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Assessing Tree Risk in the Urban Forest and Beyond

In British Columbia there are two approaches to assessing tree risk; the Wildlife/Danger Tree Assessment course (WDTAC) and the Tree Risk Assessment Qualification (TRAQ) promulgated by the International Society of Arboriculture (ISA). The WDTAC was initiated in the early 1990's as a means of retaining wildlife habitat trees within industrial logging settings. That approach was then extended to create the Parks and Recreation Sites module in 1997.

The Certified Tree Risk Assessor course (TRACE), introduced in 2005 and sponsored by WorkSafe BC, the Pacific Northwest Chapter of the International Society of Arboriculture, and BC Hydro, became a de facto tree risk assessment standard of care in North America and Hong Kong, prior to the introduction of the TRAQ program. TRACE was incorporated into the Tree Risk Assessment Qualification (TRAQ) which is an international course created by the International Society of Arboriculture (ISA). It was introduced worldwide in 2013.

The TRAQ approach is now used around the world as standard of care for assessing tree risk in any areas containing trees; urban and forested areas, as well as parks and recreation sites in urban, rural, and wilderness areas.

The WDTAC approach places a lot of emphasis on retention of wildlife tree habitat and far less on the structure and biology of the tree. The TRAQ approach focuses exclusively on the tree, the targets, and the tree risk assessment process.

The aim of tree risk assessment is defined in the ISA publication Best Management Practices – Tree Risk Assessment as the protec-

tion of people, and property, and avoiding disruption of activities. The TRAQ was specifically designed to meet International Standards Organization (ISO) Standard 31010 Risk Assessment Techniques, ISO Guide 73 Risk Management Vocabulary, American National Standards Institute (ANSI) A300 Part 9: 2010 Tree Risk Assessment – Tree Structure, as well as several other international standards. As a result, the definitions of risk, hazard, assessment, and management used in the TRAQ are contemporary and conform to accepted international standards.

An important development in the best management practices, and an integral part of the TRAQ, was the codification of levels of assessment—the scope of work expected to be undertaken. Three levels are defined.

- Level 1 – Limited Visual Assessment is a walk by, drive by, or fly by assessment. It serves to identify obvious problems, some of which can be mitigated right away with no further work, while others may require more detailed investigation.
- Level 2 – Basic Assessment is a ground based approach examining the entire tree from all sides.
- Level 3 – Advanced Assessment utilises sophisticated equipment such as the Resistograph and Arbotom (sonic tomography) to investigate internal decay patterns and determine strength loss, and then decide how stable the tree may be.

Many trees are found to be quite stable and can be retained; contrast to the 'if in doubt cut it out' approach that existed prior to these techniques being developed. Most tree risk assessments



are undertaken at Level 2. By matching client needs to the level of assessment, an efficient and defensible assessment process can be implemented.

In the TRAQ process the key risk assessment terms are defined as follows:

- **RISK** = the combination of the likelihood of an event and severity of the potential consequences.
- **TREE RISK ASSESSMENT** = the systematic process to identify, analyze, and evaluate tree risk.

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- **TREE RISK EVALUATION** = the process of comparing assessed risk against given risk criteria to determine the significance of the risk.
- **LIKELIHOOD** = the chance of an event occurring. In the context of tree failures, likelihood refers to (1) the chance of a tree or tree part failure within a defined time frame, (2) the chance of that tree or tree part impacting a specific target, and (3) the combined likelihood

of a tree failing and the likelihood of impacting a specific target.

- **CONSEQUENCES** = the effects or outcomes of an event. In tree risk assessment, consequences include personal injury, property damage, or disruption of activities due to the event.
- **HAZARD** = the likely source of harm. In relation to trees, a hazard is the tree part(s) that might fail, which is identified as the likely source of harm.

Risk is evaluated by categorizing the likelihood of occurrence, and the severity of consequences. A tree cannot be deemed hazardous until it has been assessed. If it is found to likely fail and cause an unacceptable degree of injury, damage, or disruption of activities, then the risk would be rated as high or extreme and the tree or tree part likely to fail would be rated as a hazard. Overall, the TRAQ process is a sophisticated technique, and provides risk managers with a defensible approach for risk issues when the assessment process has been correctly implemented.

Professional foresters and forest technicians with degrees or equivalent backgrounds in forestry are eligible to take the TRAQ from ISA. Courses are regularly held in Surrey and Victoria, and elsewhere if demand is great enough. More information can be found on the International Society of Arboriculture's website¹. 🌳

Reference

1. www.isa-arbor.com/certification/resources/TRAQAppGuide.pdf