Woodland evaluation

While the presence of maples is a prerequisite to making maple syrup, many factors must be considered before deciding if sugaring is for you. From topography to tree count, tree traits to logistical basics. This diverse range of considerations will help determine the feasibility of sugaring. It also determines your scale of operation, what technologies to employ, the infrastructures needed and more.

The following worksheet has two primary emphases. The first emphasis is focused on the site's characteristics with an emphasis on trees, maple or not. This determines practical considerations that impact site access and navigability, as well as the efficiency and convenience of the property for sugaring.

The second emphasis is focused on the tree resources: maple trees big and small, other trees present, as well as native and non-native species that pose challenges to maple operations.

The worksheet's front side is focused on the site. The back side is focused on the trees. The numeric score for site characteristics will land in a high, medium or low category.

Based on this categorization, HIGH may be thought of as "accessing and traversing your woods for sugaring is convenient and you already have a building where you could boil sap." LOW could hint that "navigability is tough and existing infrastructure is lacking."

For the back side of the worksheet, tree resources scoring HIGH likely indicate healthy adult trees in a healthy wood. LOW may reflect serious challenges to combating invasive species, unhealthy maple trees and deficient maple recruitment in the understory and midstory.

On both sides of the worksheet, it is worth noting which variables are considered fixed (topography, current tapping density) versus elastic (utility availability, maple crown health, and canopy closure).

Compiling your assessment on each side of the worksheet will yield a combined evaluation of site and trees. A combination measure of HIGH site-HIGH tree (H-H, in the matrix below) is ideal. A combined measure of LOW site-HIGH tree (L-H) could still be worth the extra investment to operationalize a productive and profitable sugarbush. Even a LOW-LOW (L-L) combination may yield immediate opportunity and enjoyment to a hobby producer. Remember that both a site and a site's trees are dynamic — capable of being improved and vice-versa.

Most desirable ← → least desirable

Most desirable ↑ least desirable			
	H-H	H-M	H-L
	M-H	M-M	M-L
	L-H	L-M	L-L

First letter = site assessment
Second letter = tree assesssment

Individual evaluations are best to inform decision-making if distinct sub-compartments exist in your woods due to past management or differences in forest age or species composition. Additional factors to consider may include but are not limited to: site legacy (grazing, logging, herbicide use, sugared before), additional objectives for the woodlot by the landowner (firewood, recreation), cellular network coverage (monitoring systems) and neighboring landowners.

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How to Evaluate Your Woods: SITE ASSESSMENT

Evaluate each factor using the prescribed criteria and tally final score at bottom to **rank site LOW, MED, or HIGH**

Soil Characteristics: *Consult Web Soil Survey or assess in field*	3	✓	Well drained or moderately well drained
	2	✓	Excessively well drained or somewhat poorly drained
	1	✓	Poorly drained
Conduct soil test:	3	✓	pH 5.5-7.0
	1	✓	pH <5.5
Topography:	3	✓	Gradual downhill to collection site (3–8% slope B)
	2	✓	Steep enough to be difficult in places OR too flat (8–15% slope C; 0–3% slope A)
	1	✓	Access & navigability difficult due to steepness (>15% slopes D or E)
Access to Woods:	3	✓	Directly accessed from or very near non-muddy trail or improved trail or road
	2	✓	Short-moderate access from short dirt trail or road
	1	✓	Challenging access from lengthy dirt trail or road or through woods/field/right-of-way
Access to Sugarhouse:	3	✓	Building on easily accessible trail/road, downhill from woods, within 1000' of woods
	2	✓	Building on easily accessible trail/road but prone to mud/access issues seasonally, downhill or level from woods/collection site, within 2000' of woods
	1	✓	No existing and clear access to building, level or uphill from woods/colllection site, distance from woods is excessive (>2,000')
Access within Woods:	3	✓	Existing (or easy to establish) trails/roads for access throughout woods to maintain tubing, collect buckets, and/or conduct sugarbush forest management
	2	✓	Access to woods but no trails/roads throughout woods
	1	✓	No current trails/roads to woods and no existing access network within woods either
Utility Availability: *Especially important for vacuum; utilities location specific to collection site/ sugarhouse*	3	✓	Electric readily available at collection site/building; access to locations is convenient for use/maintenance of generator; good site for solar
	2	✓	Electric within 500' of collection site and/or already at building location; moderate access to locations for use/maintenance of generator; not good site for solar
	1	✓	Electric requires significant investment to install; no convenient access for generator use; not good site for solar

Sum site assessment points total:	**19–21 HIGH:** Excellent site, high feasibility
	16–18 MEDIUM: Feasible with moderate challenges
	<15 LOW: Difficult challenges

Any factor scoring 1, regardless of overall site score, is a significant challenge that deserves careful consideration in sugarbush planning

Additional Notes:
Consider site legacy and history, differences in factors if sugarbush has distinct subcompartments, is cell coverage available to enable maple "smart" technologies, and more.

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How to Evaluate Your Woods: TREE ASSESSMENT

Evaluate each factor using the prescribed criteria and tally final score at bottom to **rank trees LOW, MED, or HIGH**

Dominant Maple Species:
Use of reverse osmosis technology can help overcome low sugar content in red/silver maple

3	✓	Sugar and black maple
2	✓	50/50 Sugar and black maple / Red and silver maple
1	✓	Red and silver maple

Tapping Density
Minimum tree size for tapping is 12" DBH under conservative guidelines; 10" minimum is permissible

3	✓	>40 taps/acre
2	✓	20–39 taps/acre
1	✓	<20 taps/acre

Tree Age:
Age of co-dominant or dominant sugar maples ~12"DBH

3	✓	<60 years
2	✓	60–80 years
1	✓	>80 years

Growth Rate:
Recent annual growth ring of co-/dominant sugar maple

3	✓	>0.1" growth ring
2	✓	0.06–0.09" growth ring
1	✓	<0.06" growth ring

Tree/Crown Health:

3	✓	Healthy trees; canopy not completely closed; live crown ratio >30%; all roots covered in soil; few to no trunk/stem scars
2	✓	Trees health is mixed; canopy is closed; some thin crowns or upper crown dieback; live crown ratio <30%; some defoliation present; most roots covered in soil; some trunk/stem scars
1	✓	Poor tree health; canopy is closed; extensive crown dieback; live crown ratio <30%; roots exposed in many places due to thin soils/erosion; trunk/stem scars present

Recruitment Potential:

3	✓	Easy to identify trees throughout stand which will reach tappable size in next 5–15 years
2	✓	Isolated trees in stand that will reach tappable size in next 5–15 years
1	✓	Difficult to identify any trees that will reach tappable size in next 5–15 years

Stocking Rate:

3	✓	90–100% stocked stand
2	✓	70–90% stocked stand
1	✓	<70% stocked stand

Sap Sugar Content:
Average 3 representative sugar and black maples or 3 representative red and silver maples

3	✓	Sugar and black maple sap sugar content >2.3%; red and silver maple sap sugar content >1.8%
2	✓	Sugar and black maple sap sugar content 2.0–2.3%; red and silver maple sugar 1.5–1.8%
1	✓	Sugar and black maple sap sugar content <2.0%; red and silver maple sugar <1.5%

Sum tree assessment points total:

	22–24 HIGH: Excellent trees and production potential
	19–21 MEDIUM: Moderate challenges but trees good with production potential
	≤18 LOW: Trees unhealthy and/or limited production potential

Additional Notes:
Consider overall stand diversity, dense understory patches of native or non-native invasive species (list species observed) that impede access now or could become problematic in the future, grapevine infestations, evidence of deer overabundance and more.