

# SUGAR MAPLE HEALTH AND MANAGEMENT

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Most of us understand how to tap trees, gather sap and produce maple syrup. Yet, one of the most important and least thought about tasks of a sugar bush owner is maintaining the health of the sugar maples. To do that effectively, the majority of us can greatly benefit from the help of a professional forester.

In Indiana, there are private consultant foresters, foresters who work for industry and state foresters. Of these three, the private and state foresters are most available to help with your woodland needs. While maple operations are not the major focus for these foresters, they are trained in proven forest management techniques including forest Best Management Practices (BPMs).

Utilizing these practices in sugar bush management can pay big dividends. However, the person in charge of a sugar woods must be aware of the unique needs of the syrup maker and balance them with best management practices.

For example, the typical sugar maker finds that the more concentrated the maple trees are the better. All maple in one spot is preferred due to the cost and ease of setting up a sap operation. However, forest ecologists will tell you that diseases and insects can cause problems quicker in this type of culture (monoculture) verses

a mixed tree stand. Therefore it is a good practice to allow some other species of better quality to grow in your woods along with the sugar maple.

Thus, the sustainability of a sugar maple operation depends greatly upon wise forest management decisions. Let's examine two practices that greatly influence the future of a sugar bush.

## **When and How Should a Maple Stand Be Thinned?**

In a sugar bush that is being tapped, the removal of trees should include those with narrow crowns, trees with co-dominant stems, or genetically inferior trees that compete with the crowns of superior trees.

Tree species other than maple that are low grade cull trees with overtopping crowns should be cut down to make regeneration openings or to provide more light to sugar maples that are near by.

In some cases, when sufficient numbers of species other than maple are mature an improvement harvest may be in order. To remove a tree, directional felling, or felling a tree in a direction away from your sugar maple tree, is required to avoid damage. All cutting and removal of logs should be planned to prevent standing tree damage, soil compaction and erosion.

This is where Best Management Practices come in. If you are thinking about having a harvest, always hire a professional forester to mark the trees that need to be harvested and have the forester conduct a closed bid sale. The forester will provide both you and the logging company a timber sale contract that will require

the logging company to perform logging BMPs and require them to have a minimum of one million dollars of liability insurance and proof of workmen's compensation. This type of sale will provide you with the true market value of your trees.

In a woods being managed for future sap production, maple trees in the 2" to 10" diameter size should be selected to serve as potential future crop trees. Select the tallest maple trees with a straight, single dominant stem and mark them with a surveyor's tape. During the normal sap season, check the sugar content of these future trees with a sap refractometer. The sweetness should be checked at different times and days if possible during the sap season. Make note of the young trees with the sweetest sap.

Knowing when and to what extent to thin maple and other tree species is also important.

Small trees less than 8" can be cut down safely. Trees to be thinned that are larger than 8" can be cut down or double-girdled at least 1" in depth with a chain saw. Double-girdling a tree will ensure death and, if it is left standing, it will do little damage to neighboring trees while it sheds its limbs in the next few years. The end result of proper thinning will give future crop trees room to expand their crowns. Trees with expanded crowns will provide more sap and normally yield a higher percent of sugar.

Do not use any forest herbicide because you are producing a food product.

### **Where Should Roads and Trails be Made?**

During part of the maple season we

work in the woods when the woods is in its most fragile condition. When the woods thaws out from the winter's deep freeze the woods floor turns to soft wet soil, or what some call the mud season. Under these conditions, severe damage can be done.

If you operate any motorized or horse drawn equipment to gather sap buckets or bags, haul sap or move firewood, the haul roads need to be placed in areas that will minimize tree root damage and soil compaction.

Soil compaction and root damage from heavy equipment can severely stress your trees. Water and air movement in the soil will be severely reduced if roads are not planned and constructed properly. Haul roads should be planned on a contour with water bars that divert runoff into vegetated areas and not into channels. The use of culverts and #2 white-rock should be used in areas that are normally wet during the sap season. This rock will support heavy equipment and prevent rutting. After the sugar season, ruts and berms should be smoothed and stabilized when soil conditions are suitable for grading.

Observing your trees in the summer will provide valuable information about the health of your trees. Looking up at each tree's crown, studying the leaf density and light penetration will indicate the tree's condition of health. If a tree has dense leaves and letting a small percentage of light through, the tree is usually healthy. A tree with a thin leaf cover that is letting in a large percentage of light could be under stress. That stress may very well be the result of soil compaction and disturbance from human activity.

Familiarity with best management practices can help you make better management decisions in the future.

I have visited sugar bushes from Minnesota to New Hampshire. My observations suggest that most sugarbush owners do not know how to properly manage their sugar maple trees for a long time sustainable operation. In Indiana, the Division of Forestry of the Indiana Department of Natural Resources can provide you with the name of a professional forester in your area. This forester can help you develop a management plan and can help you identify the resources and information to carry out the improvements prescribed in the management plan.

The Division of Forestry may have cost sharing available for woodland improvement. Under the new farm

Bill, the Department of Forestry is administering the Forest Land Improvement Program (FLEP). This program will pay 75% of the cost to make a management plan and perform the work needed.

Besides making a little money from our maple sugar operations, the pure enjoyment we receive from this late winter and early spring tradition is worth preserving.

As we pass this tradition on to young people we need to include the importance of sustainable forest practices.

*Keith Ruble has been actively managing the sugar bush at Prairie Creek for nearly two decades.*

*Keith is happy to talk with IMSA members who have questions about sugar bush management. He can be reached at 812-462-3392 or 812-898-2315.*

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