Detailed guide: Prevent the introduction and spread of tree pests and diseases

Updated: Added a URL and did some tweaking.

Biosecurity refers to a set of precautions that aim to prevent the introduction and spread of harmful organisms. These include non-native tree pests, such as insects, and disease-causing organisms, called pathogens, such as some bacteria and fungi.

Tree pests and diseases can be transported between or within countries via a number of pathways, including:

- live plant and tree products, such as potted plants
- timber and wood packaging materials (WPM), such as shipping crates and pallets – find out more if you're an importer using WPM
- dirty tools, kit, machinery and vehicles, such as chainsaws, boots and all-terrain vehicles
- soil and organic material, such as leaf litter
- natural methods, such as wind and water

There has been a significant increase in the number of non-native tree pests and diseases being introduced to the United Kingdom since the early 2000s. This demonstrates the need for us all to take action to provide our trees, woods and forests with greater protection. By implementing appropriate biosecurity measures, we can significantly reduce the risk of introducing and spreading tree pests and diseases.

This page will show you how to maximise good tree health through biosecurity.

See Forestry Commission guidance on importing and exporting wood and timber products.

What you can do

Public

Tree pests and diseases can have a significant impact on our landscape, but there are some simple steps members of the public can take to help limit their spread:

- drive and park your vehicle only on hard-standing surfaces such as tarmac where possible when visiting outdoor areas such as woodlands, parks or gardens

- clean mud, organic material and water off your boots, bikes and buggies – and the dog – before you leave, because fungi, bacteria and insects can live in these materials
- ‘Don’t risk it!’ – please don’t bring any plant or tree products back from trips abroad, because these might be carrying harmful non-native tree pests or pathogens
- report any trees that you suspect are in ill-health to the Forestry Commission using Tree Alert

Industry professionals

People working in the arboriculture, forestry and landscaping industries are considered a particularly high-risk group for their potential to spread tree pests and diseases.

The Forestry Commission has therefore worked closely with the following organisations to develop industry-specific biosecurity guidance in an effort to reduce their members’ risk of introducing or spreading pests and diseases:

- Animal & Plant Health Agency (APHA)
- Arboricultural Association
- British Association of Landscape Industries (BALI)
- Confederation of Forest Industries (ConFor)
- Horticultural Trades Association (HTA)
- Institute of Chartered Foresters (ICF)
- Landscape Institute
- London Tree Officers’ Association

By following the three calls to action from our industry guidance (‘Think kit, think transport, think trees’) alongside the public biosecurity guidance above, industry professionals can significantly reduce the risk:

‘Think kit’:

- make sure all equipment, including boots, clothing, ropes and saws, is free from soil and organic material before entering and leaving a site
- regularly clean ropes as per the manufacturer’s guidance, or use dedicated ropes for particular sites
- clean and disinfect chainsaws (pruning saws and other cutting tools as part of regular routine maintenance, and before moving to new sites)

‘Think transport’:

- remove any build-up of soil and organic material on vehicles and machinery, including cabs, wheels and foot wells, before leaving each site
- use proper off-site wash-down facilities regularly

‘Think trees, plants, and materials’:

- develop relationships with nurseries you can trust so they can help you responsibly source plant and tree stock from pest- and disease-free areas

- keep accurate, up-to-date records of all purchases and supplies to assist with tracing exercises in the event of an outbreak
- regularly monitor plant and tree stock for signs of ill-health, and report any suspect symptoms to us using Tree Alert
- if you're responsible for importing or moving plants, check your plant passport and registration requirements with APHA before doing so
- source landscaping materials only from pest- and disease-free areas
- be aware of any restrictions in place, or phytosanitary (plant health) measures and treatments required when importing certain materials or their packaging
- consider specifying British-grown plants to avoid being party to an accidental introduction of a pest or disease

When working on a site that is subject to a Statutory Plant Health Notice (see below), or where a pest or disease has been confirmed, you must follow any additional biosecurity guidance for that pest or disease in addition to the measures above.

If you must remove infected or infested material from such sites for safety reasons, you must ensure that:

- it's kept separate from other arisings
- it's not used for mulch or firewood
- it's disposed of at a licensed handling facility, or through deep burial or incineration on site
- you obtain a movement licence if required

Land owners and managers

As a land owner or manager, it's particularly important that you implement appropriate biosecurity measures to prevent the introduction and spread of tree pests and diseases. Not only can these organisms affect the economic value of your trees, they can also have a wider negative impact on other species and habitats.

By following the biosecurity guidance provided above for the public and industry professionals, you can significantly reduce the risk of tree pests and diseases spreading on to your land. If, however, a tree pest or disease is confirmed on the land you own or manage, there are some additional measures you need to follow:

Statutory Plant Health Notices (SPHNs)

If the tree pest or disease found on the land you own or manage is classified as notifiable, you may be issued with an SPHN. The Forestry Commission and other plant health authorities issue these notices requiring the owner or manager to take certain steps to eradicate or contain notifiable pests and diseases.

SPHNs requiring eradication may require measures to kill the infected or infested trees, such as by felling or ring barking. SPHNs ordering containment measures may allow the infected or infested trees to remain

standing, but require any susceptible material to remain on site.

If you're issued with an SPHN, you must follow any instructions provided within the document. If you have any questions about an SPHN you have been issued, contact the Forestry Commission.

Note that receipt of an SPHN doesn't mean that you're in any trouble. Nor does it imply that you have committed an offence, or are at fault for the pest or disease being present on your land. However, failure to comply with the requirements of an SPHN can result in enforcement action and prosecution.

Non-notifiable pests and diseases

You're not required to take any action if the tree pest or disease found on your land is not notifiable. We do, however, recommend that you take the following measures to ensure people's and animals' safety, and to minimise any further spread of the pest or disease. You should:

- continue to implement the biosecurity measures in the publicand industry professionals sections above
- make any visitors aware of the presence of pests and diseases on your land through information boards, posters at entry points, and/or by adding information and biosecurity guidance to your site's website, if available
- monitor the trees' safety as the infection or infestation progresses, and prune or fell affected trees if they threaten to cause damage or injury
- in low-density situations, such as in parks or gardens, slow the spread of pests and diseases by removing and disposing of (by burying, composting or, where permitted, burning) infected trees and their fallen leaves and branches

Biosecurity kit

Putting together a simple, portable biosecurity kit can help you implement simple measures every day to help limit the introduction and spread of tree pests and diseases. The following are cheap and easily obtained items to include in your kit.

- bucket (big enough to fit your boot and a few inches of water)
- boot pick
- brush
- disinfectant
- hand sanitiser
- water container (or a large re-used water bottle)
- portable pressure washer (optional, but handy for cleaning bikes or other equipment that won't fit in a bucket)

Disinfectants

Propellar and Cleankill Sanitising Spray are effective against Phytophthora species and other plant pathogens. Note that 'Cleankill Sanitising Spray'

should be distinguished from ‘Cleankill’, which is a commonly used animal health disinfectant. ‘Cleankill’ has not been tested for its effectiveness against plant pathogens such as Phytophthora species.

We make the following recommendations for using these disinfectants:

- disinfectants are only effective when sprayed on to clean surfaces, so clear all soil and organic material from the surfaces being disinfected before spraying
- use Cleankill Sanitising Spray rather than Propellar to disinfect work boots and outerwear, to avoid any damage to their fabric and glue
- propellar should be used on metal tools to prevent rusting, but it must be stored in a flame-proof container when not in use because of its flammability

COSHH (control of substances harmful to health) and data safety sheets
(PDF, 657KB, 18 pages)

for both of these products are available and should be consulted before use.

If using disinfectant, you should also include these additional items within your kit:

- eye protection
- protective gloves
- flame-proof container

E-learning

The number of introductions of tree pests and diseases has increased. It is therefore more important than ever that we all learn how we can help to minimise the risk of further introductions and spread through the effective application of biosecurity measures.

Our biosecurity e-learning package was developed with the Animal and Plant Health Agency, the Arboricultural Association and the British Association for Landscape Industries. It provides background information about biosecurity issues, and clear guidance on the most effective and appropriate biosecurity measures for different situations.

The package can be accessed via the Forestry Commission’s e-learning portal. Before you first use it, you’ll be asked to register and create an account. Once your account is verified you can enrol for the online courses.

The package is divided into five modules:

- Module 1: Biosecurity awareness
- Module 2: Biosecurity – dispersal pathways
- Module 3: Biosecurity measures
- Module 4: Biosecurity – personal controls
- Module 5: Biosecurity – import and export requirements for wood

packaging material

At the end of each module is a short test to establish your understanding of the subject. The pass mark for each test is 80 per cent, and there is an option to re-take the test if required.

If you have any queries about the e-learning package, contact the Forestry Commission.

Resources

‘Keep it Clean’

The Forestry Commission’s ‘Keep it Clean’ campaign is a simple, memorable call to action to everyone to incorporate biosecurity measures into their daily routine. You can support the campaign by downloading the media and tools and using them within your organisation any way you can.

- ‘Keep it Clean’ logo
  (JPEG, 14.4KB)

- Industry leaflet (arboriculture)
  (PDF, 1.16MB, 2 pages)

- Industry leaflet (forestry)
  (PDF, 979KB, 2 pages)

- Industry leaflet (landscaping)
  (PDF, 992KB, 2 pages)

- ‘Think kit, think transport, think trees’ poster
  (PDF, 43.8KB, 1 page)

- ‘Think kit, think transport, think trees’ window sticker
  (PDF, 38.2KB, 1 page)

You can also show your support on Twitter by using the Forestry Commission’s ‘Keep it Clean’ Twibbon

Other useful resources

- UK Plant Health Risk Register
  Records the main threats to the UK's plants and trees, and provides prioritised actions to help us improve our defences against them
- UK Plant Health Information Portal
  Provides a hub for plant health information, data and resources
- Plant Biosecurity Strategy
  Provides a high-level overview of the activity that Defra and the devolved administrations in Scotland and Wales are undertaking to improve plant biosecurity across Great Britain
- Tree Health Management Plan
  Sets out the government's approach to tree health in England, which is in line with the Plant Biosecurity Strategy
- Tree Health Resilience Strategy
  Sets out the UK's plans to reduce the risk of pest and disease threats, and how we will strengthen the resilience of our trees to withstand threats
- Generic Contingency Plan for Plant and Bee Health in England
  A working document describing how Defra and operational partners will prepare for, and would respond to, an outbreak of a plant or bee pest or disease in England
- Countryside Stewardship
  Apply for tree health grants all year round to restore or improve woodland trees

Contacts

For tree health and biosecurity related queries:

- email: tree_health_england@forestry.gsi.gov.uk
- phone: 0300 067 4321

For e-learning enquiries:

- forestryelearning@forestry.gsi.gov.uk

Use Tree Alert to report a suspected tree pest or disease to the Forestry Commission.

Sign up to Tree Health News for the latest information on tree and woodland health.

Follow @ForestryComm on Twitter for updates on forestry grants, regulations and tree health in England.

Detailed guide: Find a specific tree pest or disease

The pests and diseases listed below are either present in Great Britain or posing the greatest threat of entering.

Some of the information below is still being developed, and will be fully updated by March 2019.

Tree pests in alphabetical order

- Asian longhorn beetle (Anoplophora glabripennis)
- Bronze birch borer (Agrilus anxius)
- Budworms (multiple species)
- Citrus longhorn beetle (Anoplophora chinensis)
- Eight-toothed European spruce bark beetle (Ips typographus)
- Elm zig-zag sawfly (Aproceros leucopoda)
- Emerald ash borer (Agrilus planipennis)
- Great spruce bark beetle (Dendroctonus micans)
- Gypsy moth (Lymantria dispar)
- Horse chestnut leaf miner (Cameraria ohridella)
- Oak pinhole borer (Platypus cylindrus)
- Oak processionary moth (Thaumetopoea processionea)
- Oriental chestnut gall wasp (Dryocosmus kuriphilus)
- Pine processionary moth (Thaumetopoea pityocampa)
- Pine-tree lappet moth (Dendrolimus pini)
- Pinewood nematode (Bursaphelenchus xylophilus)
- Siberian coniferous silk moth (Dendrolimus sibiricus)
- Two-spotted oak buprestid beetle (Agrilus biguttatus)

Tree diseases in alphabetical order

- Acute oak decline
- Chalara dieback of ash (Hymenoscyphus fraxineus)
- Chronic oak dieback
- Conifer root and butt rot
- Dothistroma needle blight of pine (Dothistroma septosporum)
- Dutch elm disease (Ophiostoma novo-ulmi)
- Elm yellows phytoplasma (Candidatus Phytoplasma ulmi)
- Horse chestnut bleeding canker (Pseudomonas syringae pv. aesculi)
- Massaria disease of plane trees (Splanchnonema platani)
- Neonectria disease of fir trees (Neonectria neomacrospora)
- Oak wilt (Ceratocystis fagacearum)
- Phytophthora diseases – an overview
- Phytophthora alni of alder
- Phytophthora austrocedri
- Phytophthora kernoviae
- Phytophthora lateralis

- Phytophthora ramorum
- Pitch canker of pine (Fusarium circinatum)
- Plane tree threats
- Sirococcus blight (Sirococcus tsugae)
- Sweet chestnut blight (Cryphonectria parasitica)
- Xylella (Xylella fastidiosa)

Guidance: Tree health news

Keep up to date with the latest news and views on tree pests and diseases in England by signing up for Tree health news.

Detailed guide: Identify a tree pest or disease: overview

Monitoring tree health and protecting our trees, woods and forests from pests and diseases is an increasingly important part of sustainable tree and forest management. This means you need to be able to identify specific pests and diseases to tackle any obvious problems. Once you know what's affecting your trees, you can find advice on what action to take.

Specific tree pests and diseases

If you know the name of the tree pest or disease affecting your trees, see the Forestry Commission guidance giving detailed information on specific tree pests or diseases known to be present in the UK. You can also find out about those that pose a potential risk to the UK but are not present yet.

Identify by tree species

If you're unsure what's causing the problem, use the alphabetical table below to narrow down the options for the relevant tree species and find out which pests and diseases can affect it.

Once you've found the likely culprit for your tree species, you can read Forestry Commission guidance giving detailed information on that specific pest or disease and how to deal with it.

A

Tree species	Pest or disease names
Alder (Alnus)	Asian longhorn beetle, Phytophthora alni
Apple (Malus domestica)	Citrus longhorn beetle
Ash (Fraxinus species)	Asian longhorn beetle, chalara ash dieback, emerald ash borer

B

Tree species	Pest or disease names
Beech (Fagus species)	Asian longhorn beetle, Citrus longhorn beetle, Phytophthora kernoviae, Phytophthora ramorum
Birch (Betula species)	Asian longhorn beetle, Citrus longhorn beetle

C

Tree species	Pest or disease names
Cedar (Cedrus species)	Pinewood nematode, Sirococcus blight
Cherry (Prunus species)	Asian longhorn beetle, citrus longhorn beetle
Citrus trees (Citrus species)	Xylella fastidiosa
Common ash (Fraxinus excelsior)	Asian longhorn beetle, chalara ash dieback, emerald ash borer
Corsican pine (Pinus nigra)	Dothistroma needle blight
Cypress (Cupressus species)	No significant threats

D

Tree species	Pest or disease names
Douglas fir (Pseudotsuga menziesii)	Phytophthora ramorum, pine-tree lappet moth

E

Tree species	Pest or disease names
Elder (Sambucus nigra)	No significant threats
Elm (Ulmus species)	Asian longhorn beetle, citrus longhorn beetle, Dutch elm disease, elm zig-zag sawfly, Xylella fastidiosa

F

Tree species	Pest or disease name
Field maple (Acer campestre)	No significant threats

G

Tree species	Pest or disease name
Grand fir (Abies grandis)	No significant threats

H

Tree species	Pest or disease names
Hawthorn (Crataegus monogyna)	No significant threats
Hazel (Corylus species)	Asian longhorn beetle, citrus longhorn beetle
Hornbeam (Carpinus species)	Asian longhorn beetle, citrus longhorn beetle
Horse chestnut (Aesculus hippocastanum)	Asian longhorn beetle, citrus longhorn beetle, horse chestnut leaf miner, Phytophthora ramorum

J

Tree species	Pest or disease name
Juniper (Juniperus communis)	Phytophthora austrocedri

L

Tree species	Pest or disease names
Larch (Larix species)	Phytophthora ramorum, pinewood nematode, pine processionary moth
Lawson cypress (Chamaecyparis lawsoniana)	Phytophthora austrocedrae, Phytophthora lateralis
Lodgepole pine (Pinus contorta)	Dothistroma needle blight, pinewood nematode, pine processionary moth

M

Tree species	Pest or disease names
Maple (Acer saccharum)	Asian longhorn beetle, citrus longhorn beetle, sweet chestnut blight
Mountain ash or rowan (Sorbus aucuparia)	Asian longhorn beetle

N

Tree species	Pest or disease names
Narrow-leaved ash (Fraxinus angustifolia)	Asian longhorn beetle, chalara ash dieback, emerald ash borer
Noble fir (Abies procera)	No significant threats
Norway spruce (Picea abies)	Great spruce bark beetle, 8-toothed spruce bark beetle, pine-tree lappet moth, pinewood nematode

O

Tree species	Pest or disease names
Oak – holm (Quercus ilex)	Sweet chestnut blight, oak pinhole borer, oak processionary moth, Phytophthora kernoviae

Tree species	Pest or disease names
Oak – northern red (Quercus rubra)	Xylella fastidiosa
Oak – pedunculate or ‘English’ (Quercus robur)	Acute oak decline, Asian longhorn beetle, sweet chestnut blight, oak pinhole borer, oak processionary moth, Phytophthora kernoviae, Xylella fastidiosa
Oak – sessile (Quercus petraea)	Sweet chestnut blight, oak pinhole borer, oak processionary moth
Oak – turkey (Quercus cerris)	Phytophthora ramorum
Olive (Olea europaea)	Xylella fastidiosa

P

Tree species	Pest or disease names
Pear (Pyrus species)	Citrus longhorn beetle
Pine – Corsican (Pinus nigra)	Dothistroma needle blight
Pine – lodgepole (Pinus contorta)	Dothistroma needle blight, pinewood nematode, pine processionary moth
Pine – Scots (Pinus sylvestris)	Dothistroma needle blight, pine-tree lappet moth, pinewood nematode
Plane (Platanus species)	Asian longhorn beetle, citrus longhorn beetle, Xylella fastidiosa
Plum (Prunus species)	Asian longhorn beetle
Poplar (Populus species)	Asian longhorn beetle, citrus longhorn beetle

R

Tree species	Pest or disease name
Rowan or mountain ash (Sorbus aucuparia)	Asian longhorn beetle

S

Tree species	Pest or disease names
Scots pine (Pinus sylvestris)	Dothistroma needle blight, pine-tree lappet moth, pinewood nematode
Spruce – Norway (Picea abies)	Great spruce bark beetle, 8-toothed spruce bark beetle, pine-tree lappet moth, pinewood nematode
Spruce – Sitka (Picea sitchensis)	Great spruce bark beetle, 8-toothed spruce bark beetle, pine-tree lappet moth, pinewood nematode, Phytophthora ramorum
Sweet chestnut (Castanea sativa)	Sweet chestnut blight, Oriental chestnut gall wasp, Phytophthora ramorum
Sycamore (Acer pseudoplatanus)	Asian longhorn beetle

W

Tree species	pest or disease names
Western hemlock (Tsuga heterophylla)	Sirococcus blight
Western red cedar (Thuja plicata)	Sirococcus blight
Willow (Salix species)	Asian longhorn beetle, citrus longhorn beetle

Y

Tree species	pest or disease name
Yew (Taxus baccata)	Phytophthora lateralis

Note: this list of trees is not exhaustive.

Request a diagnosis

The information in the table above is not exhaustive. You may discover a different pest or disease attacking your trees and you should report it or request a diagnosis from Forest Research's Tree Health Diagnostic and Advisory Service. There might be a fee for this service.

Detailed guide: Report a tree pest or disease: overview

Understand which tree pests or diseases are notifiable

Some tree pests and diseases are notifiable, which means that, in England, they must be reported to the Forestry Commission or the Animal and Plant Health Agency (APHA).

Notifiable tree pests and diseases are the ones that have the potential to cause the greatest damage to our trees, woods and forests. See the downloadable matrix
(PDF, 201KB, 2 pages)

to find out which ones are notifiable. The matrix also includes a quick guide to how each pest and disease is spread, and whether disinfectant should be used after working with affected material.

Anyone can report a notifiable pest or disease. Reports from the public are valuable. They supplement the Forestry Commission's annual surveys.

The preferred way to make a report is with Tree Alert, the online pest and disease reporting tool. Note that Tree Alert requires you to upload good quality photographs.

You can use Tree Alert to report suspected pests and diseases found anywhere in the UK. Reports from Scotland and Wales will be passed to Forestry Commission Scotland and Natural Resources Wales for follow-up.

Report suspected cases in Northern Ireland to the Northern Ireland Forest Service using TreeCheck, the all-Ireland pest and disease reporting tool.

Note that reports of tree pests and diseases in trade locations, such as nurseries, should be reported to the Animal and Plant Health Agency (APHA).

What to expect if you make a report

The report will be acknowledged and you may be contacted again if further detail is required. If a notifiable pest or disease is confirmed, the Forestry Commission's response will be one of the following:

- plot the location so it can inform local tree and woodland managers of its presence, and advise them how best to manage it
- take action to prevent or minimise spread of the pest or disease to other areas
- take action to eradicate the pest or disease before it can become established and spread

Get involved in monitoring tree health

Visit Observatree if you would like more information about monitoring the health of the UK's trees. You can only join Observatree if you're selected to do so but you'll find a range of helpful resources available on their website.