

## **Sugarbush Management Standards and Tapping Guidelines for Forestland in Use Value Appraisal**

The purpose of this document is to describe the forest management standards on enrolled forestland with trees tapped for maple sap. At the end of this document are the tapping guidelines. The term “shall” is used for mandatory requirements and the term “should” is used when practices are recommended.

While production of a food product such as maple syrup is an agricultural activity in which the processing of sap to maple syrup occurs in the sugarhouse, management of a woodlot for sap production is a forestry activity. A sugarbush is not agricultural land but a forested ecosystem with multiple values, products and services and—like any forestland—should be managed with these products and services in mind, including water quality, biodiversity, wildlife habitat, and value-added forest products.

The following standards shall be followed in sugarbush management on stands enrolled in Forestland UVA:

- There should be long-term planning for the recruitment or retention of multiple age classes (uneven-aged management is recommended, though even-aged management may be allowed). When regenerating a forest stand, hybrid silvicultural systems are also possible including continuous cover, and shelterwood with reserves.
- Since the basis of any long-term forest-based management activity, such as sugaring, is a healthy forest, minimum residual stocking standards for sugarbush management shall be the same as the minimum residual stocking standards for northern hardwood stands managed for sawtimber. See appropriate guides in UVA Manual Appendix A.
- No single entry while tending the forest with intermediate treatments should reduce stocking by more than one-third basal area, and residual stocking shall be expected to consist of healthy, vigorous trees with sound structure. Harvesting more than one-third basal area in any entry may cause sunscald, windthrow, epicormic branching or susceptibility to drought.
- It is understood that emphasis in a sugarbush is on maple sap production and the species of principal interest will be sugar maple and/or red maple. To avoid a monoculture, landowners and managers shall retain a minimum of 25% of total basal area in a combination of non-sugar maple species. (Note: It is recommended that the most varied suite of species found in the forest community be maintained or encouraged. This could include “up to” 8-11 species.) A variance of the 25% may be approved by the county forester if the landowner justifies the change. In instances when the stand, prior to harvest, already has less than 25% non-sugar maple trees, the percent residual non-sugar maple stocking shall not be less than pre-treatment and the management plan shall address ways to increase these percentages over time.
- Sugarbush management often includes the maintenance of saplines which may include annual clearing of trees, saplings and woody material from under, above, and near lines. The amount of woody material removed while clearing lines should be minimized to keep negligible any effect on the basal area, and in most cases it should be left on the ground to enhance coarse woody material. Beyond cutting for line clearing any additional harvesting for fuelwood or salvage shall be quantified in the plan with either a basal area target, number of crop trees to be released, or by indicating the volume to be removed from any stand.

- For purposes of UVA, Acceptable Growing Stock (AGS) is based on timber quality of the merchantable stem; trees that are healthy, vigorous, and single stemmed with minimal defect from rot, wounds or branches. It is recognized that a good sap producing tree may not be an acceptable timber tree. However, the definitions for AGS and Unacceptable Growing Stock (UGS) will remain the same for enrolled forest land managed for maple sap production to prevent potential high-grading which would adversely affect forest management options in the future. *Note: Large diameter UGS may be retained for tapping purposes as long as the ratio of UGS to AGS is not higher post-harvest.*
- Conversion of a stand to sugarbush use may require special consideration in those natural communities where maple is an associate species of lesser abundance. Every stand should be managed with consideration of the natural community type, tapping the maples only as feasible. Examples of such types are Red Maple Swamps, Riparian Silver Maple Forests (both present problems with equipment and fragile soils), Hemlock-Northern Hardwood, Red Spruce-Northern Hardwood, and Sandplain Forests with oak and pine as dominants and red maple as an associate. While these forest communities can contain large numbers of maple they should not be managed toward any single species or converted to a maple monoculture by harvesting only the dominant oak, pine, spruce, tamarack or ash.
- Sugarbushes shall be mapped following the UVA mapping standards. The stand will be identified using Stand Type based on SAF Cover Type or Vermont's Natural Communities as per UVA guidelines. The UVA map shall also include the identification of those stands that are tapped or have plans to be tapped within the plan time frame.
- All taps shall be removed annually at the end of each sugaring season before full maple leaf out. Used tubing, mainlines and drop-lines should be removed from the woods, when replaced or when the sugarbush is no longer tapped.

The **UVA Tapping Guidelines** below shall be referenced in the forest management plan on a stand level where trees are tapped or are planned to be tapped within the time frame of the current plan and a copy of these Guidelines should be included in the landowner's copy of their forest management plan. Taps per tree should not exceed the number of taps in the table below (these are within 2-inch diameter classes). Droplines of 30-36 inches are recommended.

	<b>Standard Spout (5/16")</b>	<b>Large Spout (7/16")</b>
<b>0 taps</b>	Less than 10" diameter (less than 29" circumference)	Less than 12" diameter (less than 35" circumference)
<b>1 tap</b>	10-14" diameter (29-47" circumference)	12-18" diameter (35-60" circumference)
<b>2 taps</b>	16-20" diameter (47-66" circumference)	20" & over, diameter (60"+ circumference)
<b>3 taps</b>	22" & over, diameter (66" & over circumference)	Prohibited
<b>4+ taps</b>	Prohibited	Prohibited