

Tree Risk-Benefit Validator



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1

Establishing the context

**Trees give us many
benefits that we need**

1 The more obvious benefits that trees give us are visual beauty in the landscape, wood, and the various crops they produce. Wildlife habitat, pollution filtering, and reducing weather and climate change effects are additional values. Trees also have important social value as part of our culture, history, or because they commemorate an important event. As if all these benefits aren't enough. There's an ever-expanding body of scientific evidence that shows trees are essential for our physical health, mental wellbeing, and quality of life.

**The overall risk to us
from trees and branches falling
is extremely low**

2 Compared to other everyday risks we readily accept, the overall risk to us from branches or trees falling is extremely low. Our annual risk of being killed or seriously injured is less than one in a million. That's so low, we're at greater risk driving on about a 400km/250mi round trip to visit friends for a weekend than from branches or trees falling over an entire year. Given the number of trees we live with, and how many millions of us pass them daily, being killed or injured by a tree is a rare event. A rare event that usually happens during severe weather.

**We can't be an insurer of nature
or eliminate the risk from trees**

3 Of course, we can't be an insurer of nature. Trees are living structures that sometimes shed branches or fall during severe weather. Since we need the many benefits from trees, we have to accept we can't remove all of the risk. Leaves, bark, cones, nuts, fruits, and small diameter deadwood regularly fall from trees. This natural debris is an Acceptable or Tolerable risk.

1.1 Duty of care

**Reasonable
Proportionate
Reasonably practicable**

4 We have a duty of care to manage the risk from our trees. The duty also says we should be reasonable, proportionate, and reasonably practicable when managing the risk. That means there's a balance we need to strike between the many benefits trees provide, the risk, and the costs of managing the risk. By taking a balanced approach, we don't waste resources by reducing risk - and losing benefits - when the risk is already Acceptable or Tolerable.

**We all have a
responsibility to make
reasonable decisions**

5 We're all expected to act reasonably and responsibly. We can manage our exposure to the higher risk from tree failure that happens during severe weather by not going outside. If we go out during severe weather, we're choosing to accept some of the risk.

1.2 Risk tolerance

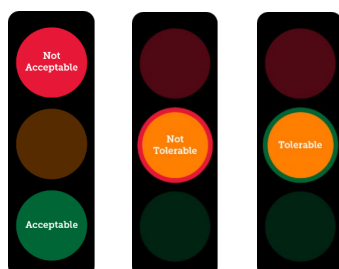
**What's an Acceptable or
Tolerable level of risk
from our trees?**

6 The Tolerability of Risk Framework (ToR) is an internationally recognised approach to making risk management decisions. It's used by duty holders where they manage a risk that's imposed on the public. ToR defines Broadly Acceptable and Unacceptable levels of risk. Between these levels is a region where the risk is Tolerable if it's 'as low as reasonably practicable' (ALARP). Put simply, ALARP means the risk is Tolerable if the costs of the risk reduction are much greater than the value of the risk reduction.

1.3 Risk ratings

**Risk ratings are as easy to
understand as traffic lights**

7 VALID has applied 'ISO 31000 - Risk Management' and the 'Tolerability of Risk Framework' (ToR) to tree risk-benefit management and assessment, which we've adopted. In ISO risk terms, our 'objectives' are to grow, maintain, and conserve trees because of the many benefits they give us we need. And, to manage the risk from tree failure to an Acceptable or Tolerable level. We're going to manage the risk from our trees with **Passive Assessment** in all zones of use. And **Active Assessment** in zones of high confluence (high use + large trees). We have four easy to understand traffic light coloured risk ratings to show how we'll manage the risk.



Red **Not Acceptable** risks will be reduced to an Acceptable level

Amber **Not Tolerable** risks will be reduced to an Acceptable level, but with a lower priority than red Not Acceptable risks

Amber **Tolerable** risks will not be reduced, but may require an increased frequency of assessment than green Acceptable risks

Green **Acceptable** risks will not be reduced

2 When might a tree be dangerous?

Trees with the highest risk are the easiest to spot

Be watchful after storms

8 When a tree has a risk that might not be Acceptable or Tolerable, it'll usually have an obvious tree risk feature you can't help but notice. Passive Assessment is simply picking up on these features as you go about your day-to-day routine. If you see anything like these features, get in touch with us.

2.1 Root failure

Storms can break tree roots without blowing them over

Signs to look out for are

**Change in angle of the trunk
Large cracks in the soil
Hump in the ground on one side**



2.2 Hanging branches

Don't forget to look up

Branches can break during storms and still hang on

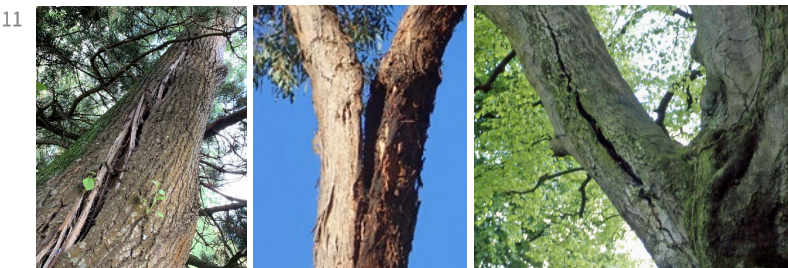
Sometimes they can get stuck up there for quite a while



2.3 A crack or split into the wood, beyond the bark

When trees bend and twist in storms the wood can split and crack

Vertical cracks in the bark are just the tree growing well there's no need to worry



2.4 Decline & death

To stay healthy and strong trees need 'solar panel' leaves to make food

When trees suffer they often have much less leaf cover and many dead branches

Standing dead trees have great habitat benefits but need checking



2.5 Decay fungi fruiting bodies

To decay fungi these 'fruits' are like apples to an apple tree

Decay fungi and trees mostly live happily together creating essential habitat for wildlife

Fungi can sometimes 'eat' too much wood and weaken the tree



Photographs
Jake Miesbauer, Michael Richardson, Roy Finch, Mark Hartley, Rick Milson, Andrew Benson, David Abrahams
Felicity Cloake & Wilf, David Humphries, Jack Prynne, Moreton Arboretum, Josh Behounek, Jan Allen

3

What is Active Assessment?

**Trained assessors (Validators)
looking for risks that are
not Acceptable or Tolerable**

14 Active Assessment is when we're looking for risks that might not be Acceptable or Tolerable. It's also triggered when **Passive Assessment** has picked up a tree that needs a closer look. Active Assessment has three levels to it that increase in depth of evaluation. The 3 levels are Basic > Detailed > Advanced.

**Risk ratings are limited
by the level of assessment**

15 Risk ratings have limitations that depend on the level of assessment at which they're made. For instance, when we carry out Active Assessment at a Basic level. If there are no Obvious Tree Risk Features, the risk is Acceptable at that level of assessment. A Detailed or Advanced Assessment is a more thorough evaluation than a Basic Assessment. They might find features that weren't apparent at a Basic level, and the risk could be higher. However, carrying out a higher level of assessment, with the additional costs, when there's no obvious feature to trigger it isn't reasonable, proportionate, or reasonably practicable.

3.1 Basic Assessment

**Finding the few trees where
the risk might not be
Acceptable or Tolerable**

16 At a Basic level of assessment, we're looking for trees with obvious features where the risk might not be Acceptable or Tolerable. We're also keeping an eye out for features that might increase the likelihood of failure. We can evaluate the significance of these features with VALID's Tree Risk App, and will carry out a Detailed Assessment when it's necessary. Rarely, we may come across emergency work, and we'll let you know about this as soon as we can.

**Tree alerts you raise from
Passive Assessment**

17 If you raise an alert from **Passive Assessment**, we'll decide whether the tree needs a closer look at this Basic level of assessment.

**We'll assess the trees from
easily accessible ground**

18 We'll assess trees from easily accessible ground, by foot, bike, or in a vehicle with a drive-by, and agree which one with you beforehand.

**If we can't get a close enough look
at a tree that we need to
we'll let you know**

19 If there are any trees we need to get a closer look at. But can't because of climbing plants, undergrowth, hedgerows, boundaries, or basal growth, or because the ground is too difficult, we'll let you know.

**The trees
or what they could fall on
and the type of assessment
will be recorded**

20 We'll record trees or what they could fall on and how we covered the ground. For example, in a park, we'll plot and record that we've assessed individual or groups of trees on foot. Whereas, if there are many trees beside a road, we may record that we've assessed the road on foot or with a drive-by.

**No Obvious Tree Risk Features
The risk is Acceptable**

21 Unless a tree has a feature to trigger carrying out a Detailed Assessment, the risk is Acceptable at this Basic level of assessment.

3.2 Detailed Assessment

**We do a Detailed Assessment
when a tree needs a closer look**

22 We'll carry out a Detailed Assessment out on trees that we've picked up during a Basic Assessment as needing a closer look. Or where we've been asked to carry out a Detailed Assessment on a tree.

23 The assessment is carried out from ground level with VALID's Tree Risk App.

**You'll get an easy to understand
one side PDF report**

24 The App prints an easy to understand one side PDF report. The report includes the risk rating, risk review year, risk reduction work (if necessary), and any general management advice that will help you.

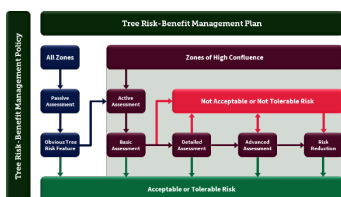
3.3 Advanced Assessment

**Large and important trees
might be worthy of more
effort and cost**

25 If we need more information about the likelihood of failure, we can carry out an Advanced Assessment. Often, we'll want to do this because you have a valuable tree which has extensive decay. The tree may have significant strength loss and we want to find out whether the tree is strong enough. Or, an aerial inspection is necessary to look at the upper stem and branches. When a tree needs an Advanced Assessment, we'll let you know and go through the options with you.

26 If the costs are substantial, we can help you decide whether the tree has enough value and future benefits to justify the investment. We'll produce a report that'll include the risk rating, risk review year, any risk reduction work options, and management advice.

The Strategy at a glance



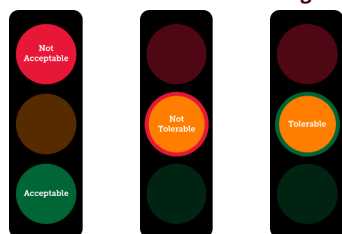
Reasonable
Proportionate
Reasonably practicable



VALID has been stress-tested
to breaking point



Risk ratings are as easy to
understand as traffic lights



Visit our Training page
Or get in touch for help

4

Simpler • Clearer • Smarter

27 Whether you manage or assess tree risk, we're here to help make your life less complicated and more effective.

28 From Strategy to App, we've got all your bases covered with the first complete tree risk-benefit management system. By taking out bafflegab (vague and ambiguous words) and numberwang (questionable maths that you can easily get wrong) from tree risk, we've made it...

29 "Uncomplicated...intuitive...simpler...clearer...smarter"

30 This is what Duty Holders, Arborists, and other team members who we've trained as Basic Validators are all saying. They're some words you'll likely use to describe how you feel after you've validated your approach to tree risk.

4.1 Tree risk-benefit management

31 Whether you're a Government Agency, Landowner, or Homeowner you have a duty of care to manage the risk from your trees falling or dropping branches. To fulfil your duty, you should be reasonable, proportionate, and reasonably practicable about managing the risk to an Acceptable or Tolerable level.

32 VALID's got your back here with our full range of ISO 31000 compliant and common sense **Tree Risk-Benefit Management Strategies**. As part of our not-for-profit goals, we've released all the strategies under a creative commons license. That means they're *free* and open to *everyone*. **Validators** can help you customise your strategy. Or, they have an abbreviated *Validator Strategy* that covers you and them.

4.2 Tree risk-benefit assessment

33 Risk-benefit assessments are carried out under the protective umbrella of our Tree Risk-Benefit Management Strategy. The Strategy does more than 95% of your assessments for you. When you need to carry out a *Detailed Assessment*, you'll use our super smart and intuitive **Tree Risk App**.

34 We've built the engine of the App with a Professor of Natural Hazards & Risk Science. The Professor's an internationally distinguished expert in this field. He's test-driven the model to breaking point:

"We have stress-tested VALID and didn't find any gross, critical sensitivities. In short, the mathematical basis of your approach is sufficiently robust and dependable for any practical purpose."

Willy Aspinall
Cabot Professor in Natural Hazards & Risk Science
University of Bristol

4.3 Tree risk ratings

35 Yes, it really is that clear and easy to understand. There's no confusion about what vague and ambiguous words or complicated numbers mean. We have four easy-to-understand traffic light coloured risk ratings.

- Red** **Not Acceptable** risks will be reduced to an Acceptable level
- Amber** **Not Tolerable** risks will be reduced to an Acceptable level, but with a lower priority than red Not Acceptable risks
- Amber** **Tolerable** risks will not be reduced but may require an increased frequency of assessment than green Acceptable risks
- Green** **Acceptable** risks will not be reduced

4.4 Tree risk-benefit management advice & training

36 We work with Duty Holders to help them manage the risk and benefits from their trees. We also train Arborists to become **Validators**. And personnel who spend a lot of time outside, who aren't Arborists, to be **Basic Validators**.