



Assessing Tree Health

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS055E

When considering tree health, it is important to remember that tree health and forest health are not the same thing. Tree health refers to the health of an individual tree, whereas forest health refers to the health of an entire forest system, including trees, plants, soil, wildlife, and water. A certain amount of insect activity, disease, mortality, and decay is normal and healthy within a forest system, and damaged, deformed, dying, and dead trees provide critical habitat for wildlife.

I once spoke with someone who wanted to see diseases like root rot completely eradicated from forests. While I appreciate his passion for healthy trees, this goal is misguided. While there are some externally introduced exotic diseases of concern, most disease agents found in our forests, such as fungi and bacteria, are natural parts of the forest ecosystem.

Native trees have evolved together with native pathogens, and these pathogens, in turn, have a natural and important role to play in diversifying the physical structure of the forest, eliminating the weakest trees, and increasing the variety of tree species present. Consequently, removing all diseases or pests is not the answer and would result in negative ecological consequences.



Figure 1. Downed trees in a root rot pocket.

In some cases, however, the ecological role of disease may conflict with certain management objectives, such as when site-specific management actions are necessary to control or mitigate disease impacts. For example, dead and decaying wood, like the fallen trees in a root rot-infested site (Figure 1), provide diversity and wildlife habitat. However, this role might conflict with aesthetic and financial objectives.

Tree health is likely to be most problematic when a tree is in your yard or near your house. A dying tree in a forest of otherwise healthy specimens is typically not a problem. However, if you only have a few trees in your yard, and one of them is sick, the impact is magnified.

So what should you do if you have a sick tree? The first thing is to determine whether the tree is actually ailing at all. Some trees, such as western redcedar, as seen in Figure 2, may temporarily appear sick due to normal seasonal dieback (see WSU Extension Fact Sheet FS056E: Seasonal Dieback in Conifer Trees for more information). If the tree is indeed showing symptoms of decline beyond normal seasonal changes, the next step is to determine whether it is a potential hazard (i.e., if it is likely to damage your house or barn, or injure children or animals in the area. Of course, a tree that poses a high risk of injury or property damage requires more immediate attention than a tree that does not carry this risk.

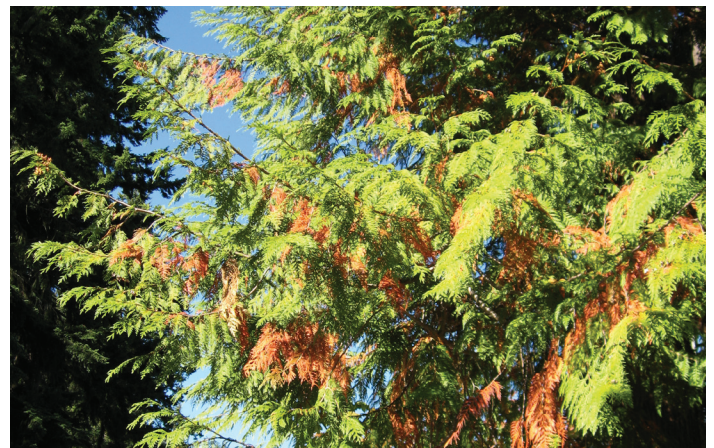


Figure 2. Dead inner foliage on western redcedar.

The next step is to determine the cause of the tree's decline, especially if it is a potential hazard. For instance, if there is the potential of a falling tree damaging your property, you will want to know if it has a problem that weakens its roots or trunk. Your local WSU County Extension office has resources that can help you troubleshoot tree problems, including Master Gardeners and forestry agents. Note that a forestry agent is trained to deal with native trees in a forested setting, rather than ornamental trees in a landscape setting or fruit trees in an orchard setting. WSU also has a number of excellent publications, diagnostic tools, and other "self-help" resources located on its forestry website at <http://ext.wsu.edu/forestry/>.

If you are going to meet with a tree expert about a potential problem, having the following information ready will improve your chances of getting an accurate diagnosis.

- Which trees are affected? Just one tree or multiple trees? Which species are affected or unaffected? What is the size or age of the affected tree?
- What time of year did you first notice the problem? Did symptoms develop all at once or has the tree been declining for a long time? How long?

- What symptoms do you observe in the upper canopy? Are there abundant yet under-sized cones present? Has the leader growth in the uppermost part of the tree shortened over recent years, creating a rounded rather than a pointed top similar to the one shown in Figure 3?
- What color is the affected foliage? Red? Yellow?
- What pattern of foliage decline can you observe at the tree level? From the top down, bottom up. Are there random patches or a uniform crown fade, such as that shown in Figure 3?
- What pattern of foliage decline do you see at the branch level? Are the current year's needles (branch tips) affected, or past years' needles (closer to the trunk), or both?
- What symptoms do you detect on the foliage? Has the foliage been chewed or eaten? Are needles bent or swollen? Are there tiny black spots on the undersides of the foliage (Figure 4) or light colored pustules? Is there sticky honeydew or are insects or insect eggs present?
- What symptoms do you observe on the stem? Is there wood or bark dust caused by wood-boring insects (Figure 5)? Fungal fruiting bodies (conks) (Figure 6)? Insect or animal chewing, clawing, or girdling around the stem or individual branches (Figure 7)? Pitch streaming or flowing (Figure 8)?
- Is there any evidence of mechanical injury (Figure 9) or disturbance to the soil around the tree? Has there been any digging, grading, or construction near the tree within the last 6–10 years?



Figure 3. Uniformly fading crown and shortened leader growth.



Figure 4. Yellowed needles and sooty black spots.



Figure 5. Piles of wood dust in bark crevices.



Figure 6. Fungal fruiting bodies (conks) on tree stem.



Figure 7. Scraped off bark at base of tree.



Figure 8. Streaming pitch on tree stem.



Figure 9. Damage from logging equipment.

If you have a tree of concern, especially one that is a potential hazard, I recommend hiring a professional arborist. A certified arborist is required to have a certain level of training and continuing education. The International Society of Arboriculture (ISA) maintains a directory of certified arborists searchable by location. This directory can be found at <http://www.treesaregood.com/>. You can also get a second opinion if you are not satisfied with the arborist's diagnosis or recommendations.

Keep in mind that in many cases, despite an accurate diagnosis, there may be no immediate, practical action you can take to address a tree health issue. Tree health problems are not like problems with garden pests, where you can purchase a product at your local garden center to quickly clear up the problem. In many cases, it is a matter of letting the problem run its course (oftentimes the trees will recover, although with some loss of growth). In other cases, the tree may already be destined to die by the time you first observe symptoms. Be wary of any offers to spray the trunk of a sick tree with one chemical or another. This offer may be more about temporarily making the customer feel better than about doing something of actual practical value.

Remember that if you do have a tree with a serious problem that is likely to kill it or weaken its structure, you do not necessarily have to remove it. If the tree is not a hazard, you may wish to simply let nature take its course, and look forward to a future snag and the habitat it will provide for all sorts of interesting wildlife. If you do decide to take it down, consider leaving the bottom portion of the tree as a short snag, (which has much less potential to cause damage), to maintain the huge benefits to wildlife. Even a tall stump (Figure 10), between 3 to 5 feet, can be used by wildlife or become a "special feature" of your forest or yard.



Figure 10. Tall stump for possible wildlife habitat.

One major caveat is that if the problem with your tree is contagious, (e.g., root rot or dwarf mistletoe), there may be management implications if there are other susceptible hosts nearby. A professionally certified arborist or your local WSU County Extension office staff can help you determine if additional management actions are needed to assess and protect other nearby trees into the future.



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