

# Photo guide to Tree pests and diseases

Oak



Ash



Horse chestnut



Elm



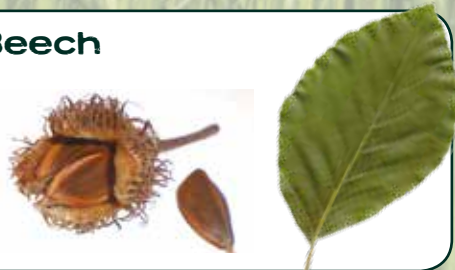
London plane



Sycamore



Beech



Alder



## Oak

Oak mildew



Simon Norman

- Powdery white coating on leaves
- Caused by a fungus. First seen in the UK in 1908. Now very common. It slows down photosynthesis and growth, especially in young trees.

Knopper galls



Simon Norman

- Acorns with distorted shapes
- Caused by a wasp larva eating inside the acorn. First seen in the UK in the 1950s. Now very common. Affected acorns cannot germinate.

Oak processionary moth



Falko Seyffarth / CC BY-SA 3.0

- Large clump of caterpillars on trunk
- First seen in the UK in 2006. They feed on leaves causing serious leaf loss. Stay away – the caterpillars are covered in toxic hairs. **Use TreeAlert**

Acute oak decline



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- Trunk bleeding
  - Dieback in leaves and branches
  - D-shaped holes may be present
- Causes not known. Can kill mature trees within 5 years. **Use TreeAlert**

## Cauiflower galls



Rosser1954 / CC BY-SA 3.0

- Woody mass on stalk of ash keys
- Caused by a mite. Ash keys contain the tree's seeds, and they are spread by the wind. Galls make the ash keys heavier, so they are not carried as far.

## Nectria canker



AvalokiteshvaraBudha / CC BY-SA 4.0

- A dead section of branch or trunk
  - Starts as a small dip, then expands outwards in concentric rings
- Caused by a fungus. Weakens the branch so that it snaps in high winds.

## Leaf-miner moth



Simon Norman

- Brown blotches (on leaf)
  - See through – hold leaf up to light
- Caused by the larvae of a moth eating inside the leaf. First seen in the UK in 2002.

## Leaf blotch



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- Brown blotches with yellow edges
  - Not see through
- Caused by a fungus. First seen in the UK in 1935. Unsightly, as it makes the tree look scorched.

## Chalara dieback



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- Blackened leaves hanging on twigs
  - Dark diamond-shaped mark
- Caused by a fungus. First seen in the UK in 2012 but spreading rapidly. Likely to kill most ash trees by 2040.

## Emerald ash borer



Photo taken in USA

Pacific Southwest Forest / CC BY 2.0

- Not present in the UK, but might be accidentally imported with wood as it is spreading in central Europe. Burrowing larvae make tunnels with sharp bends. **Use TreeAlert**

## Scale insect



Donald Holbern / CC BY 2.0

- Circular woolly white spots topped with brown or orange (on trunk)
- Caused by an insect. First seen in the UK in 1964. Unsightly but not lethal. Also seen on maples and sycamore.

## Bleeding canker



Simon Norman

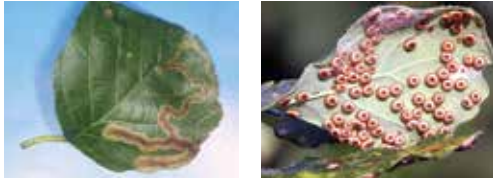
- Black oozing spots on trunk
- Caused by bacteria. First seen in the UK in early 2000s. Can kill the tree. Estimated that half of all horse chestnuts in the UK are now affected.

# Photo guide to Tree pests and diseases

## Pests and diseases

**Pests** are insects or other small animals that harm plants or trees. **Diseases** are caused by harmful microbes (pathogens) including fungi and bacteria.

Many native insects and diseases are common and widespread, and their effects are short-lived. They are an important part of the ecosystem, and are not a cause for concern.



Signs of native insects. Left: leaf-mine made by a fly. Right: plant galls made by a wasp.

However non-native pests and diseases are much more of a threat, because trees have not evolved resistance. This guide covers the more serious pests and diseases that threaten broadleaved trees.

## Stopping the spread

If you find evidence of any of these pests and diseases, take care not to spread them to new places. The disease *Phytophthora* spreads easily on boots, tools and the wheels of vehicles. Don't move infected wood between sites.

A few pests and diseases are notifiable. This means that you must by law report any sightings.

The easiest way to make a report is through the website TreeAlert [treealert.forestresearch.gov.uk](http://treealert.forestresearch.gov.uk)

Interested in tree planting, tree care and other volunteering opportunities in your town? Visit [www.treesforcities.org](http://www.treesforcities.org)



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Green Recovery Challenge Fund



## Elm

### Elm zig-zag sawfly



Lukas Large / CC BY-SA 2.0

- Small green caterpillar leaving a zig-zag shaped feeding pattern
- Caused by a sawfly. First seen in the UK in 2017 but now spreading. It can defoliate entire trees. **Use TreeAlert**

### Dutch elm disease



Geographer / CC BY-SA 2.0

- Leaves going yellow and brown before autumn, then tree death
- Caused by a fungus spread by a beetle. It has killed millions of elm trees across the UK since the 1960s.

## Sweet chestnut

### Sweet chestnut blight



Richard Gardner (Bugwood) / CC BY-NC 3.0

- Dead and cracked bark
  - Clusters of orange raised spots
- Caused by a fungus. First seen in the UK in 2011. Usually kills trees, sometimes rapidly. **Use TreeAlert**

### Oriental chestnut gall wasp



Björn S / CC BY-SA 2.0

- Galls – green or red lumps on twigs or leaves, turning brown and woody by late summer
- Caused by a wasp larva. It causes leaves to drop early. **Use TreeAlert**

# Generalists

## Massaria disease



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- Large lesion (often high in the tree)
- Patches of wilting or dead leaves

Caused by a fungus. First seen in the UK in 2011. Affects plane trees. Dangerously weakens large branches.

## Anthrakanose of plane



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- Bud and leaf wilt

Caused by a fungus. Affects plane and sycamore trees. Although not serious by itself, it is more damaging in combination with Massaria.

## Asian longhorn beetle & Citrus longhorn beetle



Daniel Krook; Yao Lishen CC BY-NC-ND 3.0

- Two similar shiny black beetles with long white striped antennae

Not in UK but has been accidentally imported. An ALB outbreak in Kent was eradicated in 2019. **Use TreeAlert**

## Bacterial canker



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- Sunken patches of dead bark
- Small holes in leaves ('shot hole')

Caused by bacteria. Affects cherry and plum trees. Sometimes gummy liquid oozes from these cankers.

# Generalists

## Phytophthora

*Phytophthora* is a genus of extremely destructive plant pathogens. They are fungus-like organisms called oomycetes (or water moulds).

They can infest a wide range of plants, including trees. One of the most damaging species causes potato blight.

Significant *Phytophthora* species affecting trees in Britain are:

- *Phytophthora ramorum*
- *Phytophthora kernoviae*
- *Phytophthora alni*

## Phytophthora kernoviae



Forestry Commission / OGL 1.0

- Black oozing spots and dead bark
- Infests beech and oak trees. Bilberry and rhododendron are susceptible, and can pass on the disease. First seen in the UK in 2003. **Use TreeAlert**

## Phytophthora ramorum



ScotGov SASA / CC BY 2.0

- Black oozing spots on trunk
- Infests oak trees, as well as larch trees and rhododendron. First seen in the UK in 2002. Causes Sudden Oak Death. **Use TreeAlert**

## Phytophthora alni



Thomas Jung (Bugwood) / CC BY-NC 3.0

- Leaves small, sparse and yellow
  - Dead branches in the crown
  - Bleeding at base of tree
- Infests alder trees. First seen in the UK in 1993. **Use TreeAlert**