Our trees are under increasing threat from devastating pests and diseases

Human activity is a key factor contributing to their spread

If your profession involves working with trees or plants, you present a high risk for the spread of harmful pests and diseases because:

- You are more likely to encounter potentially contaminated material e.g. soil, water and organic material.
- You may work at multiple sites in one day, increasing the likelihood of transporting pests and diseases on dirty boots and other personal equipment.
- You are more likely to be transporting tools and machinery that could carry pests and disease.

Soil, water and organic matter can harbour pests, diseases and other harmful invasive non-native species.

Undertaking basic biosecurity measures such as cleaning boots and tools, minimises the amount of contaminated material – e.g. soil, water and organic matter – you carry between sites, reducing the chance of spreading harmful pests and diseases.

You can also help by spotting outbreaks early, reporting them to the relevant plant health authorities, and taking action to minimise any impact (see key contacts and resources for more information).

These actions help maximise the success of control measures. If we all undertake basic biosecurity measures when entering and leaving sites now, we will all be in a better position to stop future outbreaks spreading.

What can you do?

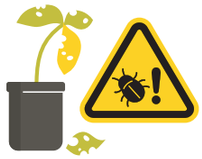
Before you start work today remember to:

Think kit

- Always make a clean start each day by removing soil and debris from your boots and clothing before leaving any site.
- Clean and disinfect chainsaws and other cutting tools regularly, and always when moving between sites.
- Clean and dry climbing ropes and PPE to remove build-up of sawdust and organic debris. Always do this after working on a diseased or infested tree.

Think transport

- Avoid driving vehicles off-track and remove build-up of soil and debris, including in cabs, footwells and the boot, when moving between sites. Park vehicles on hardstanding where possible.
- Thoroughly inspect plant or machinery entering sites you manage for soil and debris build-up before allowing access.



Think trees

- Importing new planting stock onto land you manage or work on poses the biggest biosecurity risk. Choose planting stock from reputable nurseries with robust biosecurity measures, including by way of example, those with Plant Healthy Certification (or similar) where possible.
- Keep records of all purchases and suppliers to help with tracing exercises in the event of a pest or disease.
- Monitor new stock for signs of ill health on a regular basis and report any suspected sightings of pest and disease to the Forestry Commission through TreeAlert.

Being responsible won't break the bank

Get your basic biosecurity kit

Long handle brush
Hoof pick
Water container
Flexible bucket

Total: £20

Disinfectants

Removing organic matter is the most important step in personal biosecurity. A brush and clean water is highly effective; however, if using disinfectants, users must follow the manufacturer's instructions.

TreeAlert

Tree pest & disease sighting reporter

Think you have spotted a tree pest or disease?

Report it via TreeAlert (online) and we'll do the rest

What you need:

- 3 quality photos of the symptoms and the tree/s in context

- Accurate location of the impacted tree/s (grid reference)

The evidence

The impact of dirty tools

Think kit

Diseases can be spread through our tools. In a recent study, plots of unharvested eucalyptus had only a 2.7% occurrence of *Ceratocystis fimbriata* (Ceratocystis wilt), but harvested plots had 39.7%, indicating the disease had been spread on infected harvesting tools.

(Ferreira et al., 2012)

In a USA study, *Ceratocystis platani* (canker stain of plane) infected 40% of wounds made by saws previously used on diseased trees. Rates increased to 50% for climbing ropes.

(Walters, 1946)

Silent threats

Think trees

In a study performed in the Netherlands, 160 nursery plants were sampled from around the world, 9% were found to be carrying the destructive bacterium *Xylella fastidiosa*, yet none showed any symptoms. Many pest and disease outbreaks are not easy to detect, particularly in their early stages, so it is important to always carry out good biosecurity measures and source trees from pest- and disease-free areas.

(Bergsma-Vlami et al., 2017)

Clean boots, healthy forests

Think transport

Cleaning boots and vehicles has been shown to help minimise the number of infected trees at *Phytophthora* sites. A study found that 30% of boots sampled contained organic material infected with *Phytophthora*. *Phytophthora* can survive for more than a year in organic material, increasing the chance of it becoming established elsewhere if the material is moved.

(Goheen *et al.*, 2012; Pau'Uvale *et al.*, 2005; Webber and Rose, 2007)

Imported 'instant impact' trees

Think trees

The trade in live plants, particularly 'instant impact' trees, has resulted in a large number of tree pest and disease introductions worldwide. For example, infected nursery stock was responsible for the introduction of *Phytophthora ramorum* which then spread to larch forests in south west England, and the pathogen that causes ash dieback is thought to have been introduced from Eastern Europe and carried to new sites in the UK through infected planting material.

The pest & disease cycle

diseased or infested trees and plants

leading to

pests & diseases harboured in

Organic material* Water Live plants

The threat

Human activity accelerates the spread of pests and diseases. Break the cycle with good biosecurity practices.

Break the cycle with good biosecurity!

healthy trees and plants

which can spread infection to

moved by humans

PPE & climbing equipment | Movement of live plants | Boots & clothes | Movement of organic materials | Vehicles | Tools & machinery

*Organic materials include plant material, timber, woodchip and firewood.

Industry specific guidance

The Forestry Commission has worked closely with the following organisations to develop industry-specific biosecurity guidance to reduce their members' risk of introducing or spreading pests and diseases.

Use your smartphone's camera to scan the QR codes. This will take you to industry specific biosecurity guidance.

Arboricultural Association — trees.org.uk — Think trees

Landscape Institute — Inspiring great places — Think trees

LTOA — London Tree Officers Association — Think trees

Think provenance

To reduce the risk of introducing or spreading harmful plant pests and diseases, it's important to source biosecure planting stock. Choose planting stock from reputable nurseries with robust biosecurity measures, including by way of example, those with Plant Healthy Certification (or similar) where possible.