

Appendix 2: Silvicultural Prescriptions and Tree Marking Practices

Silvicultural Prescriptions

In Niagara Region, Good Forestry Practices permit applications must be supported by a forest management plan or silvicultural prescription. Plans and prescriptions must be prepared and reviewed by a qualified forest professional with expert knowledge in silvicultural practices. Silviculture practices are treatments applied at the stand (woodlot) scale to achieve specific forest management objectives. Treatments are broadly categorized as either harvest, renewal, or tending. Ideally these practices are applied in a coordinated fashion with a long-term view of what is possible, practical, and desirable at both a stand and landscape scale. The coordination and long-term view are achieved through application of a silvicultural system.

A silvicultural system is a planned program of silviculture treatments that extends throughout the life of a stand for the purposes of controlling stand establishment, composition, and growth. While this view implies a certain intensity of effort and manipulation, on suitable sites the simplest application may include only a single harvest with natural regeneration (assuming a seed source, seedlings are present in sufficient quantity to restore the forest to a desired composition and structure). In Niagara Region, woodlands are managed using Selection or Shelterwood silvicultural systems.

Tree Marking

Selection and Shelterwood systems require the practice of tree marking. Tree marking involves the selection of individual trees to be harvested, while leaving trees to grow for future harvests and to provide wildlife habitat. The actual process of tree marking is recognized as being both an art and a science. Historically, many of our forests were subjected to various types of uncontrolled harvest. This included “high-grading,” a term that refers to woodlots that have had only the largest and best quality timber harvested. These unregulated disturbances, in combination with other factors, such as disease and insects, can lead to a forest with irregular stand structure and unpredictable growth. In

the absence of sound forest management these forests often display a lack of regeneration of favorable species and poor spacing of smaller diameter stems.

When properly applied, tree marking can reverse many of the historical, negative impacts that unregulated cutting has created in our forests. This often requires two or more cutting cycles and adhering to the guidelines of Selection and Shelterwood system management.

Trees to be cut through tree marking are physically identified through the application of paint on the tree. Depending on the management system being used, trees are marked in a colour that indicates the tree is to be cut or in some cases a colour that indicates the tree should not be cut. The objective of marking is to optimize growth for all trees being retained rather than attempting to maximize growth on a few individual trees. Marking also allows the forest manager to make changes, if necessary, to selected trees before the harvest takes place.

Tree marking alone will not prevent 'high-grading'. 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. Regular monitoring (site visits) by the Regional Forester during harvest operations ensures tree marking is being followed.

To ensure the practice of tree marking is carried out professionally, the Woodland By-law requires that those marking woodlots be 'Certified Tree Markers'. Since 1995, the MNRF 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 MNRF's certification, a tree marker must attend and successfully complete a two-day refresher course every three years.

Certified tree markers must be knowledgeable in silviculture, tree and wildlife biology, and forest economics to choose the right trees to mark for cutting. Knowledge required for proficiency as a tree marker:

- ability to identify species
- understanding of silvical characteristics of species
- familiarity with site and land features
- recognition of tree defect characteristics and indicators

- appreciation of tree quality and vigour, including use of an acceptable tree classification system
- comprehension of stocking levels and structural types
- appreciation of commercial values of species, products, and grades, and appreciation of wildlife habitat, biodiversity, and other ecosystem values