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Phytophthora ramorum on larch

2021 update

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Scottish Forestry

September 2021

Scottish Forestry is the Scottish Government agency responsible for
forestry policy, support and regulation

S e Coilltearachd na h-Alba a' bhuidheann-ghnìomha aig Riaghaltas
na h-Alba a tha an urra ri poileasaidh, taic agus riaghladh do choilltearachd



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P. ramorum

Regulated disease - Obligation to control the spread

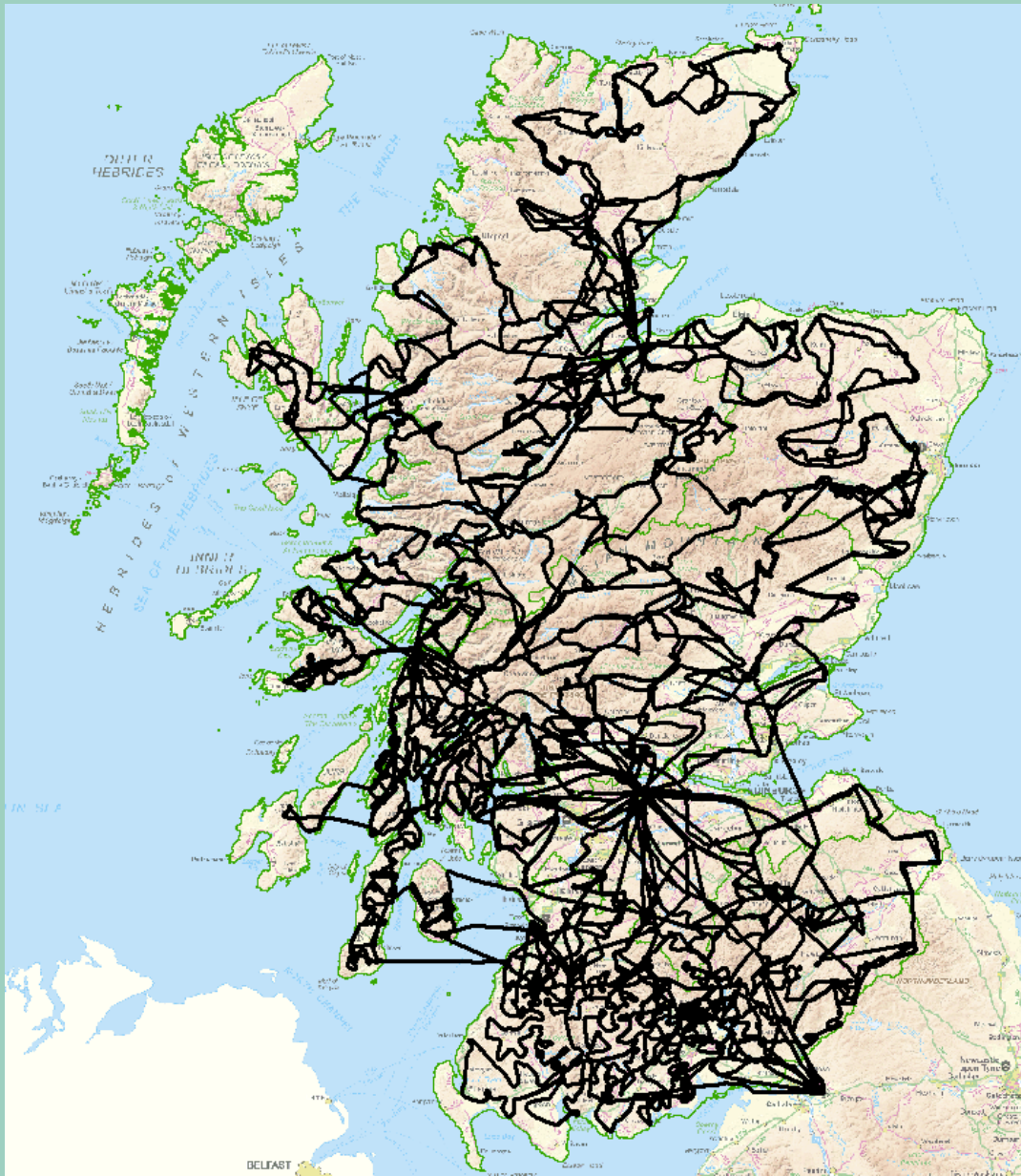
Additional risks to non-larch species

Hybridisations, mutations, host jump, specific weather conditions driving surges

Infections on spruce have been found but limited to twigs branches and no evidence of spread to main stem or reinfection, also seen on regen with frost damage. Only on sites with significant larch infection present



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Phytophthora ramorum on larch





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Swift action is the only effective control, see recently revised [SF Action Plan](#) for more details



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***P. ramorum* on Larch**

Policy review completed over winter 2020 – 2021

By a group from the Scottish Tree Health Advisory Group (STHAG)

Including CONFOR, FLS, FR, SASA and SF representatives

Key objectives and outcomes included

- Prioritisation of sector resources for greatest control effect
- Identify where SFM can be better balanced with Tree Health requirements (RRZ)
- Simplify wherever possible
- Improved communications – this presentation is part of that

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Scottish Forestry - Phytophthora ramorum in Scotland



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Phytophthora ramorum on larch Action Plan June 2021

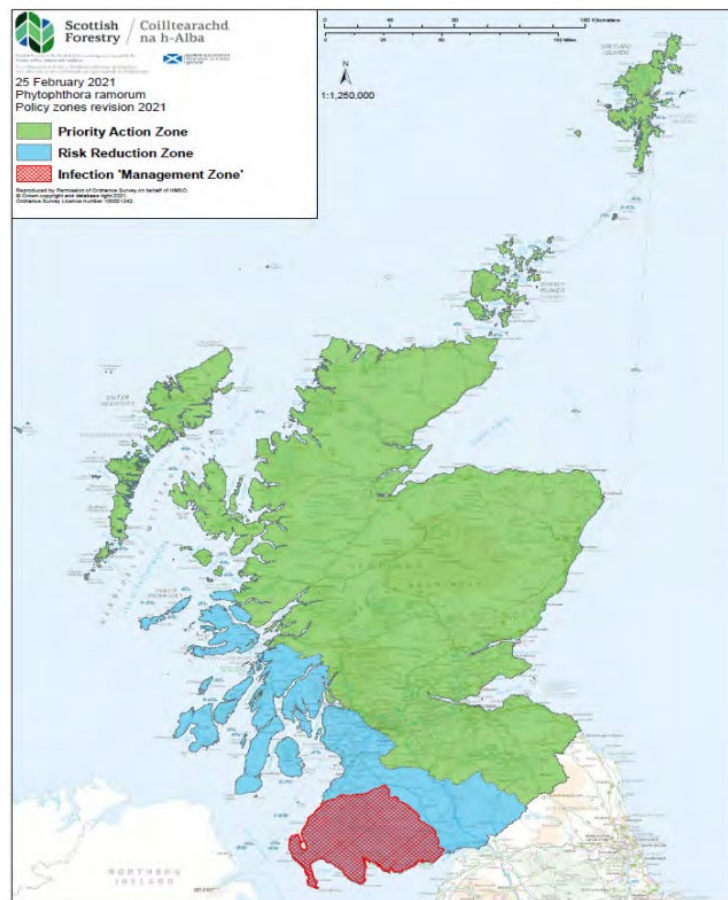


Review Date;	June 2022	Review Date;	
Review Date;		Review Date;	



Appendix 1 – Zone maps

Map of the policy zones for *P. ramorum* on larch in Scotland.
A more detailed map can be accessed via the [Scottish Forestry map viewer](#).





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P. ramorum on Larch - Priority Action Zone

- The **Priority Action Zone (PAZ)**

Is the area where actions will have the greatest impact on controlling spread of *P. ramorum*. Outbreaks to date have been limited in scale and control efforts have been successful at eradicating infections on larch. See table 1 for annual breakdown of historic SPHNs that would have been covered by the new zones, figures do not cover the area that became the MZ in 2014. Prioritisation of survey and regulatory efforts will ensure Statutory Plant Health Notices (SPHNs) are issued quickly, with felling required, wherever possible, before the end of August in the year of detection.

This area contains roughly 2/3 of Scotland's larch resource, including areas like Speyside and Deeside where larch may still have a long term future. Parts of Eastern Scotland also have a significantly greater proportion of larch in the stocked forest area, with [NFI figures](#) showing larch comprising over 14.8% of the stocked conifer area in Tayside and Fife compared to the national average of 7.6%.

In the PAZ the majority of sites are very limited in terms of symptoms and often only a single tree or branch.

However we are expecting, and have seen, some locations showing disease symptoms at larger scale, these are all in areas where the climate is potentially favorable and are in close proximity to known infections or on the edge of the RRZ.

In the PAZ these areas are limited and should be where we are targeting response efforts.

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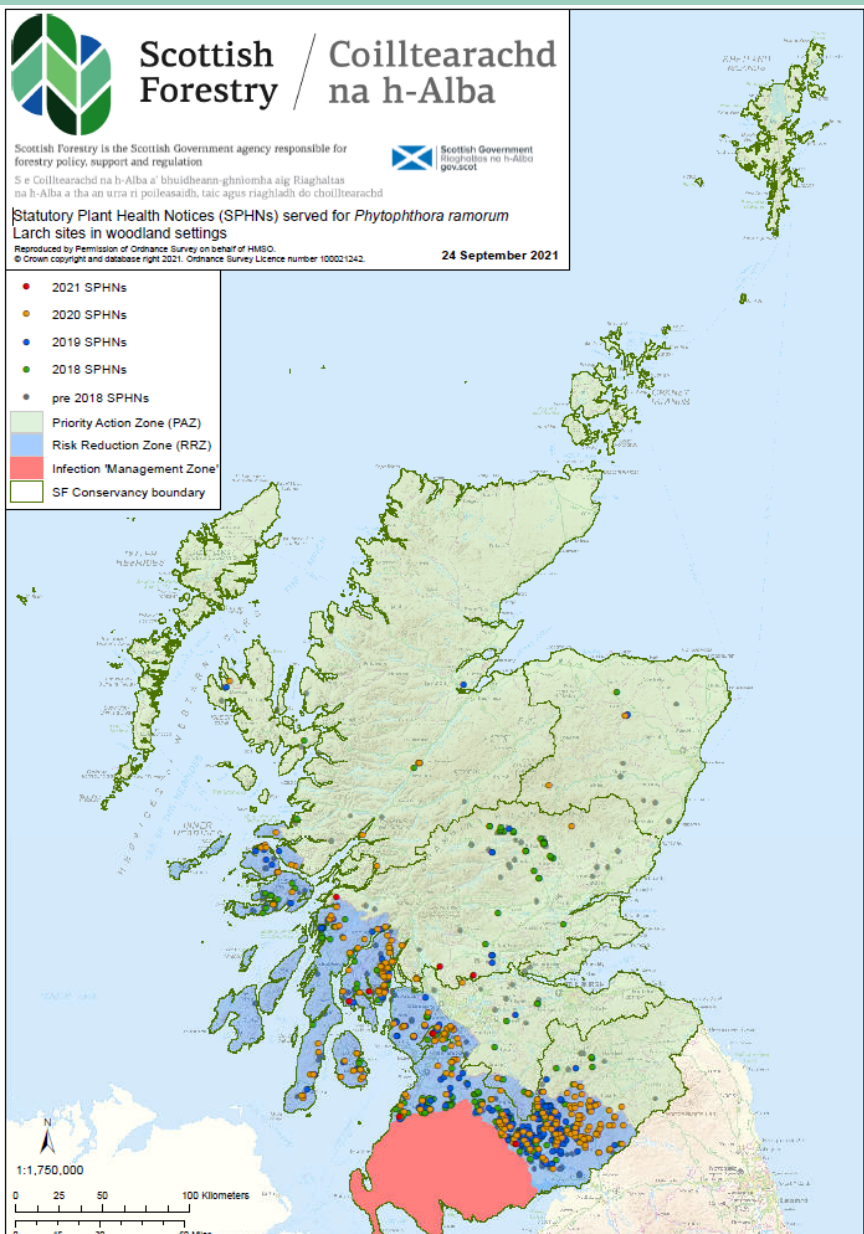
Annual review of the zones before SPHNs issued



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P. ramorum on Larch – Priority Action Zone



In the PAZ some SPHNs already issued plus a number in process with the Conservancy teams

Late season surveys currently underway but notable outlying infections found in 2021 include

1 site in Aberdeenshire
2 sites in Ardnamurchan
A cluster in Carron valley area
1 site in the Borders

PAZ area infections are often cryptic and require lab testing

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***P. ramorum* on Larch - PAZ**

- Felling of SPHNs in the PAZ needs to be complete before start of March the following year for effective disease control
- Exceptions are detailed in the Action Plan but these should only be used if necessary and only on the parts of an SPHN site where the relevant issues prevent rapid action
- The longer infected trees are left standing the greater the risk to neighboring trees / landowners
- Healthy looking trees can still be infected and act a source of spores, this is one of the reasons for felling a buffer zone
- UKFS Non-compliance proceedings will be used where necessary



PAZ situation in 2021

normal year

Most of Scotland's larch resource

Vast majority is healthy

So far roughly 75% of suspect sites identified from reports or aerial survey are not *P. ramorum*



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***P. ramorum* on Larch**

- **The Risk Reduction Zone (RRZ)**

Is the area where spread and scale of infection is beyond what can be controlled locally with available resources. The principal aim is now to reduce the risk of *P. ramorum* to the sector.

Statutory actions in the form of SPHNs will continue to be used as the main tool to ensure consistency of control efforts across the range of land ownerships. Timescales for felling will not be as short as in the PAZ (typically a year or more from initial detection to required SPHN felling date will be acceptable).

Few SPHNs currently showing on the update map as these will be issued once final survey results are in, this will allow SPHNs to be issued at scale appropriate for the seasonal spread.

Managers / owners are made aware as results are confirmed to allow for pre planning. Generally allowing about 12 months from initial notification of infection to compliance date (before late summer sporulation the following year)

SPHNs have been issued to allow for felling this summer if appropriate

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***P. ramorum* on Larch RRZ**

To early to see if the intention of better balance with principles of sustainable forest management has been met

Aspiration for all larch to be removed in the RRZ, ideally before infection arrives requiring SPHN

Obligation to control spread but allowing additional 6 to 12 months to allow for mixed objectives to be met

Challenge of this lies with forest managers being prepared



***P. ramorum* on Larch**

- The ***P. ramorum* Management Zone (MZ)**

Is maintained in the way it was set up in 2014, with SPHNs only used in exceptional circumstances.

[The Plant Health \(Forestry\) \(Phytophthora ramorum Management Zone\) \(Scotland\) Order 2014 \(legislation.gov.uk\)](#)

Many of the principles in the RRZ apply in the MZ

SPHNs only on sites where risk merits extra precaution – potential host shift for example

Again assumption that all larch should be felled



***P. ramorum* on Larch**

Frequently asked Questions document is on our webpage and will be updated to clarify issues

Lots of experience of SPHNs within the conservancy teams

Any issues need to be flagged early to the Conservancy

Understanding and managing risk

Landscape scale



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P. ramorum symptoms on Larch



25.06.2013 13:53



Satellite monitoring ... not quite fine enough ... yet

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ENGLISH

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Visualize

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Pins

Dataset: Sentinel-2 L2A

Show L1C

Date: 2021-06-01

Timespan

True color
Based on bands 4,3,2

False color
Based on bands 8,4,3

NDVI
Based on combination of bands $(B8 - B4)/(B8 + B4)$

False color (urban)
Based on bands 12,11,4

Moisture index
Based on combination of bands $(B8A - B11)/(B8A + B11)$

Free sign up for all features

Powered by Sentinel Hub with contributions by ESA

v3.3.4

URBAN GROWTH IN AFRICA CUSTOM SCRIPT CONTEST

CONTRIBUTE YOUR IDEAS! ONGOING UNTIL JULY 25TH 2021.

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Ae

Lat: 55.20668, Lng: -3.52163



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Resilience?



ot



EU1 vs EU2?

Plenty of anecdotal evidence of apparent difference in speed or 'aggression' of infection between the two lineages

Behavioural differences are greater between 'bad' and 'good' years driven by favourable or unfavourable local weather conditions

Also apparent difference between ability to disperse (EU1 appears to be more mobile but this may relate to a historic prevalence in horticultural trade)

No evidence to support regulating or responding differently



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COVID-19

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Keep it clean, protect our forests

Home > Sustainable Forestry > Tree Health > Biosecurity

Tree Health

Tree Pests and Diseases

Biosecurity

FAQ

Biosecurity for tree professionals,
landowners and managers

Tree pests and diseases information
series for young people

UK Forestry Standard (UKFS)

Woodland Carbon Code

Economic Research

Find out more about the threats facing our forests and woodlands in the [tree pest and disease information sheet series](#) for children and young people.

Our forests are at risk from [tree pests and diseases](#). These can dramatically affect the health of our trees, upsetting the delicate ecosystem balance and devastating large areas of woodland.

Pests and diseases hitch a ride in mud and debris on shoes, paws and tyres, ending up in new forests. Here, they can spread rapidly in environments with no natural resilience.

We're doing everything we can to tackle these challenges, but we need your help too.



Don't
give tree pests
and diseases
an easy ride

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Biosecurity kit and leadership



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Thank you for listening

Any Questions?

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Ips typographus

(Larger eight toothed European spruce bark beetle)

- Serious pest of Norway spruce in Europe
- Recently established populations are under eradication in Kent
- Insects flying (wind assisted) over the channel from heavily infested woodlands
- Risk to Sitka is not well understood, stressed trees likely to be more susceptible

[Larger eight-toothed European spruce bark beetle - Ips typographus - Forest Research](#)

[Larger eight-toothed European spruce bark beetle \(Ips typographus\) - GOV.UK \(www.gov.uk\)](#)

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Resources

Larger eight-toothed European spruce bark beetle (*Ips typographus*)

SECTION
Past and disease resources

Acute oak decline
Anthracnose of plane (*Aplophora veneta*)
Asian longhorn beetle (*Anoplophora glabripennis*)
Ash dieback (*Hymenoscyphus fraxineus*)
Bleeding canker of Horse Chestnut (*Pseudomonas syringae* pv. *aesculi*)
Bronze birch borer (*Agrylus annus*)
Canker stain of plane (*Ceratocystis platani*)
Chronic oak decline / dieback
Citrus longhorn beetle (*Anoplophora chinensis*)
Conifer root and butt rot (*Heterobasidion annosum*)
Dothistroma needle blight (*Dothistroma septosporum*)
Dutch elm disease (*Ophiostoma novo-ulmi*)
Elbow-patch crust of plane (*Fomitiporia punctata*)
Elm zigzag sawfly (*Aprionus leucopoda*)
Elm yellows (*Candidatus Phytoplasma ulmi*)
Emerald ash borer beetle (*Agrius planipennis*)
Gypsy moth (*Lymantria dispar*)
Great spruce bark beetle (*Dendroctonus micans*)
Green spruce aphid (*Flatobium abietinum*)
Horse chestnut leaf miner (*Cameraria ohridella*)
[Larger eight-toothed European spruce bark beetle \(*Ips typographus*\)](#)

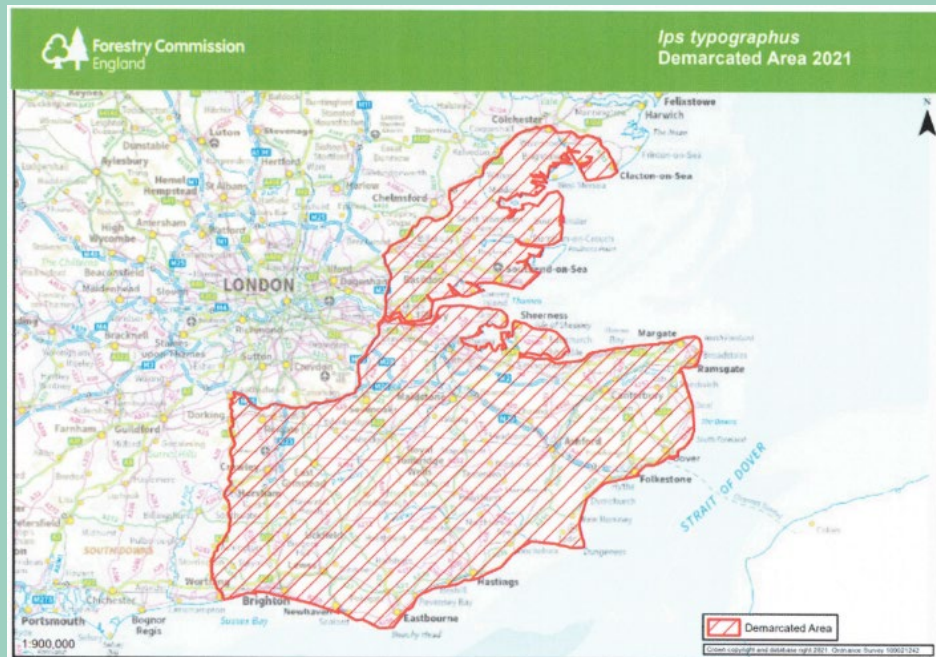
Present in UK

Notifiable – see 'Report a sighting' below

Scientific name – *Ips typographus*



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Pest Free Area (PFA)

D. micans,

Ips sexdentatus

Ips cembrae (Larch)

and 3 other bark beetles of
conifers (including *Ips*
typographus)

Allows continued trade of spruce logs
from the designated area to Ireland –
annually this is something in the order of
¼ million cubic meters of timber

Establishment of a population of *D. micans*
in this area would result in loss of trade to
Ireland

Movement of potentially infested material
into the Pest Free area needs to be
prevented



Forestry Commission

Stop the spread of bark beetles into west Scotland

The green zone on the map shows the area in the west of Scotland that has been designated as 'Pest-free' because it is free of certain forestry pests. Some pests – such as the great spruce bark beetle and the six-toothed bark beetle – are found in England and Wales but have not yet reached Scotland. The large larch bark beetle can be found in other parts of Scotland and in England but it has not yet spread into this area.

Maintaining this pest-free status is important for our forest industry – timber from the green zone can be shipped to markets in Ireland and Northern Ireland without the need to remove bark from the logs. Help us to protect the pest-free area by taking two simple precautions:

Clean lorries and forestry machinery of all plant debris – especially loose bark and branch wood or chips before starting your journey.

Check lorries and forestry machinery again on arrival at the pest-free area. Remove and safely dispose of bark and wood debris.

Spruce up! And keep bark beetles out.

For more information on bark beetles and other forest pests visit:
www.forestry.gov.uk/planthealth or telephone: 0131 314 6414

Spruce up! Ditch the debris

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