Note that the definition of deforestation does not apply to activities needed to achieve sustainable forest management which includes forest lands used for forest and wildlife management such as wildlife food plots or infrastructure such as forest roads, log processing areas, trails etc. This is consistent with Performance Measure 1.3, Indicator #1 in the *SFI 2022 Forest Management Standard*.

The *SFI 2022 Fiber Sourcing Standard* and the *SFI 2022 Chain of Custody Standard* also require SFI-certified organizations to assess the risk of sourcing forest fiber from controversial sources including from conversion sources originating from regions experiencing forest area decline. If a SFI-certified organization determines they are sourcing from such sources, they will need to mitigate this risk of sourcing this forest fiber.

FOREST DEGRADATION

Recently, discussion points around forests have shifted from deforestation to the less well defined, "forest degradation." Forest degradation is a much more nuanced concept than "forest cover loss" and requires a more detailed review and analysis.

While there are well over 100 published definitions of "forest degradation"[5], the concept can be broadly defined when anthropogenic disturbance impacts a forest landscape to the point where it is unable to recover and deliver its expected range of ecosystem services.

Any list of ecosystem services provided by a forest would be lengthy but suffice it to say it would include the filtering and recharge of freshwater, flood control, carbon sequestration, oxygen production and air filtration, wood fiber production, biodiversity maintenance, provision of non-timber forest products, along with the provision of recreational, aesthetic, and spiritual values.

While metrics do not exist to readily measure all of these, there are indicators for many of them, and one must presume that the more of them that are maintained, the higher the likelihood of the others being maintained.

Further, many of these values are variable in space and time, and several are not coincidental in space; a regenerating fire scar or clear cut may have low aesthetic value for a few years but still have reasonably high carbon sequestration rates, especially after silvicultural treatment, and an old-growth stand may have low carbon sequestration, but high spiritual value. Further, the diversity of a young stand may be similar to an old stand, but have very different species composition, meaning that at a broader scale, both are required to maintain biodiversity. In short, many of these ecosystem values need to be considered over large spatial and temporal scales covering the entire life-cycle of the forested landscape.

Catastrophic large-scale disturbance such as fires, insect outbreaks and windthrow are not considered forest degradation, if the forest is restored, even though some may have root causes in anthropogenic climate change or past forest management decisions. Where these disturbances do occur, silvicultural activities such as salvage logging and regeneration activities can have a positive effect on forest health.

Some forest management activities may be considered to have lasting and direct positive anthropogenic effects. These may include positive impacts on biodiversity through restoration, assisted migration, or fire management, among others. Such activities would not be considered degradation, although they may differ from natural processes.

The SFI 2022 Forest Management Standard prevents forest degradation through five core areas which act to limit lasting and significant direct anthropogenic impacts to the structure, composition, or function of the forest.

Below are those areas and the key requirements of the SFI 2022 Forest Management Standard.

1. **PRODUCTIVITY** (e.g., growing stock, non-timber forest products)
    - Prompt forest regeneration after harvest: Performance Measure (PM) 2.1.
    - Maintenance of forest soils and stocks: PM 2.3.
2. **BIOLOGICAL DIVERSITY** (e.g., ecosystem state, forest fragmentation, species, species functional groups)
    - Protection and maintenance of native biodiversity: PM 4.1.
    - Conservation of species at risk and rare communities: PM 4.2.
    - Identification and protection of ecologically important sites: PM 4.3.
3. **DISTURBANCES** (e.g., alien invasive species, fire, water quantity)
    - Protection of water values: PM 3.2.
    - Avoidance of negative effects of biological agents: PM 2.4.
    - Limitations of forest degradation from wildfire and restore forest post-wildfire: PM 10.1.
4. **CARBON STORAGE**
    - Enhancement of opportunities for carbon capture on forests that are owned or managed: PM 9.2.

[5] Lund 2009, "What is a degraded forest?", White Paper on Forest Degradation Definitions Prepared for FAO.

5. **PROTECTIVE FUNCTIONS** (e.g., soil erosion, water quality)
    - Maintenance of forest soils and stocks: PM 2.3.
    - Protection of water values: PM 3.2.

Furthermore, SFI Performance Measure 1.2 lays out specific constraints on conversion of one forest cover type to another forest cover type, which in turn also prevents forest degradation. In particular, PM 1.2 precludes conversion of one forest cover type to another forest cover type in the absence of objectives for long-term outcomes that support maintaining native forest cover types and ecological function. This includes where conversion puts rare; ecologically important, native forest cover types at risk of becoming rare, or where conversion creates significant adverse impacts on Forests with Exceptional Conservation Value, old growth forests, or forests critical to threatened and endangered species.

Objective 2. Forest Health and Productivity

Prohibited Chemicals – *SFI 2022 Forest Management Standard* and *SFI Small Lands Group Certification Module*

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 this is achieved, the use of forest management pesticides must follow federal, state, and *local* laws; be applied according to the label instructions; and be implemented with proper equipment and training. Furthermore, pesticides, such as chlorinated hydrocarbons whose derivates 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.

The *Certified Organization* is responsible for ensuring that chemicals from the WHO type 1A and 1B list of prohibited chemicals are not used in forest management. 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 its rationale to its *certification body* for approval. The *certification body* will then monitor the chemical usage approved under this variance, if this variance is approved. (WHO list of prohibited type 1A and 1B chemicals)

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 used 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). (List of chemicals banned under the Stockholm Convention on Persistent Organic Pollutants)

Small Lands Group Certification Module

The Module at 4.3.4.1 directs the landowner to evaluate alternatives to chemicals for the control of pests, pathogens and unwanted vegetation. Requirement 4.3.4.2 states that if used, chemicals shall be approved by the Environmental Protection Agency (EPA) in the United States or the Pest Management Regulatory Agency (PMRA) of Health Canada. They shall be applied, stored, and disposed of in accordance with EPA or PMRA approved labels and applied by persons who are trained, licensed (as required by their jurisdiction) and appropriately supervised. The landowner is responsible for ensuring that the planned use of a chemical is in compliance with the EPA / PMRA label requirements. Use of chemicals should be documented by the landowner or designated representative.

In the exceptional case where a landowner believes that a variance for the use of a WHO 1A and 1B chemical is required they should work with their *group manager* and submit the required rationale to the *certification body* as per the process above.

Soil Health

Performance Measure 2.3 now includes requirements to implement *practices* that *protect* and maintain forest *soil health*, in addition to soil *productivity*. This guidance suggests some potential *practices* that could be considered by *Certified Organizations* to maintain those values.

The way in which forests are managed can improve or degrade the quality or health of forest soils, which represent a complex ecosystem that includes living microorganisms, minerals, and organic matter. Together, this dynamic medium serves to regulate water, air, and nutrients, and thus interplays directly with health of the forest ecosystem. Healthy soils provide many functions that support plant growth, including nutrient cycling, biological control of plant pests, and regulation of water and air supply. These functions are influenced by the interrelated physical, chemical, and biological properties of soil, many of which are sensitive to soil management practices (primary source: PennState Extension—Managing Soil Health: Concepts and Practices).

Soil health is essential to forest *productivity,* and ecosystem function. Managing for *soil health* (improved soil function) is mostly a matter of maintaining suitable *habitat* for the diversity of organisms that depend on it. This can be accomplished by *minimizing* soil disturbance, ensuring plant diversity, maintaining vegetative cover, and avoiding serious alterations to soil chemistry.