

Planting in native pinewoods: reducing risks from Dothistroma Needle Blight

Summary of key messages for pinewood managers

- Planting pine within any of the Caledonian Pinewoods Inventory (CPI) areas carries some risk of introducing infection with DNB and/or new strains that could make any existing infection worse.
- There is a temporary presumption against further planting of pine species in all three CPI zones (core, regeneration and buffer zones) to minimise these risks. This will be reviewed in 2015 in the light of experience and greater knowledge of the occurrence of DNB in native pinewoods.
- If you have plans to plant Scots pine (SP) in a CPI area, you should consider whether you can change these, for example to promoting natural regeneration instead. FCS can help you to consider options, but will honour existing contractual commitments for grant aid.
- If you do still wish to proceed with planting SP, you should take measures to minimise risks, including monitoring the young trees and removing infected stock. FCS may be able to help with assessing disease presence in the first growing season.
- If you proceed with planting and DNB infection does develop you should remove and destroy all trees of the same batch (from the same nursery). FCS may be able to help with support for costs in cases where contracts were approved before this guidance was issued.
- No pine species other than Scots pine should be planted in the CPI areas including buffer areas. Existing areas of lodgepole pine (LP) in these areas should be phased out as LP stands appear to have a high risk of harbouring DNB infection - they should not be replanted with LP.
- Where CPI areas are also designated for their pinewood features as SSSIs or SACs, you will need to ask SNH for their view on your proposals in relation to designated interests.

Planting in native pinewoods: reducing risks from DNB

Introduction

This guidance note is intended to give guidance to land managers about:

- the potential risks of increasing Dothistroma Needle Blight (DNB) infections and impacts that may result from planting pine species in or near to native pinewoods;
- the actions they can take to avoid or reduce these risks, and
- the help that FCS can offer.

Background

DNB is a serious fungal disease of pine trees which has become established in the UK over recent years. It attacks all pine species grown in Scotland including our native Scots pine. Two mating types and multiple genotypes of the pathogen, *Dothistroma septosporum*, are known to be present in Scotland.

Action is underway to tackle the threats posed by DNB and a strategy and [action plan](#) have been developed at UK and Scottish levels respectively. So far the main impact of DNB infection has been in planted stands of pine, and survey work has steadily improved our picture of this since 2008. However some records have been found in and around native pinewood sites.

A programme to protect the unique native pinewoods resource from DNB is now being developed, as it has become increasingly clear that Scots pine is vulnerable to DNB. A stakeholder group was set up in early 2013 to oversee this programme, led by FCS and SNH. As well as this guidance on planting it will include development of a surveillance programme and a package of advice and support for management of native pinewoods to increase their resilience.

Native pinewoods and the Caledonian Pinewoods Inventory

Native (Caledonian) pinewoods are protected as habitats of European importance (EU Habitats and Species Directive), and they are listed as UK priority habitats. They have been protected since the late 1980s. The Caledonian Pinewoods Inventory (CPI) was published by FC in 1994. The CPI included 82 sites and around 18,000ha of pine woodland. Each site was mapped with 3 zones: core areas of woodland, a variable regeneration zone of around 100 metres and an outer buffer zone of 500 metres width. The buffer zone was intended to prevent planting of genotypes of SP other than suitable local origins, so that genetic integrity of the native pinewoods would be safeguarded. It also provides a long term expansion zone.

Planting in native pinewoods: reducing risks from DNB

Some buffer zones include areas of established planted Scots pine, lodgepole pine plantation and more recent new native pinewood woodland planting schemes.

More recently, the Native Woodland Survey of Scotland has surveyed all areas of native pine. This will be used to update the CPI maps and will inform revision of this guidance in 2015.

Risks to native pinewoods from planting pine

A hygiene programme is in place to minimise the risks of nurseries harbouring DNB and ensure planting stock is DNB-free as far as possible.

However there remains a risk that DNB can be introduced to new areas on infected nursery stock. Even where DNB is already present in the vicinity, there is a risk that planting could introduce other genetic strains of DNB to native pinewoods. This could increase the chances of genetic exchange and increased virulence of the disease.

The width of the combined regeneration and buffer zone averages 600m. This matches the estimated dispersal range of DNB spores, so that avoiding planting pine stock within any part of the CPI areas (including buffer zones) would minimise the chance of infection reaching the core pinewood stands.

Guidance on planting near native pinewoods

Survey and research efforts over the next few years should help us understand the distribution of DNB and the implications of having different genotypes in an area, and how successful nursery hygiene measures have been in reducing the risks of planting stock carrying infection.

Meantime Forestry Commission Scotland, Scottish Natural Heritage and the Native Pinewoods and DNB Stakeholder Group have decided that there should be ***a temporary presumption against planting of Scots pine, or any other pine species within CPI areas, including core, regeneration and buffer zones.*** This policy will apply for a period of at least 2 years, and will be reviewed in 2015 in the light of our increasing knowledge of DNB and its management. FCS will follow this guidance on the National Forest Estate.

There may be exceptional cases during this 2 year period where FCS may still support planting, eg:

- where planting is contractually committed, **or**
- where there is an urgent need to regenerate during this period, no other native species is suitable for the site type, **and** where natural regeneration of SP has been demonstrated not to work, **or**

Planting in native pinewoods: reducing risks from DNB

- where the planting stock is derived from seed that has been gathered and grown at the proposed planting site.

Where any planting does occur within CPI areas, follow-up inspection of the young trees in the first growing season is strongly recommended, together with subsequent removal of any infected batches of plants.

Sites with grant-aid commitments to plant Scots pine

Where contractual commitments for grant aid have been made, FCS will honour these but will also seek to explore alternative options with grant applicants.

Alternatives may include revising plans (eg delay, use alternative species or natural regeneration).

If you decide to proceed with planting Scots pine in a CPI area, you should take measures to reduce the risk of DNB being introduced, including:

- discuss DNB precautions with the supplying nursery and inspect plants on delivery for any symptoms of DNB;
- carry out sample survey of plants after planting to detect any symptoms of DNB;
- if infection is found all pine plants from the same supplying nursery should be removed and disposed of by burying or burning.

For planting in 2013 which has already taken place or is imminent, FCS will be able to support land managers by carrying out survey work to detect symptoms of DNB on the young pine trees in the summer of the first growing season (July/August 2013).

Where any confirmed positive case is found in such surveys FCS will recommend removal of the whole batch obtained from the same source nursery because it will be likely that such infection would have come with the plants from the nursery. *FCS may be able to help towards the costs of this removal of infected plants and with the subsequent natural regeneration or replanting with alternative non-pine species.*

Use of natural regeneration

In the CPI areas, policy since the 1980s has been to prefer and *encourage natural regeneration of Scots pine in and around the core areas to maintain the predominantly semi-natural character* of most of the remnant native pinewoods. The risks from DNB further emphasise the need for natural regeneration to be promoted wherever possible.

Planting in native pinewoods: reducing risks from DNB

Because it enables genetic adaptation through natural selection, natural regeneration is also vital to *encourage the adaptation of native pinewood ecosystems to climate change and increase their resilience to threats* including future plant diseases or pests.

There has been limited uptake of grant support for natural regeneration during the present Scottish Rural Development Programme. FCS will work with the Native pinewoods and DNB Stakeholder Group and others to assess how this can be improved in SRDP2.

Other measures to protect native pinewoods from DNB

Survey of DNB infection in existing native pinewoods

In 2013 FCS and SNH are developing a programme of survey for DNB in native pinewoods, to assess the presence of DNB in existing stands of pine in CPI areas. Results from this will be used to review this guidance in 2015.

Phasing out Lodgepole pine in CPI areas

Further advice will be provided by the DNB and native pinewoods group on phasing out lodgepole pine in CPI areas. The priority should be to remove areas of greatest risk as soon as opportunities allow. Decisions on replanting of these areas will need to factor in peatland and carbon issues (lodgepole pine was sometimes planted on deep peat pockets). Where replanting is suitable, broadleaves such as downy birch and rowan could be considered, as well as promoting natural regeneration of Scots pine.

Building future resilience by promoting other native species.

The diversity of other characteristic tree and shrub species in native pinewoods is often inhibited as a result of past or present management. The risk from DNB to the dominant tree, Scots pine, increases the urgency and importance of increasing the component of other native species characteristic of the ecosystem, such as birches, rowan, bird cherry, alder, sessile oak, aspen, holly and native willows.

Doing this should also help biodiversity aims and enhance adaptation to climate change.

Natural regeneration is preferable where possible for these species as well as for Scots pine (to promote adaptation by natural selection), but where they have been eliminated, some planting may be needed to re-establish breeding populations of these species in an acceptable timescale.

Planting in native pinewoods: reducing risks from DNB

Provenance choice is an important consideration - see FCS guidance note: [Seed sources for planting native trees and shrubs in Scotland](#).

Further advice on practical methods of promoting natural regeneration of native pinewoods can be found in the handbook *Managing the pinewoods of Scotland* (FC 2004).

Protecting pinewoods outside the Caledonian Pinewoods Inventory areas

A degree of protection may also be considered in future for other areas of 'native pinewood' which are not on the CPI, such as new native pinewoods schemes and areas revealed by the Native Woodland Survey of Scotland (NWSS) to have native pinewood characteristics and high semi-naturalness. The need for this will be reviewed in 2015 when NWSS is published and in the light of initial experience of this guidance.