



**NEPCon Interim Standard for Assessing
Forest Management in US & Canada –
Maple Sugar NTFP Addendum**

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1 Introduction

This addendum is to be used to evaluate maple sap and syrup operations for FSC® non timber forest product (NTFP) certification in the United States and Canada. The maple indicators outlined below are evaluated in addition to FSC or Rainforest Alliance regional standards for forest management. Compliance with the maple indicators is required for expansion of the certificate scope to permit FSC labelling of maple sap/syrup products.

2 Background

Forests can be managed for many different objectives and products. Such management can occur in natural forests or plantations, for timber or non-timber forest products, include mechanized or manual harvesting, and managed by a large industrial operation or a local community or landowner cooperative. Many combinations are possible. A critical question has been - how to evaluate the wide range of ecological, socioeconomic and silviculture impacts of forest management activities in a clear and consistent fashion, based on a combination of scientific research and practical experience?

3 Public Comment

Organizations and individuals are encouraged to submit their concern or comments regarding this standard to the NEPCon contact person noted above.

4 Content

4.1 Terms and definitions

Acronyms:

FME	:	Forest management enterprise
FSC	:	Forest Stewardship Council®
HCVF	:	High conservation value forests
NTFP	:	Non-Timber Forest Product.
SLIMF	:	Small and Low Intensity Managed Forests

4.2 NEPCon Interim Standard for Assessing Forest Management in US & Canada – Maple Sugar NTFP Addendum

Principle #1: Compliance with laws and FSC Principles

Criterion 1.1 Forest management shall respect all national and local laws and administrative requirements.

Indicator 1.1.MAPLE1 Maple tapping and processing equipment, processing methods and transport meet all applicable international, national and local laws governing licenses fees, sanitation standards, quality control, and packaging and labeling requirements.

Verifiers:

- *The sugarmaker adheres to national and state laws governing acceptable syrup density, color grading, packing and labeling regulations and other relevant laws.*
- *The sugarmaker maintains an up-to-date color kit and an accurate, periodically tested hydrometer.*
- *Enrollment in organic or state certification program (e.g., Vermont's "Seal of Quality" program).*
- *No formal complaints have been filed with the sugarmaker about product quality.*

Indicator 1.1.MAPLE2 For comestible items, management undertakes proactive product quality control actions to insure its products pose no health risks to the final consumer.

Verifiers:

- *If a defoamer is used in the sugaring shed, it meets organic certification standards;*
- *Cleaning practices do not introduce agents or chemicals not recognized or approved for cleaning of equipment used in the processing of food products;*
- *Sugarmakers have their syrup independently tested for lead contamination over a period of at least three years unless they can demonstrate that equipment does not present a health risk;*
- *Use of paraformaldehyde pellets or other chemicals in tap holes is prohibited.*

Criterion 1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.

Indicator 1.2. MAPLE The FMO or NTFP harvester(s) maintains up-to-date harvesting

permits, collecting licenses, collecting contracts or cultivation permits and pays any fees, leases, royalties, etc. in a timely manner.

Verifiers:

- *Any invoices for purchasing sap/syrup from other sugarmakers or lease fees to tap trees on land not directly owned by the sugarmaker are up-to-date in payment.*

Principle #2: Tenure and use rights and responsibilities

Criterion 2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

Indicator 2.3.MAPLE Any conflicting claims over traditional access to sugaring stands is being addressed in a systematic and effective manner.

Principle #3: Indigenous peoples' rights

Criterion 3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.

Indicator 3.3.MAPLE Sites, as well as plants and animal resources of cultural and religious significance shall be identified and protected during sugaring activities.

Principle #4: Community relations and worker's rights

Criterion 4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

Indicator 4.1.MAPLE When hiring for sugaring operations, local communities and residents shall be given first preference for jobs involving sugarbush thinning, tapping, processing, packing or sale of maple products

Criterion 4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.

Indicator 4.2.MAPLE1 Hired help for sugarbush management, tapping or work in the evaporating shed or sales area shall be fairly compensated in accordance with local laws and norms.

Indicator 4.2.MAPLE2 Sugarbush and evaporator workers shall be provided with insurance to cover any work related injuries.

Indicator 4.2.MAPLE3 The sugarbush manager shall keep an up-to-date log of the in-kind labor performed managing the sugar bush; people hours and relationship to the producer are recorded; and bartered services identified and recorded.

Criterion 4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.

Indicator 4.4.MAPLE1 Forest manager can demonstrate he has communicated in advance management activities to neighbours, local communities and other groups and individuals when sugarbush management or processing activities have the potential to negatively impact them.

Indicator 4.4 .MAPLE2 Large-scale sugaring operation shall communicate management activities to affected communities in public meetings, mailings or other types of communications in advance when harvest or processing activities has the potential to impact local communities.

Principle #5: Benefits from the forest

Criterion 5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

Indicator 5.2.MAPLE Forest managers shall keep up-to-date on sugarbush management and syrup processing developments and technology.

Criterion 5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

Indicator 5.3.MAPLE1 Sap collection equipment shall be installed with minimal damage to trees and other resources and tubing and other material disposed of offsite upon completion of its useful life.

Indicator 5.3.MAPLE2 Maple sap gathering infrastructure (i.e. collection pipelines) and management activities do not negatively impact wildlife populations or other forest resources.

Verifiers:

- *Mainline systems are installed in an appropriate and recognized manner and do not obstruct movement of wildlife populations e.g. block established travel corridors*
- *Sap collection pipeline is removed immediately after sap season if areas of large mammal travel paths are obstructed.*
- *Cleaning practices do not introduce into the environment agents or chemicals not recognized or approved for sugar bush use.*

Criterion 5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.

Indicator 5.6 MAPLE1 The intensity, frequency and seasonality of sap harvest, by area and volume, shall be based on a combination of scientific study and/or long-term local experience and knowledge and does not exceed sustainable levels.

Verifiers:

- *The area of the sugarbush is delineated on maps and the estimated number of taps used within the area is documented;*
- *Minimum tapping diameter and the number of taps used per size class are documented;*
- *Tapping guidelines following a recognized and appropriate system will be adopted and adhered to.*

Indicator 5.6.MAPLE2 Silvicultural treatments shall establish and maintain proper spacing of trees and adequate regeneration of sugar maple.

Verifiers:

- *Thinning is based on spacing and tree vigor.*
- *Retention of sugar trees may be supported by measuring sugar content of the trees (through use of a refractometer).*

Indicator 5.6.MAPLE3 Allowable tapping rates and sap harvest rates and best management practices shall be followed in the forest.

Verifiers:

- *Trees smaller than the minimum allowable tapping diameter are not tapped.*
- *Number of taps used per size class follows management prescription.*

- *Use of paraformaldehyde pellets or other chemicals in tap holes is prohibited.*
- *Taps are immediately pulled from trees at the end of the sugaring season.*
- *Tap holes are drilled with a slight upward angle and are not excessively deep (i.e., exceed 2.5 inches in depth).*
- *"Cluster tapping" is not practiced.*
- *Drop lines on tubing systems are of sufficient length to preclude cluster tapping (i.e., the drop line is long enough so that the tap can reach all sides of the tree and can be placed sufficiently above or below old tap holes).*

Indicator 5.6.MAPLE4 Maple sap harvest levels shall be adjusted when populations exhibit decline or weakened condition.

Verifiers

- *Tapping is reduced or halted when trees exhibit decline, poor tap hole closure or symptoms of severe stress, or after a heavy thinning of the stand.*
- *Thinning does not take place after several defoliation events or stress events in the sugarbush (e.g., ice-damage).*

Principle #6: Environmental impact

Criterion 6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources - and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

Intent of Principle 6: Principle 6 addresses the protection of biodiversity through a precautionary approach. The precautionary approach is particularly important in areas of steep slopes and other fragile soils, of slow growth and/or slow regeneration, in the presence of a concentration of species at risk, in the absence of a forest inventory or data on growth rates, etc. Such situations require a conservative approach to harvest levels, periods and techniques.

Indicator 6.1.MAPLE Prior to operations, the manager identifies sensitive elements (e.g. diversity at the stand level, wildlife, species at risk, sensitive soils, etc.) on the site in order to minimize environmental impacts through recognized practices.

Criterion 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:

a) Forest regeneration and succession.

b) Genetic, species, and ecosystem diversity.

c) Natural cycles that affect the productivity of the forest ecosystem.

Indicator 6.3.MAPLE1 Sugarbush management and sap collection practices shall minimize impacts to forest composition and soil structure and fertility

Verifiers

- *Management encourages retention of non-maple species in the sugarbush to promote diversity and, potentially, promote pest resistance of the stand.*
- *Management practices avoid heavy cleaning of the sugarbush understory.*
- *Grazing is prohibited in the sugarbush.*
- *Access roads are kept to a minimum to avoid soil damage during spring snow melt.*
- *Adequate sugar maple regeneration is present.*

6.3.MAPLE2 The Intensity of sugarbush management shall be based on understanding of species and site productivity and potential limitations.

Verifiers

- *Sugaring takes place on sites well-suited for sugar maple growth;*
- *Tapping on severely stressed trees is halted unless those trees are scheduled for removal;*
- *Scheduled thinning are delayed immediately after severe defoliation or after severe damage from a natural event.*

Criterion 6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

6.5.MAPLE1 Sugarbush operations shall comply with or exceed Best Management Practices (BMPs) for water quality protection.

6.5.MAPLE2 Sugarbush operations shall minimize damage to soils and site productivity.

Verifier.

- *Operation monitors road and site conditions and suspend operations to avoid rutting or erosion.*

Criterion 6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

6.6MAPLE Use of pesticides in maple sap harvest areas shall be prohibited, unless said chemicals are allowed under local, national or international organic standards or they can be justified to control exotic and invasive species that pose a significant threat to the long term health and viability of the sugarbush and forest ecosystem.

Criterion 6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

Indicator 6.7MAPLE Unused sap collection materials and any waste generated from sugaring operations is removed from the forest and disposed of appropriately

Verifiers

- *Unused tubing and/or buckets are removed from the sugarbush.*
- *Waste or rubbish generated from gathering or processing activities are removed from the forest and disposed of in an environmentally appropriate manner.*

Principle #7: Management plan

Criterion 7.1 The management plan and supporting documents shall provide:

a) Management objectives.

- b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.
- c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.
- d) Rationale for rate of annual harvest and species selection.
- e) Provisions for monitoring of forest growth and dynamics.
- f) Environmental safeguards based on environmental assessments.
- g) Plans for the identification and protection of rare, threatened and endangered species.
- h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.
- i) Description and justification of harvesting techniques and equipment to be used.

7.1.MAPLE1 The forest management plan shall specifically address and incorporate sugarbush management objectives and silvicultural prescriptions.

Verifiers:

- *The sugarbush is incorporated into the management plan and on management maps and has clear management objectives.*
- *Maps delineate the sugarbush area and indicate sugaring access roads and the sugaring shed.*
- *Silvicultural prescriptions for the sugarbush, whether under even-aged or uneven-aged management, are documented and followed.*
- *Silvicultural prescriptions, tree marking and harvesting operations do not favor the removal of non-maple species when maple is the dominant species*

7.1.MAPLE2 The Sugarbush Management sections of the plan shall be technically sound and sufficiently detailed, given the size, complexity and intensity of the forest operation. The plan shall include a description of and justification for the intensity of maple sap harvesting, the implemented harvesting technique and the equipment used.

Verifiers:

- *The sugar bush management plan addresses silvicultural practices for non-maple species*
- *The tapping rule is documented and information on the number of allowable taps per size class, the depth of taps and the placement of taps on the tapping band is specified in the management plan.*
- *Rationale for the equipment used is justified.*
- *If prescribed tapping rates vary from well-established norms, compelling evidence justifies the deviation.*

- *Tapping rates are justified by prompt tap hole closure, published tapping guidelines and relevant site-specific data and observation.*
- *Use of "health spouts" or "narrow spouts" on small diameter trees (<10 inches DBH) is conservative until research shows such usage is ecologically and economically viable.*
- *The sugar bush management plan addresses silvicultural practices for non-maple species*

Criterion 7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.

Indicator 7.2.MAPLE Sugarbush management and harvesting practices shall be periodically adjusted to incorporate new scientific or technical information.

Verifiers:

- *Forest manager follows research and development related to maple sap and syrup production*

Criterion 7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.

7.3.MAPLE Workers receive adequate training and supervision to ensure proper tapping and processing techniques.

Verifiers:

- *Cluster tapping is not observed in the field.*
- *Tap holes are properly drilled (at a proper depth, with a new sharp drill bit, showing infrequent splitting of the bark from driving taps too deeply or into frozen tissue).*

Principle #8: Monitoring and assessment

Criterion 8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

Indicator 8.1.MAPLE Sugarbush monitoring shall be incorporated into the overall monitoring plan for the forest management operation and provide data on forest changes upon which management prescriptions can be updated.

Criterion 8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

- a) Yield of all forest products harvested.
- b) Growth rates, regeneration and condition of the forest.
- c) Composition and observed changes in the flora and fauna.
- d) Environmental and social impacts of harvesting and other operations.
- e) Costs, productivity, and efficiency of forest management.

Indicator 8.2.MAPLE The sugarbush monitoring plan is technically sound and identifies/describes monitoring of the following:

changes in the maple component of forest composition (size class and distribution)
maple growth rates and regeneration;

changes in maple health (decline, die-back or poor tap hole closure rates);

presence of pests; and,

harvesting levels including the number of taps used, volume of sap collected, and volume and grades of syrup produced.

Criterion 8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."

Indicator 8.3.MAPLE1 The volume and source of sap collected and the volume and grades of syrup produced shall be recorded for future tracing.

Indicator 8.3.MAPLE2 Invoices of syrup or sap sales are documented, include required information (certification code, FSC product group) and are stored for inspection.

Indicator 8.3.MAPLE3 For operations with multiple (certified and non-certified) sources of sap, production and labelling of product will follow FSC requirements for mixed products.

Indicator 8.3.MAPLE4 100% FSC Certified syrup and sap is kept separate from non-certified product and clearly distinguished through marks, labels or other means.

About NEPCon

NEPCon (Nature Economy and People Connected) is an international non-profit organisation working to support better land management and business practices that benefit people, nature and the climate in 100+ countries around the world. We do this through innovation projects, capacity building and sustainability services. We focus on forest and climate impact commodities and related sectors, such as tourism.

We are accredited certifiers for sustainability schemes such as FSC™ (Forest Stewardship Council™), PEFC (Programme for the Endorsement of Forest Certification), RSPO (Roundtable on Sustainable Palm Oil), Rainforest Alliance Sustainable Agriculture and SBP (Sustainable Biomass Program). We also certify to our own LegalSource™, Sustainable Tourism and Carbon Footprint Management standards. A self-managing division of NEPCon promotes and delivers our certification services. Surplus from certification activities supports NEPCon's non-profit activities.

NEPCon is recognised by the EU as a Monitoring Organisation under the EU Timber Regulation.

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