## **Provisions in a Timber Sale Contract**

This publication describes some of the important parts of a timber sale contract. Addressing these provisions in your contract is critical to achieving a satisfactory timber sale that meets your goals and objectives.

### **Contract Performance Protection**

A reputable logging contractor has a business incentive to satisfy their customers, so they are motivated to fulfill your interests as a landowner in a logging contract. However, a logging contractor is also motivated by interests that might compete with your interests, such as maximum efficiency of the logging operation as well as a desire to keep a constant flow of work. Therefore, any timber harvest operation should include a contract with well-defined specifications of expected performance as well as solid mechanisms for enforcing those expectations.

If your harvesting experience happens to go awry, contract specifications will become meaningless if you don't have tools present in the contract to ensure your ability to enforce protection of your interests. The most common tool for enforcing contract specifications is the requirement of a performance bond prior to harvesting. Performance bonds are usually calculated as a percentage of the estimated value of the stumpage being sold, but a landowner should ensure that any performance bond collected is sufficient to protect their interests. Most important, a landowner should never allow a problematic harvest to proceed beyond the point where the performance bond in hand cannot cover any exposure to risk. A solid harvesting contract will also outline the details for default and termination of a contract and the ultimate fate of the performance bond under a defaulted contract as well as details for the collection of any fines imposed for failure of a contractor to comply with contract specifications. In order to maintain a legally binding contract under all circumstances, foreseen and unforeseen, it is also critical to outline within the original contract specifications how a contract can be amended if necessary.

### **Contract Dates and Deadlines**

Including contract deadlines such as required start-up and completion dates in a timber harvesting contract can be a powerful mechanism to control the timing of timber harvesting to help protect the interests of the landowner.

The most obvious reason for imposing contract deadlines is to ensure completion of harvesting operations within a reasonable amount of time, but there are other important reasons why a landowner may wish to restrict the timing of harvesting. For example, there is a wide range of forest processes that change with the seasons. Seasonal forest dynamics with ramifications to harvesting operations include soil moisture, susceptibility of remaining trees to logging damage, insects and diseases which can damage remaining trees, stain fungi which can degrade the value of harvested logs, and market demand for timber products. For example, wet soils are highly susceptible to compaction and rutting, so a landowner may want to restrict harvesting on moist and wet soils to the frozen season. Alternatively, demand for some timber products can be highest during the summer, so a landowner may want to require harvesting of timber on sandy soils to the summer season when they can capture the greatest economic return without significantly damaging soil resources.

Landowners should consider working closely with a professional forester to ensure that all seasonal issues are well protected by contract stipulations. Additionally, a balance may need to be struck between desires to have a harvest completed within a reasonable time while still protecting all seasonal concerns. A professional forester can assist a landowner in protecting these values while maintaining the feasibility of the proposed timber harvest to a logging contractor. Options to amend contract deadlines are particularly important to ensure that you can maintain a legal and binding contract if harvesting doesn't fit into the timeline that you initially anticipated.

# **Damage to Remaining Trees**

Most timber harvests remove some but not all of the trees. The trees remaining after a harvest will provide the value of your future stand. In particular, thinning and single-tree selection harvests leave a stand with nearly full forest cover and typically strive to improve overall quality of the timber resource as the stand develops. However, the activities of felling and removing trees from a stand have the potential to damage the trees that are left standing. Even horses and light-on-the-land logging equipment have the potential to produce very significant damage to standing trees, and this damage has very important ramifications to the health and vitality of your woodland as well as the economic value of future timber harvests.

Logging damage to remaining trees will often reduce future tree growth and can lead to the death of otherwise healthy standing trees. When large branches are broken off or when bark is removed, fresh wood is exposed to a wide variety of tree insects and diseases, and some of these pests can kill previously healthy trees. At the very least, the wounding of a tree will introduce decay fungi that will discolor and rot the interior wood of a tree, which will reduce the quality, economic value, and merchantable volume of wood when these trees are ultimately harvested. Trees are most susceptible to damage in spring and summer when they are actively growing.

While it is essentially impossible to harvest trees without some level of damage to some of the remaining trees, it is important to minimize damage, both to the number of trees damaged and the extent of damage to any individual tree. Some strategies for controlling damage involve a fee schedule that fines a contractor for each tree damaged. Typically these fee systems are graduated based on the economic potential of the damaged tree. Another common strategy is to set a threshold for an acceptable number of damaged trees and any damage in excess of that threshold would cause a contract to default. For both of these systems, it may be important to define exactly what damage is in the contract. Under any circumstances, working closely with the logging contractor and clear communication of your concern regarding damage will help minimize logging damage to your woodland. Trees along skid trails, particularly at any turning points, and trees adjacent to areas where logs are stacked before being trucked to a mill are particularly prone to damage, so working closely with your contractor to minimize damage in these areas in particular will provide the most important protection to your future interests.

## **Soil Compaction and Rutting**

Operating any logging equipment, including horses and so-called "light-on-the-land" logging equipment has the potential to damage woodland soil resources by causing compaction and rutting. Compacted

soil resists absorption of water, restricts movement of air around the roots, and produces a physical barrier to the development of roots. The combination of these factors can significantly decrease tree growth. Rutting restricts the movement of water through and across the soil profile making the rutted area too wet to grow trees and robbing the surrounding areas from moisture they would otherwise receive. More importantly, rutting cuts the surface roots of trees, which are the roots that provide trees with the vast majority of their nutrients and moisture. Wet soils are considerably more prone to compaction and rutting then dry soils, and medium texture (loamy) soils are most prone to permanent compaction.

The easiest way to minimize compaction and rutting is to operate logging equipment only when the ground is fully frozen. This is why winter is the busiest logging season, so it can be difficult to acquire the services of loggers during the winter, particularly the most reputable loggers. Also, because winter is the busiest logging season, some mills experience seasonal shortages of wood during summer, so logging that can safely occur during the summer can often yield a landowner significantly higher stumpage values. Furthermore, some compaction and rutting can occur even during winter, so provisions to minimize soil damage are a critical component of any logging contract.

A common mechanism for minimizing compaction is to restrict the abundance of skid trails across a site. Skid trails are the travel routes that logging equipment use to move around a stand. Some specifications on skid trail layout can be outlined in a logging contract, but, at the very least, a logging contract should specify a maximum skid trail width and a minimum distance between skid trails. This approach will concentrate compaction onto these defined trails, but will also restrict the prevalence of compaction across the site. Many woodland owners develop trails for recreation in advance of any logging operation, and these trails provide an excellent opportunity for skid trail location. Some people argue that not restricting traffic to skid trails and asking the contractor to try to produce an even impact across the entire ground surface of a site can manage compaction better than a defined system of skid trails. However, the majority of the negative impacts from compaction occur from the first pass of heavy equipment, so this strategy of dispersing the impact will typically have a larger cumulative negative impact on the productivity of the site. Fines per linear foot for length of skid trail that is too close to a neighboring skid trail is a common tool to enforce these contract limits.

Contract provisions for fining per linear foot of ruts in excess of a specified limit is a common tool used to minimize rutting. Some contracts contain provisions that define the physical characteristics of a rut in detail, particularly definitions of the minimum depth to classify as a rut. Then these contracts detail restrictions on the maximum cumulative length of rutting acceptable across a logging job. While rutting is highly undesirable, a small amount of rutting is sometimes unavoidable, so these types of limits are typically more practical than a complete ban.

Another common tool used by landowners to limit soil damage is to restrict the types of equipment that can operate in their woodlots. Pole skidders, iron mules, and bulldozers are commonly used in logging to pull trees from the woods, but these machines are not designed to be light on the land. These types of logging equipment are best used during the season of fully frozen ground or on sites with very light sandy soils. However, there are newer logging technologies being developed today that can remove

large amounts of wood while producing minimal soil compaction. Some high-flotation wheeled and tracked forwarders that lift and carry the wood off the ground and carry it out in a bunk can produce a footprint on the ground that is lighter than a walking person. Timber processors can also be used which limb the trees and spreads the slash in front of them, which significantly reduces the impact to the soil as this equipment travels across the slash.

# **Sorting of Products**

There is a great diversity of manufacturing facilities in the forest products industry in Wisconsin, so there are a variety of alternatives for selling the wood that is harvested off of your woodlot. The same piece of wood harvested from your woodlot may return drastically different receipts to you depending on where it is delivered. Receiving the maximum dollar value for your wood requires knowledge of forest product specifications as well as current market conditions.

Furthermore, logging contractors often work on contracts with specific mills and their profit margins may not be greatest at the same mill where you will receive the highest dollar for your wood. If your stumpage is sold lump-sum then sorting of specific wood products is not important to you, but if you sell your stumpage by mill scale receipts, then the sorting of your wood to maximize its value to you can have a significant impact on your financial returns. If your stumpage is being sold by scale, then detailed contract provisions can and should be developed to define how wood products should be sorted to maximize their value to you. Working closely with an experienced professional forester will help you access the best markets for the largest return.

On the other hand, requiring lots of detailed sorting of wood products does have some drawback. For example, the number of stacks of logs will increase the size of the area impacted by more intense traffic of heavy equipment. Additionally, there must be a sufficient volume in each sort category to provide a full truckload or trucking costs will rise. At the end of a sale, expect to have only partial loads of several sorts that must be combined to one mixed sort and delivered to whoever will take it.

### **Decking of Products**

Harvested logs and pulp sticks are carried out of the woods and are stacked at a staging area, or landing, until they are loaded onto a truck and delivered to a mill. With all of the heavy equipment and truck traffic, the area in and around the landing receives a concentration of heavy soil compaction. Most landings become sufficiently compacted that tree establishment and growth is seriously impacted if not prevented for a short time. Additionally, the movement of all this machinery as well as the physical stacking of logs and pulp sticks provides ample opportunity to damage the standing trees surrounding the landing. Therefore restrictions on the size, number, and location of landings can provide important protection for your remaining woodland resources. An important provision that can help limit landing size is to restrict the volume of wood allowed on a landing or the length of time wood can sit on the landing before it must be hauled to a mill.

On woodlands with a long-term management plan, landowners may be able to work with a professional forester and identify one or more central landing areas that can be used for many harvests as they occur over the years. Centralized landing areas typically require that loggers skid or forward logs farther, so

logging costs can rise, and stumpage receipts can fall, but long-term protection of the woodland can be significantly enhanced. Additionally, seeding of landings with desirable wildlife forage such as clover can provide a useful value for these areas if they are no longer productive for trees.

#### Slash

Slash is woody debris that remains on a site after it is logged, and it is typically comprised mostly of treetops, branches, and defective segments of harvested tree stems. Slash may visually appear unappealing, and many landowners are shocked by the messy visual appearance of a harvested woodlot, but slash does have some positive ecological values. Slash and other woody debris provide nutrients and organic matter to the soil as well as important wildlife habitat for smaller critters. Standing dead trees (snags) provide especially important habitat for cavity nesting bird species. With these considerations in mind, provisions in a logging contract might require the protection of all snags and an even distribution of slash across a site.

In the case of a seedtree, shelterwood, or clearcut, excessively deep slash may impede site preparation or planting efforts. In this case, slash should be lopped so that all wood is in direct contact with the soil. Additionally, if a harvest produces a significant amount of slash in a woodlot that is close to any homes or other important structures, then the fire hazard associated with that slash should be considered. Slash is a fire risk in oak and pine woodlands in particular, but slash in a maple woodlot is not. Slash that is a fire hazard should be lopped or treated so that all wood is in direct contact with the soil. A landowner may also want to require that all slash be fully removed from a "barrier strip" on the edge of the site closest to any homes. While requiring a logging contractor to do any of these treatments will reduce your stumpage bids, it is also most efficient to have this work performed by logging contractor when they are already on the site working with saws.