

## Sugarbush Management and Chainsaw Safety

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Maple production requires sugarmakers possess a diverse set of skills in order to tend the forest resource and maintain a productive sap collection system. Maintaining a healthy, diverse sugarbush that maximizes its growth potential requires periodic vegetation management activity. Also known as thinning, vegetation management is the process of reducing competition for light, water and nutrients of crop trees. Felling trees is the key activity in vegetation management and may be done by logging professionals in support of formal forest management plan objectives or by the sugarmaker or landowner on an as needed basis and including response to extreme weather events.

All these situations present a high degree of risk to the chainsaw operator and those around them. Ensuring the safety of those working in the sugarbush revolve around a few areas: equipment maintenance, use of personal protective equipment (PPE) that is in good repair, proper chainsaw training and operation, hazard identification, and communication. Chainsaw PPE does not simply mean a pair of chaps or helmet. The following is a comprehensive list of PPE that must be inspected and determined to be in good working order before using a chainsaw:

- Head protection
- Hearing protection
- Eye/face protection
- Leg protection
- Foot protection

- Hand protection

Chainsaws are extremely efficient, powerful tools that are an essential part most maple operations. The same qualities that make chainsaws such effective tools simultaneously mean they expose operators to potentially lethal injuries. There are several important risks that anyone working with or around chainsaws must pay attention to. Make sure to follow the chainsaw manufacturers recommendations for service and if parts of the saw become damaged stop use until they can be repaired or replaced. Never work alone in the woods with a chainsaw. According to a 2011 OSHA chainsaw safety training guide, additional risks associated with chainsaw operation include:

- The blades can cut you.
- Trees you cut can hit you or others around you.
- Chainsaws are heavy and can cause a back injury.
- Noise from the chainsaws can cause hearing loss.
- Chainsaws can kick back and cause an injury.
- Vibration from the chainsaw can cause numbness and injuries to your muscles, nerves, or tendons (sometimes called “ergonomic” injuries).
- Debris flying from saw can cause an eye injury.

Kickback is a significant concern for those using chainsaws and can result in serious and life-threatening injuries. Kickback is most often caused when the

chainsaw tip hits a solid object and produces rapid, upward movement of the chainsaw. Injuries from kickback can be reduced if appropriate PPE is used.

Training is available related to chainsaw safety and the safe felling of trees. Modern techniques such as those described in the immersive, multi-level Game of Logging training ensure the tree being felled lands where it is intended with as little risk as possible. The length and cost of such training, while significant, reflects the quality, professionalism and comprehensiveness needed to cover all risks associated with this dangerous activity. These trainings can be viewed as a modest investment in safety and profitability if the loss of time associated with injuries are considered. Like most training, keeping skills sharp requires continuous learning. It is important that the information is reviewed regularly and when needed a refresher course taken.

Cutting trees that are lodged on adjacent trees is an extremely dangerous task. In fact, the Game of Logging (<http://www.gameoflogging.com/>) includes specific daylong training associated with responding to the forces and

pressures associated with wind-felled trees and limbs. A 1995 National Institute for Occupational Safety and Health and Occupational Safety and Health (NIOSH) include the recommendation to “remove it before work begins in the area by using mechanical means or other techniques that minimize worker exposures.” Given the risks involved, if mechanical means are not available the safest course of action is to leave

the tree where it stands, identify the hazard with flagging so others do not wander under the tree and wait for it to come down on its own.

Another extremely dangerous situation that sugarmakers encounter with some frequency are spring poles or bent limbs that contain significant stored energy. These must be approached with a great deal of caution and the forces in trees

under stress must be respected. Like with felling trees, keeping others from within two tree lengths of the spring pole will help ensure everyone associated with the operation remains safe. It is important that anyone attempting to cut spring poles have the specific skills needed to safely release these trees.



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Perhaps the most common use of chainsaws in a maple operation is related to clearing the tubing system of broken limbs and blowdowns. While these tasks are common in sugarbush management they are dangerous and require additional training to remain safe. These situations can range from simple to extremely complex and are often made more complex when the items being removed are covered in snow. If mainlines are involved, there is the added risk of high tensile wire and pipe hitting the chainsaw operator when released. Identifying the risks before starting the saw is critical first step. The Game of Logging works by developing effective plans in type of situations. Effective plans include steps for identifying the following:

- Overhead hazards
- Hazards on the ground
- Assess lean weight and pressure
- Cutting technique and plan
- Escape route

Sugarmakers understand the importance of keeping the sugarbush healthy, having sufficient firewood on hand for the next season, and keeping a tubing system in good repair. Meeting these goals often requires the use of chainsaws. Make sure that anyone using these powerful pieces of equipment have the necessary training to carry out these tasks safely and effectively.