

# Retaining Trees Safely in Harvesting Operations

## Background

There are a variety of reasons why the retention of trees in a harvest setting is desirable, such as the provision of wildlife habitat, the maintenance of stand level biodiversity or the retention of trees with cultural value. The desire to retain trees does not remove the **Employer** from their responsibility to comply with Occupational Health and Safety requirements to ensure the health and safety of workers at the worksite<sup>1</sup>.

This article is intended to examine the legislative requirement and introduce various planning considerations for the safe retention of individual trees in forest harvesting operations. Despite wide differences in the complexity of harvest operations, due to terrain, harvest system, topography and planned levels of tree retention, the application of safety legislation remains the same, specifically, that all dangerous trees must be removed concurrently with harvesting operations (or sooner).

The Wildlife/Danger Tree Assessment process discussed in this article is part of a broader process that applies to the full range of forestry activities (levels of disturbance); however, this document applies only to harvesting.

## Applicable Legislation

The WorkSafeBC requirements for dealing with dangerous trees are described in Section 26.11 of the *Occupation Health and Safety Regulation*.

Specifically; if it is known or reasonably foreseeable that work will expose a worker to a dangerous tree,

(a) the tree must be felled, or

(b) a risk assessment must be undertaken by a person who has completed a training program suitable to the Board<sup>2</sup>.

## Key Definitions

**Dangerous tree:** Is a *live or dead tree* that is a hazard to a worker due to any combination of the following

- its location or lean,
- its physical damage,
- overhead conditions,
- deterioration of its limbs, stem or root system.

*Note: The term snag is no longer a suitable definition of a dangerous tree.*

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<sup>1</sup> See Section 21 of the [Workers Compensation Act](#)

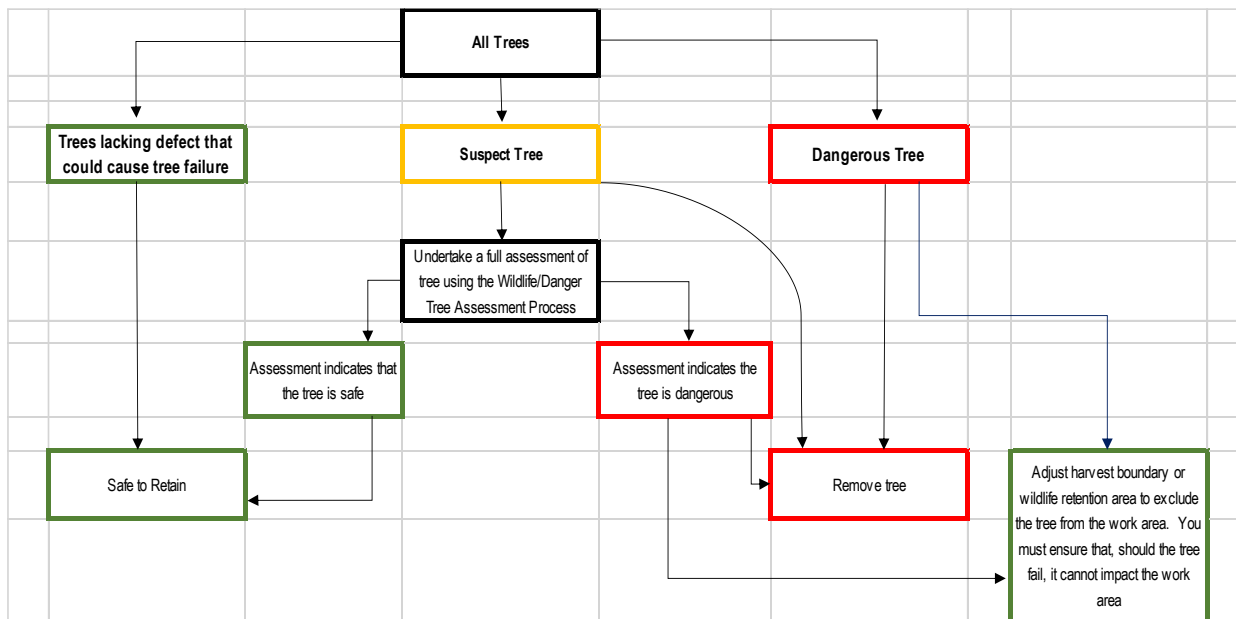
<sup>2</sup> The Forest Harvesting and Silviculture Module of the Wildlife/Danger Tree Assessors Course (WDAC) is recognized as the provincial Standard of Care for identifying, assessing and controlling exposure to dangerous trees.

**Suspect tree;** Is any tree, live or dead, with a visible defect which could cause failure of the tree, either whole or in part. Suspect trees require a visual inspection and site assessment by a certified Danger Tree Assessor in order to determine whether they are dangerous for the type of work being undertaken (in this case harvesting).

Note: All suspect trees must be regarded as dangerous until proven otherwise

**Safe Tree;** Is a tree, live or dead, that lacks any defect that could cause tree failure, or a tree that has been evaluated by a certified Danger Tree Assessor and have been deemed safe.

## Safe Tree Retention Process



The key take-aways from the following flow chart are;

- all safe trees can be retained if desired,
- all dangerous trees must be removed or safely excluded from the harvest area by altering block boundaries or wildlife tree retention areas,
- all suspect trees must be regarded as dangerous until an assessment by a certified Wildlife/Danger Tree Assessor indicates that they are safe to retain.

## Work Site Perimeters

The Treatment Zone is the active harvest area plus the first 5 metres adjacent to the harvest boundaries. In the Treatment Zone, Wildlife/Danger tree assessments are required on all suspect trees, if the option to remove them directly is not undertaken. In cable harvesting operations the Treatment Zone also must include all guy-line, tail hold anchors, backspar trees and tiebacks.

The Perimeter Zone consists of the area within 1.5 tree lengths of the Treatment Zone. This area would include the block perimeter as well as the perimeter of any Wildlife Tree Retention Areas. All highly unstable trees within the Perimeter Zone that could reach the work area must be removed.

## Other Considerations

### High density sites

In areas where there is a high density of dead or damaged trees, such as prior burns or areas with significant levels of insect and disease, it may not be realistic to assess each tree for hazards. In this case, WorkSafeBC may allow work in the area without felling or assessing all the dangerous trees, provided that a detailed sampling of dangerous trees is undertaken by a certified Wildlife/Danger Tree Assessor and comprehensive risk assessment is prepared and hazard mitigation strategies developed.

This option is a complex process and requires significant up-front planning and communication with WorkSafe-BC Officers.

### Use of Guarded Machinery

The removal of all dangerous trees, concurrent with harvesting, is still a requirement when machines are guarded with Falling Object Protection Systems (FOPS). A specific engineering certification indicating that the machine's guarding is sufficient to protect the operator from the tree, and a variance to WorkSafe Reg. 26.11(1) are required to permit machinery to work around dangerous trees.

This variance process is a complicated and costly process and requires significant lead time to complete.

### Re-assessment Restriction

The Wildlife/Danger Tree Assessment process should be conducted as close to the harvest time as possible to ensure that stand conditions have not changed since the time of the initial assessment.

A re-assessment of trees deemed safe in the original assessment must be undertaken if there has been any of the following;

- intervening winter,
- major disturbance event, or
- change in activity (level of disturbance)

## Summary

This is the first in a series of articles related to harvest safety in partial cutting operations. This article was intended to provide an overview of the considerations and requirements for identifying safe trees for retention in a harvesting setting. Future articles will deal with issues ranging from harvest planning and engineering to ground-level operational considerations.

For a more detailed information on individual tree retention, please refer to the [Wildlife/Danger Tree Assessors Harvesting and Silviculture Course](#) manual.