

## **DOTHISTROMA NEEDLE BLIGHT ACTION PLAN – SCOTLAND (2013/14)**

### **Context**

Actions for the health and biosecurity of Scotland's trees, woods and forests are set within the overarching, sustainable forest management principles set out in the UK Forestry Standard<sup>1</sup> and the Scottish Forestry Strategy<sup>2</sup>.

Sound evidence is a prerequisite for tree health actions. Scotland is well placed to provide this through its existing research providers and through the Scottish Government's support for joint strategic research initiatives such as the LWEC Tree Health and Plant Biosecurity Initiative<sup>3</sup>.

This Action Plan supports delivery of the DNB GB Strategy<sup>4</sup> which is set within the context of the Forestry Commission's Interim Tree Health Bio security Strategy<sup>5</sup> and the Defra/Forestry Commission Action Plan for Tree Health and Plant Biosecurity<sup>6</sup>. It relates to all pine and other susceptible species. Its delivery will be dependent on a wide range of partners in the state and private sectors, NGOs and the third sector.

The Plan will be reviewed annually.

### **Current situation**

The fungal disease DNB (Dothistroma needle blight) is present throughout Scotland, with the impacts currently being most apparent in the north and north east. Although it affects a large number of conifers, pine is the most commonly affected with 86 of the 129 pine species in the world currently known to be susceptible to some degree. The current extent of pine woodland in Scotland is some 265,000 ha and some 12,500 ha is currently known to have been infected with DNB on the national forest estate alone. The principal species currently infected are, lodgepole pine, Scots pine and Corsican pine. The impacts on timber yields are currently most severe on Corsican pine and lodgepole pine (particularly those of 'Inland' origin), and pine trees killed by DNB can become unmarketable over time. Mature pine in Caledonian pinewoods

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1 [www.forestry.gov.uk/ukfs](http://www.forestry.gov.uk/ukfs)

2 [www.forestry.gov.uk/sfs](http://www.forestry.gov.uk/sfs)

3 [www.lwec.org.uk/node/512](http://www.lwec.org.uk/node/512)

4 [www.forestry.gov.uk/pdf/DNBStrategy11-04-2012.pdf/\\$file/DNBStrategy11-04-2012.pdf](http://www.forestry.gov.uk/pdf/DNBStrategy11-04-2012.pdf/$file/DNBStrategy11-04-2012.pdf)

5 [www.forestry.gov.uk/pdf/TreehealthStrategyMinisters.pdf/\\$FILE/TreehealthStrategyMinisters.pdf](http://www.forestry.gov.uk/pdf/TreehealthStrategyMinisters.pdf/$FILE/TreehealthStrategyMinisters.pdf)

6 [www.defra.gov.uk/food-farm/crops/plant-health/action-plan/](http://www.defra.gov.uk/food-farm/crops/plant-health/action-plan/)

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currently appear to be less susceptible to the disease but there is concern that this could change as there is considerable potential for genetic exchange due to the presence of two mating types, a high number of genotypes of *Dothistroma septosporum*, and the possible introduction of *D. pini*. Since 2010, *D. septosporum* has been found at a number of pine producing nurseries in Scotland, leading to the introduction of a two-year forest tree nursery transition scheme in 2011 to support resilience building in that sector. A DNB and Native Pinewoods working group has been established by Forestry Commission Scotland to develop a surveillance strategy, and guidance on response options for native pinewoods.

### **Strategic objectives**

Minimise the economic impacts of DNB, reduce the collateral damage from other pests and diseases, protect the environmental, social and economic functions of Caledonian and other high biodiversity value pinewoods, and support continuation of pine silviculture to help secure the long term sustainability of Scottish forestry.

### **Action Plan**

#### **Research**

Support work to:

- Develop a better understanding of the etiology, pathology and epidemiology of DNB in Scotland.
- Identify alternative species, including other less susceptible pine species, to aid planting and replanting decisions.
- Identify if there are less susceptible provenances of lodgepole pine and Scots pine.
- Identify if there are less susceptible, or potentially resistant, individual pine trees in Scotland that could aid molecular work on resistance and which might provide future breeding potential for 'resistance durability'.
- Assess the feasibility of a Scots pine seed-bank resource for Scotland.
- Investigate alternative, cost-effective surveillance techniques (eg use of remote sensing).
- Develop rapid diagnostic techniques for the disease.
- Evaluate the impacts of spraying (and not spraying) fungicides for DNB in different woodland types as part of a risk based approach to disease management.
- Initiate, subject to impact evaluation, field-scale trials of cost-effective treatments for DNB on pine, including chemical treatments and aerial application.
- Initiate field-scale trials of other measures to increase resilience (e.g. thinning, respacing, brashing, high pruning).
- Understand the wider biodiversity implications of DNB and consider ways to mitigate negative impacts.

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### ***Detection***

- Maintain annual surveys of disease presence on the national forest estate, including Caledonian pinewoods, and monitor changes in disease severity over time.
- Under the guidance of the DNB & Native Pinewoods Working Group, initiate annual surveys to monitor presence, absence, extent and impact in the Caledonian pinewoods out-with the national forest estate.
- Assess effectiveness of helicopter surveillance and consider future deployment.
- Continue to encourage and train the private sector to undertake regular DNB surveys (presence and severity).
- Continue annual nursery inspections in Scotland.

### ***Precautionary measures***

- Destruction of infected plants at nurseries.
- Provide advice and support to nurseries on minimizing disease risk and on transition to alternative species.
- Within Caledonian Pinewood Inventory sites, including their buffer areas:
  - operate a presumption against planting Scots pine or any other pine species; Review in 2015/16;
  - encourage the use of natural regeneration (of all native species);
  - encourage the removal of the most susceptible pine species;
  - develop, through the DNB & Native Pinewoods Working Group, a 'toolbox' for other precautionary management measures.
- On the national forest estate: apply the above measures in Caledonian Pinewood Inventory sites; maintain moratorium on planting Corsican pine and some origins of lodgepole pine; and within 550m of pine stands where DNB has not been detected, or pinewoods of high biodiversity value, maintain moratorium on planting any Scots pine from infected nurseries.
- Align current support measures with the FES approach to pine planting.
- Consider financial support measures for disease management (including opportunities in the next Scotland Rural Development Programme).
- Explore the feasibility of a pine import notification scheme in Scotland.

### ***Dealing with infected stands***

- Reprioritisation of harvesting programmes on the national forest estate to speed up removal of trees from infected areas to: reduce inoculum pressure; reduce the risk of colonisation by other pests, diseases; reduce fire hazard (due to large areas of dead and dying trees); and to secure revenue streams from wood products. Consider use of natural regeneration for pine restocking on national forest estate where feasible.

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- Through the Scottish Timber Market Impacts Group explore the implications of DNB for the production and marketing of timber from Scottish forests in the short term and over the next twenty-five years.

### ***Awareness-raising***

- Align DNB within a refreshed FCS communication strategy for tree health issues in Scotland.
- Support regular tree health seminars in Scotland to raise awareness of this and other tree pests and diseases.
- Engage the Christmas tree sector in the management of DNB.
- Publish guidance on managing DNB-infected woodland.
- Promote proportionate biosecurity measures for DNB.
- Explore the feasibility of introducing a chain of custody protocol (from seed to forest) for pine plants.
- Encourage the private sector to take disease management measures similar to those used on the national forest estate.
- Publish a broad assessment of the potential environmental, economic, landscape and social impacts of DNB in Scotland.

**Forestry Commission Scotland  
27 March 2013**