Pacific Northwest Chapter ISA
International Society of Arboriculture

Tree Risk Assessment in Urban Areas and the Urban/Rural Interface

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Welcome to 2009 and year four of delivering the Tree Risk Assessment Course & Exam, otherwise known as TRACE. With over 40 courses held since our July 2005 program launch, we now have nearly 500 PNW-ISA Certified Tree Risk Assessors.

This TRACE Bulletin is designed to provide updates on changes to some of the information in the course manual, prompt those whose four-year certification is about to expire, and share some added insight as to where the Pacific Northwest ISA is headed with respect to this course.

Recertification

Having launched the TRACE program in July 2005, we saw 54 individuals in that first year successfully complete the exam. As such, those individuals are rapidly approaching the four-year recertification mark. Your tree risk assessor qualification is good through the end of the month you took the exam. Watch for expiration/recertification notices to be sent to you directly. You have two (2) options to retain the qualification. ***Option 1:*** Attend the full course and sit for the exam. ***Option 2:*** Challenge the exam.

Both options will carry a fee and involve a registration process, new manual, and rewriting the exam. We will work diligently to ensure a suitable number of courses/exams to meet recertification demands. Please note, while ISA Continuing Education Units (CEUs) are approved to attend the course, recertification is not available via CEUs.

Changes of Particular Note

Risk Rating Scheme—During the past four years, we have had a lot of helpful feedback and review of the course. One of the most common comments was about the two bonus points in the rating scheme. With assistance from expert assessors around North America, we have reviewed and modified the rating scheme to add improvements and remove concerns.

New Manual—In light of changes to the rating scheme, new information emerging from the industry, and the need for a more professional publication, we have also updated and reprinted a new course manual. The new manual does not include specific details about working around power lines. As a certified tree risk assessor, however, you are expected to know the applicable regulations in your region. If you need more information, contact your local safety office or utility company.

We do not anticipate further changes to the manual for some time. However, as new research and technology comes on line, we will continue to update course materials and use this email bulletin to announce any major changes.

Attendees for courses held from now on will receive this new edition. For those who have successfully completed the course and exam, the new manual is being offered for sale at US $40 or CDN $48 if paying by check. Credit card payments will be processed in US funds.

Other Developments

The International Society of Arboriculture (ISA) is considering the introduction of a risk assessment qualification. This new and exciting initiative came about after the PNW-ISA approached ISA about the course and its origins. Since then, ISA has assembled a panel of experts from around the world to see how an international qualification might be developed. The panel is chaired by Terry Flanagan (Lake Oswego, OR); he is joined by Julian Dunster (Bowen Island, BC) as part of the team.

Given our early efforts to pioneer a formal tree risk assessment program, we expect to contribute greatly to this effort. As the ISA initiative moves forward, we hope to see all PNW-ISA Certified Tree Risk Assessors in good standing grandfathered into the new international program. In the meantime, we will continue to deliver the course around the Chapter region this year as well as expand access to Chapters around North America. ***Of note as well,*** ISA is developing a Best Management Practices guide, and another team is assembling an ANSI standard for Risk Assessment. Julian Dunster and Terry Flanagan are actively involved with one or both of those projects as well.

The New Rating Scheme: Key Points to Know

The overall rating scheme still has twelve (12) points. These points are distributed as follows and are described in the following tables for each component:

Probability of Failure—five (5)points
Target Rating—four (4) points
Size of Defective Part—three (3) points

Probability of Failure—five (5) points

The rating for Probability of Failure has been changed to five points.

Probability of Failure (1-5 points)		
Low 1 point	Defect is not likely to lead to imminent failure, and no further action is required. In many cases, defects might not be recorded.	Minor branch or crown dieback, small wounds, minor defects.
Moderate 2 points	One or more defects areas well-established but typically do not lead to failure for several years. Corrective action might be useful to prevent future problems but only if time and money are available. Not the highest priority for action, these are retain and monitor situations used to inform budget and work schedules for subsequent years.	Several defects present. • Shell wall exceeds minimum required • Cracks initiated but no extensive decay • Cavity opening or other stem damage less than 30% of circumference • Crown damage or breakage less than 50% of canopy (30% in pines) • Dead crown limbs with fine twigs attached and bark intact • Weak branch union such as major branch or codominant stem with included bark • Stem girdling roots with less than 40% of circumference compressed • Root damage or root decay affects less than 33% of roots within the critical zone • Standing dead tree that is recently dead (still has fine twigs) and no other significant defects*
Moderately High 3 points	One or more defects areas well-established, but not yet deemed to be a high priority issue. Additional testing may be required or, the assessor may feel the problems are not serious enough to warrant immediate action, but do warrant placing the tree on a list of trees to be inspected more regularly. These are Retain and Monitor trees.	Areas of decay that may be expanding; trees that have developed a recent but not yet critical lean; cracks noted but may be stable; edge trees that may adapt and become more stable.
High 4 points	The defect is serious and imminent failure is likely and corrective action is required immediately. These cases require treatment within the next few days or weeks.	One or more major defects present. • Insufficient shell wall thickness • Large cracks, possibly associated with other defects • Cavity opening greater than 30% of circumference • Crown damage or breakage more than 50% of canopy (> 30% in pines) • Dead crown limbs with no fine twigs and bark peeling away. May be some saprophytic fungal evidence. • Weak branch union has crack(s) or decay • Stem girdling root affects 40% or more of trunk circumference • More than 33% of roots are damaged within the critical zone • Tree is leaning. Recent root breakage, or soil mounding, or cracks, or extensive decay evident • Standing dead tree, has very few fine twigs, and no other significant defects*
Extreme 5 points	The tree or component part is already failing, An emergency situation where treatment is required today.	Multiple high or extreme risk defects present. • Shell wall is already cracked and failing • Major cracks already open, such as hazard beams or split trunks • More than 30% of circumference defective and cracks or decay obvious • Dead crown limbs, no fine twigs, no bark, decay present. • Weak branch union has crack(s) and decay • Leaning tree with recent root failure, soil mounding, and cracks or extensive decay • Dead branches hung up or partly failed • Visual obstruction of traffic signs / lights at intersections • Any partly failed component or whole tree • Standing dead trees that have been dead for more than one season with multiple defects such as cracks, decay, damaged roots, shedding bark*

* Standing dead trees pose their own set of risk assessment difficulties since it is often impossible to determine when the tree died and what caused its death. Tree mortality caused by insects such as defoliaters, drought, or low intensity fires will usually be structurally sound, and may remain safely standing for several years. In some cases, where the target rating is 'occasional' and the wildlife value of the dead tree is high, the assessor should consider an additional assessment step to determine the feasibility of retaining the tree as a wildlife tree. Appendix Two provides a simple graphic to assist with creation of wildlife habitat. There is a standard set of decay classes used by the US Forest Service, and other North American agencies, which when matched with wildlife value provide a wildlife tree habitat rating.

Target Rating—four (4) points

The following Target Area rating has changed to reflect the need for more options.

The Target Area (1-4 points)	
Low 1 point	Sites rated at one point are very rarely used for any long period of time, and people passing through the area (regardless of how they travel) do not spend a lot of time within the striking range of the tree. There are no valuable buildings or other facilities within striking range. Examples are seldom used back country roads or trails; seldom used overflow or long-term parking, industrial areas where workers drive machines (trucks, forklifts, tractors) with substantial cab protection; natural or wilderness areas; transition areas with limited access; remote areas of yards, parks, or private lands open for public use within set hours. All of these sites have relatively low occupancy within any one day.
Moderate 2 points	Valuable buildings are at the edge of the striking distance, so they would not be seriously damaged even if the tree did fall down. The site has people within striking range occasionally, meaning less than 50% of the time span in any one day, week, or month, and do not stay within striking range very long. Examples include areas that are used seasonally; more remote areas of camping areas or parks; minor rural roads; picnic areas; low to moderate use trails; most park and school playgrounds.** Moderate to low use parks, parking lots with daily use; secondary roads and intersections, dispersed camping sites, moderate to high use trails, works and / or storage yards.
Moderately High 3 points	The site has valuable buildings within striking range. People are within striking range more than 50% of the time span in any one day, week, or month, and their exposure time can be more than just passing by. Examples include secondary roads, trails, and access points; less commonly used parking areas and trails within parks; trails alongside fairways, bus stops.
High 4 points	The highest rated targets have a) a building within striking range frequently accessed by people, often for longer periods of time, or high volumes of people coming and going within striking range. Valuable buildings or other structures within striking range that would suffer major structural damage in the event people or b) people within striking distance of the tree, or both, seven days a week, all year long, and at all times of the day. Examples include main roads, the busiest streets or highways; high volume intersections power lines;* paths through busy open space areas and parks; short-term parking constantly in use; institutional buildings such as police stations, hospitals, fire stations; shopping areas; highly used walking trails; pick up and drop off points for commuters; golf tees and greens; emergency access routes and / or marshalling areas; handicap access areas; high use camping areas, visitor centres or shelters; residential buildings; industrial areas where workers take outside breaks; development sites where work activity within striking range lasts more than a few hours at a time.

*There are very specific safe work practices required when working close to Power Lines. These vary depending on location, but all employ similar principles.

** It is recognized that there is a tendency to rate playgrounds higher simply because children are involved. Most playgrounds are occupied for short periods of time in daylight hours. Overall, their use is infrequent when compared to other locations such as busy streets.

Size of Defective Part—three (3) points

The rating for the Size of Defective Part (3 points) has not changed.

Size of Defective Part (1-3 points)	
1 point	Branches or stems up to 10 centimeters (4 inches) in diameter.
2 points	Branches or stems between 10 to 50 centimeters (4 to 20 inches) in diameter.
3 points	Branches or stems greater than 50 centimeters (20 inches) in diameter.

* In some cases, there may be large areas of sloughing bark, dwarf mistletoe brooms, branch stubs, or large bird nests in cavities that pose a risk. The assessor must use his or her judgement to assign a number to these components. In general, the lowest rating (1 point) is reserved for component parts that would not create much impact on a person or property if it were to fail. The highest rating is used for parts that have the potential to kill people or seriously damage property.

Overall Risk Rating

One of the most questioned aspects of the past rating scheme was the interpretation of the words used in the overall risk rating. To clarify this, a new table has been added. This intent of this new table is to ensure you and your reader(s) understand the intended meaning of the overall risk rating.

For that reason, we recommend you insert this table in all your risk assessment reports to eliminate confusion or misunderstandings about the terms. This table is available in digital form from your course instructor or the PNW-ISA Chapter office.

Overall Risk Rating and Active Thresholds

Risk Rating	Risk Category	Interpretation and Implications
3	Low 1	Insignificant - no concern at all.
4	Low 2	Insignificant - very minor issues.
5	Low 3	Insignificant - minor issues not of concern for many years yet.
6	Moderate 1	Some issues but nothing that is likely to cause any problems for another 10 years or more.
7	Moderate 2	Well defined issues - retain and monitor. Not expected to be a problem for at least another 5 - 10 years.
8	Moderate 3	Well defined issues - retain and monitor. Not expected to be a problem for at least another 1 - 5 years.
9	High 1	The assessed issues have now become very clear. The tree can still reasonably be retained as it is not likely to fall apart right away, but it must now be monitored annually. At this stage it may be reasonable for the risk manager/owner to hold public education sessions to inform people of the issues and prepare them for the reality that part or the entire tree has to be removed.
10	High 2	The assessed issues have now become very clear. The probability of failure is now getting serious, or the target rating and/or site context have changed such that mitigation measures should now be on a schedule with a clearly defined timeline for action. There may still be time to inform the public of the work being planned, but there is not enough time to protracted discussion about whether or not there are alternative options available.
11	High 3	The tree, or a part of it has reached a stage where it could fail at any time. **Action to mitigate the risk is required within weeks rather than months.** By this stage there is not time to hold public meetings to discuss the issue. Risk reduction is a clearly defined issue and although the owner may wish to inform the public of the planned work, he/she should get on with it to avoid clearly foreseeable liabilities.
12	Extreme	This tree, or a part of it, is in the process of failing. **Immediate action is required.** All other, less significant tree work should be suspended, and roads or work areas should be closed off, until the risk issues have been mitigated. This might be as simple as removing the critical part, drastically reducing overall tree height, or taking the tree down and cordoning off the area until final clean up, or complete removal can be accomplished. The immediate action required is to ensure that the clearly identified risk of harm is eliminated. For areas hit by severe storms, where many extreme risk trees can occur, drastic pruning and/or partial tree removals, followed bv barriers to contain traffic, would be an acceptable first stage of risk reduction. There is no time to inform people or worry about public concerns. Clearly defined safety issues preclude further discussion.

The Table shown above outlines the interpretation and implications of the risk ratings and associated risk categories. This table is provided to inform the reader about these risk categories so that they can better understand any risk abatement recommendations made in the risk assessment report.

Help Us Help You!

Notices only work if we know where to send them. Please make sure we have your current contact information including email and mailing address on file.

If you have any questions, please contact the PNW-ISA chapter office or one of the instructors listed below. Thank you.

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