

# Phytophthora austrocedrae

**Phytophthora austrocedrae is an aggressive, fungal-like pathogen that poses a serious threat to juniper trees in Britain.** Juniper is an important native species and a significant proportion of the small area of juniper woodland in Britain is protected. *Phytophthora austrocedrae* was first reported in the UK in 2011 and infected trees have now been found at sites across Scotland and the north of England. The pathogen primarily attacks the roots of juniper trees, killing phloem and forming lesions which extend up into the lower stem. Eventually the tree will be killed by girdling of the main stem. *Phytophthora austrocedrae* is a notifiable disease and all suspected cases should be reported to the plant health authorities.



## Distribution

To date, *Phytophthora austrocedrae* has only been recorded in Argentina and Britain, and its geographical origin and global distribution are currently unknown. It was first described in Argentina in 2007, where it was associated with the widespread dieback and mortality of the native Patagonian cypress *Austrocedrus chilensis*. In 2011 it was reported in Britain for the first time and it is now known to be widely distributed on juniper trees (*Juniperus communis*) in the Cairngorm region of Scotland and the Lake District in the north of England where juniper is relatively abundant. More juniper sites in Scotland, England and Wales are currently under investigation.

*Phytophthora austrocedrae* has also been found infecting Lawson cypress (*Chamaecyparis lawsoniana*) and Nootka cypress (*Chamaecyparis nootkatensis*) in Britain, although the number of reported infections of these species to date is small.

## How the disease spreads

The source of the *Phytophthora austrocedrae* epidemic in Britain is currently unknown. Because the populations of the pathogen in Argentina and Britain are genetically distinct, it is unlikely to have been introduced into Britain from Argentina. *Phytophthora austrocedrae* has over the past few years been

identified in a small number of diseased juniper plants located in nurseries or private gardens in England, Scotland and Wales in addition to the field infections. It is therefore possible that the pathogen may have entered the UK through importation of infested nursery plants.

Once established at a site, soil infested with spores of the pathogen may then be spread locally or over longer distances on footwear or by vehicles and machinery. Watercourses flowing through infected sites may also carry the free-swimming zoospores of *Phytophthora austrocedrae*.

## Symptoms to look out for

### Foliage

Foliage on infected trees turns bronze/brown over all or part of the crown (1). The pathogen also occasionally attacks the stem or branches, so that the foliage associated with that particular infected branch or stem turns bronze/brown.

### Wood/bark

When the outer bark of the tree is cut away at the infected area, discoloured phloem (inner bark) is revealed. The diseased tissue is usually cinnamon brown in colour, often with a distinct yellow colouration at the lesion edges, whereas healthy phloem is white (2).



## Action to contain the disease

*Phytophthora austrocedrae* is currently being treated as a notifiable disease. Infected sites are subject to statutory control measures involving the imposition of biosecurity protocols and restrictions on the movement of livestock, plant material and soil. Due to the rugged, wet and remote nature of many of the affected sites, destruction of infected trees is not a feasible option. Where appropriate, disinfectant mats are being used at entry/exit points from sites with high public access, and staff and visitors are asked to use them to kill any spores from the pathogen that they might pick up on footwear. Notices have also been erected at these public sites to inform visitors of the infection and to encourage them to observe sensible biosecurity measures such as keeping to the footpaths, keeping dogs on leads and cleaning shoes and boots after leaving the sites.

## How you can help

*Phytophthora austrocedrae* is a notifiable disease. You should report suspected cases to the Plant Health authorities (below).

Further guidance on identifying disease symptoms is available from: [www.forestry.gov.uk/pestsanddiseases](http://www.forestry.gov.uk/pestsanddiseases)

You can also find and follow the general advice on sensible biosecurity measures from: [www.forestry.gov.uk/biosecurity](http://www.forestry.gov.uk/biosecurity)

At outbreak sites you should use the disinfectant mats provided at entry/exit points to kill any spores of the pathogen that might have been picked up on your footwear.

## Reporting the disease

If the suspected case involves a number of trees in a woodland then you should report it to the Forestry Commission via the Tree Alert page at: [www.forestry.gov.uk/treealert](http://www.forestry.gov.uk/treealert)

If you are a nursery owner or involved in a business handling young trees and planting stock, you should report suspected cases of infected trees directly to the relevant plant health authority (Fera or Scottish Government) – see Contacts below.

## For more information

Visit our website at [www.forestry.gov.uk/pestsanddiseases](http://www.forestry.gov.uk/pestsanddiseases) for the latest information and a distribution map of *Phytophthora austrocedrae* and for information on other pests and diseases affecting forests and woodlands in the UK.

You can also download our free Tree Alert app to your smartphone or tablet via the App Store and Google play.

## Contacts and plant health authorities

- Forestry Commission (Plant Health)  
[www.forestry.gov.uk/planhealth](http://www.forestry.gov.uk/planhealth)
- Fera (Food & Environment Research Agency)  
[www.fera.defra.gov.uk/contactUs](http://www.fera.defra.gov.uk/contactUs)
- Scottish Government (Plant health)  
[www.scotland.gov.uk/planhealth](http://www.scotland.gov.uk/planhealth)