



Tree Marking

Experience has shown us that poorly managed forests will not produce quality forest products or good wildlife habitat. Often these shortcomings can be attributed to undesirable harvesting practices that have taken place in the past. Cutting trees is an important management tool that can be used to enhance the health and biodiversity of a forest. However, for harvesting to be effective it must be done in a manner that is consistent with good forestry practices. This can be best achieved through a good tree-marking plan.

What is tree marking?

Tree marking involves the careful selection of trees for harvest (under a partial cutting system), based on a forest management prescription. Specific trees are selected to be cut or left, based on their growth potential, ability to provide seed or wildlife benefits in the forest. This selection process takes into consideration numerous individual tree characteristics, not just tree size. Each tree to be cut is marked with paint to ensure that the prescription is followed.

What is a forest management prescription?

A prescription describes a series of actions to be taken to meet the management objectives (e.g., improve growth and quality of the forest, ensure regeneration, provide wildlife habitat, etc.) for a specific area based on an assessment and inventory of that area. Or you can think of it simply as a recipe that provides instructions to be used by the tree marker, in making “cut and leave” decisions of individual trees, based on good forestry practices. To successfully meet your harvesting objectives, tree markers must make use of their expertise in accurately interpreting the prescription and applying it to the specific conditions found in your forest.

What are the advantages of having my forest marked?

Having your forest marked by a qualified tree marker is an important step that links your forest management prescription with the actual harvesting operations. Here are some of the advantages:

- ✓ Tree marking identifies to the logger what is to be harvested and what is for sale;
- ✓ A qualified marker can mark your forest in a manner that will maintain a healthy forest and work towards ensuring that a new forest of desirable species grows after cutting.

- ✓ Not all trees are created equal and a small tree is not always a younger tree. Many of the small trees in your woodlot are small because of their age. However, the size of a tree may also be due to poor genetics, stunted growth or site characteristics. It takes years of experience to tell the difference, and an experienced tree marker can provide you with this expertise.
- ✓ Tree markers can identify the trees in the woodlot that should be retained to provide valuable wildlife habitat and to maintain biodiversity (e.g., cavity trees).
- ✓ Tree marking, based on sound forest management principles, will optimize your economic return and enhance future timber quality and quantity (to ensure a continuous and predictable supply of timber products and source of revenue); and
- ✓ Tree marking done in conjunction with good forestry practices has the capacity to ensure the long-term sustainability of your forest.

What are the limitations of tree marking?

Tree marking alone will not prevent “high-grading” (where the largest most valuable trees are cut leaving behind the less valuable or poorer quality trees in the forest). Virtually anyone with a can of spray paint can sell their services as a tree marker. It is only when tree marking is applied in conjunction with good forestry practices that the opportunity for high-grading can be minimized.

Why is tree marking not based solely on tree diameter?

A harvest based solely on cutting the biggest and the best trees (diameter cutting) can easily be considered a high-grade operation. There are five good reasons to follow a forest management prescription vs. a diameter limit cut.

Financial Returns – diameter limit cutting reduces the long-term financial benefits that can be derived from a managed woodlot. Under this system, most trees greater than 30 cm in diameter are harvested. Many of these trees would respond well to thinning and could produce a very high rate of return to the landowner if left to grow to maturity.

Future Growth – the thinning provided by a diameter limit cut is not uniform. It is simply a result of cutting where there are large trees. As a result, some areas of the forest which had large trees are cut heavily, while other areas of small trees are not cut at all.

In the uncut areas, the forest will continue to grow slowly because of overcrowding, and the financial benefits of thinning will not be achieved. Poor quality, small diameter trees with no potential to develop into sawlogs should be cut and removed from the forest to increase growth of the remaining timber-quality trees. In most areas of the province there are markets for fuelwood and pulpwood to permit sale of these smaller trees.

In areas that are cut too heavily, there will be insufficient large trees to capture the increased light, moisture and nutrients available from thinning. As a result, growth will occur largely on young seedlings. In addition, those trees which remain behind may not be of high sawlog potential. The lumber-producing capability of the forest will be reduced significantly.

Heavy cutting also results in a loss of potential value of the smaller but high-value trees, which are left behind. Trees less than 30 cm in diameter tend to have branches located low on the stem. In an uncut or managed forest, a sufficient number of trees are present to shade these young trees, causing the lower branches to fall off due to a lack of sunlight. This will result in an increase in the “clear length” of the tree over time (the length of the bole with no branches), with a resulting increase in high-quality, knot-free logs for lumber. After a heavier cut, these small trees are exposed to much more sunlight. As a result, they tend to keep their lower limbs and lose the potential to develop further clear length. In fact, many trees may develop new branches on the trunk after heavy cutting, which actually will reduce their clear length and future value.

Forest Regeneration – a forest management prescription can be prepared to ensure that a new forest of desirable species grows after cutting. For instance, sufficient red oak and white pine trees can be left for seed and cover to enhance the regeneration of high-value oak and pine seedlings. In a diameter limit cut, the forest generally regenerates to whatever young trees are present on the forest floor at the time of cutting. Such procedures rarely result in the regeneration of an oak or pine forest. On the contrary, the open conditions, resulting from heavy cutting, often favor the regeneration of low-value timber species like poplar.

Wildlife Values – landowners may wish to leave some trees in their forest to provide high-quality wildlife habitat (including nesting sites, mast and cover). These values must be addressed in the forest management prescription.

Tree-Cutting Bylaws or Tree Conservation Bylaws – in some municipalities, diameter limit cutting is a contravention of local tree-cutting bylaws and is not in accordance with good forestry practices.

Where should the markings be applied?

Trees should be marked at breast height (with a painted band around the bole) and at the base (butt) of each tree, extending from ground level up approximately 30-40 cm. The band at breast height makes the marked trees easy to see from all angles in the forest. The butt mark provides an indicator that can be used to ensure that only marked trees have been removed during harvest.

Yellow paint is used in most harvesting operations (on private land) to identify the trees to be cut. Blue paint is used to identify trees to be retained (e.g., for wildlife habitat) and red paint is used to identify property boundaries. Check with your logger to ensure that there is a clear understanding of the colour scheme being used to mark the trees in your forests.

What is a certified tree marker?

Since 1995, the Ontario Ministry of Natural Resources (MNR) has provided tree marking certification training. The training involves a one-week course covering silvicultural systems, silviculture, silvics, wildlife habitat, tree defects and tree vigour characteristics. Participants are field tested, and successful trainees are issued a certificate endorsing their skills as a certified tree marker (of conifer forests, hardwood forests or both). To maintain MNR's certification, a tree marker must attend and successfully complete a two-day refresher course every three years.

Why hire a certified tree marker?

It is important to realize that a tree marker's skills play a significant role in the decision-making process (when identifying which tree should be removed from your forest during harvest operations). Their decisions can directly influence the long-term economic and ecological integrity of your forest. For this reason, a good tree marker must be knowledgeable and skilled. They must be able to properly assess a tree's quality and vigour, its value in terms of grade and product and its potential as a tree for wildlife habitat or for maintaining biodiversity.

Hiring a certified tree marker ensures a proven level of competency in carrying out this important task. However, experience can also be important. For example, you may wish to hire a certified tree marker who has several years of experience in marking hardwood forests if your woodlot is predominantly hardwood.

Where to get help?

Looking for more information? You may want to read one of the following guides.

- **Promoting a Healthy Forest through Tree Marking *NEW!***

- **Tree-Marking Guide for the Tolerant Hardwoods Working Group in Ontario *NEW!***

Additional assistance can be obtained from local forest consultants and it may also be helpful to join your local woodlot association and benefit from other landowners' knowledge and experience.

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