where significant operations exist, i.e. majority of forestland owned and/or fiber procured. The expectation is that *Certified Organizations* with facilities within the scope of an *SFI 2022 Fiber Sourcing Standard* certificate will support all the *SICs* in the regions, states or provinces where they procure fiber. However, there may be regions, states or

¹³ *SFI 2022 Standard* Performance Measure 13.2 (FM) and 7.2 (FS).

¹⁴ *SFI 2022 Standard Indicators* 13.3.1 and 13.3.2 (FM) and 7.3.1 and 7.3.2(FS).

¹⁵ *SFI 2022 Standard* Performance Measure. 11.2 (FM) and 8.1 (FS).

¹⁶ *SFI 2022 Standard* Objective 11 (FM) and Objective 5 (FS).

provinces where a *Certified Organization* sources a de minimis amount of fiber for a given facility. In these situations it is possible for a *Certified Organization* to meet the requirements of Performance Measure 6.2 of the *SFI 2022 Fiber Sourcing Standard* in the regions where the majority of the *Certified organization's* procurement occurs.

6. Transition to the SFI 2022 Standards and Rules

Changes adopted by the *SFI Inc.* Board of Directors to the *SFI Standards* must be incorporated into a *Certified organization's policies*, plans, and management activities within one year of adoption and publication. Similarly, changes to certification procedures and qualifications for *certification bodies* must be accomplished within one year of adoption and publication.

It is the *Certified organization's* responsibility to work with the *certification body* to establish a surveillance audit schedule that meets the requirements outlined in the Section 10 *SFI Audit Procedures and Auditor Qualifications and Accreditation*. Additional guidance regarding the transition is included below:

- The *SFI2022: Standard and Rules* replace the *SFI 2015-2019 Standard*, which is the current standard implemented by organizations within their forest operations in United States and Canada.
- *SFI Inc.* developed the *SFI2022: Standard and Rules*, but does not conduct auditing and certification. All certification, recertification and surveillance audits to the *SFI 2022 Standards and Rules* shall be conducted by *certification bodies* accredited by the ANSI National Accreditation Board (ANAB) or the Standards Council of Canada (SCC) to conduct *certification to SFI 2022 Standards and Rules*.
- Accredited *certification bodies* are required to maintain audit processes consistent with the requirements of International Organization for Standardization (ISO) 17021:2015 conformity assessment – requirements for bodies providing audit and certification of management systems; and conduct audits in accordance with the principles of auditing contained in the ISO 19011:2018 Guidelines for Quality and/or Environmental Management Systems Auditing.
- ANAB and SCC-accredited certification to *the SFI 2022 Standards and Rules* shall not be granted until they are published as standards.
- *SFI Certified Organizations* have one year from the time the *SFI 2022 Standards and Rules* take effect on January 1, 2022 to implement all new and revised requirements, and *Certified Organizations* must demonstrate conformance to the new requirements at their first surveillance audit following the implementation period. Earlier adoption is encouraged.
- Initial certification audits in 2022 must be conducted against the *SFI 2022 Standards and Rules*.
- After March 31, 2022 all re-certifications must be conducted against the *SFI 2022 Standards and Rules*. For re-certifications against the *SFI 2022 Standards and Rules nonconformities* against changes made in the revised *SFI 2022 Standards and Rules* shall be reported but will not adversely affect re-certification until after December 31, 2022.

- Surveillance audits through December 31, 2022 may be conducted against either the *SFI 2015-2019 Standard and/or the 2015-2019 SFI Chain of Custody Standard* or the *SFI 2022 Standards and Rules* at the *Certified Organizations* choice. For surveillance audits after March 31, 2022, *nonconformities* against changes made in the *SFI 2022 Standards and Rules* shall be reported but will not adversely affect certification status until December 31, 2022; these audits shall also include an assessment of action plans to fully transition to the *SFI 2022 Standards and Rules* by December 31, 2022.
- After December 31, 2022 all surveillance audits must be conducted against the SFI 2022 Standards and Rules.