

# F O R E S T



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# H E A L T H

## What's Wrong With My Oak? What you need to know about common oak issues

by Ellen Crocker

Oaks are vital to Kentucky's forests, contributing to the economic, environmental, and ecological value of your woods. But recent research shows that oaks are struggling for a variety of reasons. For example, a lack of regeneration is a key driver of what experts warn could be a drop in oaks across the landscape. In addition to this seedling-focused oak bottleneck, there are many pests and diseases that can impact oak trees. These can range from minor problems to major threats. Distinguishing these can help you determine if any action is needed to protect these valuable trees.

### Galls:

Oak trees host a wide range of galls (abnormal tumor-like growths) that can really stick out. They can come in all shapes and sizes, with different ones growing in different places (e.g. leaves, branches). They are typically caused by insects who lay their eggs in the plant tissues and trigger a range of changes in plant growth as the larvae develop, safely protected inside the plant.



**Most galls on oaks are not a health issue for the trees.**

*Photo courtesy: Steven Katovich, Bugwood.org*

Most galls on oaks are not a health issue for the trees. On landscape and nursery trees, sometimes branch galls — specifically horned oak gall and gouty oak gall—can cause problems and should be pruned out when small. But in a woodland setting, galls are not something you need to worry about.

### Hypoxylon canker:

Ever noticed a smooth grey patch on the bark of an oak branch (or downed log)? This might be hypoxylon canker. The grey or black patch is actually the fruiting body of a fungus. While a pathogen on its own, hypoxylon canker typically is a sign of tree stress. The fungus is native and widespread, present even in healthy trees, waiting to grow until trees are stressed. Healthy trees and branches typically do not experience problems—even if the fungus that causes it is there—until other health problems trigger a decline.

If you see hypoxylon canker on many branches, it is worth thinking about why your trees are so stressed that this issue has become widespread. Cankers on the main trunk of a tree are a major red flag and a sign that the tree is dead already (or will be soon).



**Hypoxylon canker typically is a sign of tree stress.**

*Photo courtesy: Robert Anderson, USDA Forest Service*

## Bacterial leaf scorch:

Does your oak tree look like it got too close to a campfire, with leaves that have scorched dead edges? If symptoms like this suddenly come on in late summer, it could be bacterial leaf scorch. While the symptoms of this disease are in the leaves, the problem is that the pathogen that causes it is gumming up the vascular system of the tree, preventing the tree from getting enough water. This is a lethal issue that will



**Bacterial leaf scorch is a lethal issue that will cause trees to decline over time.**

*Photo courtesy: John Hartman, University of Kentucky, Bugwood.org*

cause trees to decline little by little (typically one branch or part of the tree at a time) over several years until they die.

While bacterial leaf scorch is a major issue for landscape trees, especially common in street trees, it is not considered an issue for trees in Kentucky's woodlands.



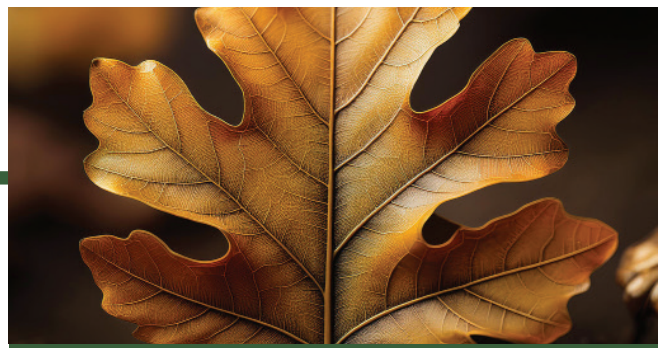
**Oak wilt is typically not a serious issue for trees in Kentucky.**

*Photo courtesy: Steven Katovich, Bugwood.org*

## Oak wilt:

The symptoms of the disease oak wilt can look similar to those of bacterial leaf scorch, with leaves developing scorched edges. However, oak wilt tends to act more rapidly, with the whole canopy turning brown and the tree dying quickly. Red oak species are most susceptible to this issue, and it can spread from tree to tree through natural root grafts, pruning, and insects.

Fortunately, oak wilt is typically not a serious issue for trees in Kentucky. While it has been noted to occasionally occur in the area for many years, typi-



**Learning what is wrong with your oaks is a beneficial part of forest health.**

cally it is quite rare. However, when trees are stressed for other reasons (such as droughts), there can be increased cases of oak wilt and several positive cases have been confirmed in the past year.

## Root issues:

A wide range of different root rots can impact oaks, including armillaria root rot and phytophthora root rot. Although you typically can't see them, you may notice dieback in a tree's canopy and reduced vigor. Most of the time, healthy trees can defend themselves and outgrow damage. But extensive decay can result in a stressed tree and an increased likelihood of tip-over.

Factors that impact root rot severity include species, damage to trees, site condition, and weather. If a tree is growing in a spot that holds moisture, it may experience more problems, especially considering recent weather patterns that have resulted in more rain. Trees growing in sites that previously were fine now may need to contend with increased root rot. Wounding or compaction of a tree's trunk or root zone invites future issues, so take care to protect remaining trees from damage during harvests or other management.

## Oak decline:

Oak decline is a general term used for the progressive dieback and eventual death of oak trees due to compounding stressors. This includes a combination of predisposing issues (such as site, tree age, and species), inciting stress triggers (such as drought), and contributing factors that can act as nails-in-the-coffins for stressed trees (hypoxylon canker, two-lined chestnut borer, and more). While pinpointing individual causes of decline in oak trees is a challenge, it is most common in aging red or black oaks as they naturally reach the upper end of their life expectancy.

While you can't stop oak decline in your woods, knowing that you have susceptible trees can help inform your decision about next steps in your management. For example, if you know that you have many trees likely to decline soon, planning ahead (Potential harvest? Regeneration? Invasive plant management?) can set the stage for success in the future.

## And many more...

In addition to these issues, there are many other diseases and insects that can pop up on oak trees. While most of these (like the occasional leaf spot) are minor, some, like bleeding cankers, may be a sign of something more significant. For example...



**Anthracnose**

*Photo courtesy: Joseph O'Brien, USDA Forest Service, Bugwood.org*



**Bleeding cankers**

*Photo courtesy: Ellen Crocker, University of Kentucky*



**Oak shothole leafminer**

*Photo courtesy: Ellen Crocker, University of Kentucky*

## Not here yet: Threats to watch...



**Spongy moth**

*Photo courtesy: John Yuschock, Bugwood.org*

**Spongy moth:** Invasive moth that is near Kentucky, but not here yet. Caterpillars gather in large numbers and defoliate trees, especially oaks, and can greatly stress trees.

**Sudden oak death:** A disease that kills oaks on the west coast, caused by an invasive pathogen. It cuts off circulation in the tree's trunk, resulting in bleeding cankers, sudden browning of canopies, and dead trees.

Many insects and diseases can impact oaks but most of these are relatively minor. While they may stress trees (or kill trees that are already weakened), only a few things can kill vigorously growing oak trees. Because of this, promoting the health of your woods overall can go a long way toward preventing problems from these and other issues.

About the author: **Ellen V. Crocker**, Ph.D., UK Department of Forestry and Natural Resources and Forest Health Research and Education Center. Her focus is on forest health issues including tree diseases, insect pests, and invasive plants.

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