

**Report on the 2006 Forestry Commission Forest Condition
Phytophthora Survey to Assess the Level of Incidence of *Phytophthora*
ramorum and *Phytophthora kernoviae* in Great Britain**

**Forestry Commission
Plant Health**

Summary

Between June and September 2006, the Forestry Commission undertook its annual Forest Condition Survey (FCS) of woodlands in England, Scotland and Wales to ascertain the health of five species viz. Scots pine, Norway and Sitka spruce, oak and beech¹. While engaged in this survey, surveyors were asked to identify whether *Rhododendron ponticum* was present in or around the plots and if so inspect for signs of *Phytophthora ramorum* and/or *P. kernoviae*. 338 plots were visually inspected and samples were analysed from seven sites with symptomatic plants, but no positives were found.

Background

Phytophthora ramorum is a fungus-like pathogen, which has been identified as the causal agent for the condition known in the USA as Sudden Oak Death. The first evidence of it in Britain was found during April 2002 on a viburnum but since then it has been found mainly on rhododendrons in nurseries and garden centres. In November 2003 the first evidence of an established tree having the disease was confirmed in Sussex. Further infections were subsequently confirmed on trees in historic gardens in Cornwall. Rhododendrons were present on all of these sites.

Between **January and April 2004** the first major Forestry Commission *Phytophthora ramorum* woodland survey was carried out, focusing on locations where rhododendron was found growing in admixture with trees. Britain was divided into high risk and low risk areas based on climatic data. A total of 1348 sites were identified for the survey of which 1217 were high risk sites. In England, 395 sites were surveyed, in Wales, 310, and in Scotland 512. This was complemented by surveys on a further 131 low risk sites in England and Scotland. (NB: all sites in Wales are classed as high risk).

A total of 335 samples showing symptoms of the disease were collected. Samples were sent either to the Central Science Laboratory (CSL) in York or the Scottish Agricultural Science Agency (SASA) in Edinburgh. All samples were tested and found to be NEGATIVE.

Significant areas of infection, however, were identified in Cornwall as part of survey work carried out by Defra's Plant Health and Seeds Inspectorate, including woodlands associated with heritage gardens, and it was decided that the Forestry Commission's woodland survey programme would continue in England and Wales. During **Summer and Autumn 2004**, 109 plots were surveyed in 94 10km grid squares. Samples were taken from 73 locations and none proved positive. During August 19 water bait samples were taken and 3 of these proved positive for *P. ramorum*.

Following the initial 2004 woodland survey we decided that we would not continue with a formal programme of surveys in Scotland, where Pest Risk

¹ Results of the surveys carried out from 2001 can be viewed at <http://www.forestry.gov.uk/website/oldsite.nsf/byunique/ahen-59pc25> following the links at C8.

Analysis indicated a low level of risk, although ad-hoc sampling would be carried out as part of surveyors' normal duties.

During the latter part of 2004, while surveying for *P. ramorum*, a second and previously unknown *Phytophthora*, now formally named *P. kernoviae*, was discovered in Cornwall, affecting rhododendron and some trees. A Management Zone was set up to contain the disease and this is defined in the Plant Health (*Phytophthora kernovii*² Management Zone) (England) Order 2004. A smaller outbreak was later discovered in South Wales, and is subject to eradictory measures. It has also been recorded in a nursery in Cheshire (since eradicated) and, more recently, on a single 150-year old *Rhododendron ponticum* in a historic garden in Cumbria. The infected rhododendron has now been destroyed.

Since the first survey in 2004, the Forestry Commission has undertaken the 1st and 2nd annual **National Re-Survey of Woodlands** as well as a **New Woods Survey in Cornwall** (2005) and a **New Woods Survey in Devon** (2006). The reports for all of these surveys can be found on the Forestry Commission website www.forestry.gov.uk/planthealth

Objective of the Survey

The annual Forest Condition Survey covers England, Scotland and Wales. This survey, therefore, offered an opportunity to add to our knowledge on the status of *P. ramorum* and/or *P. kernoviae* in woodlands in both high and low risk areas England and Wales, and since no formal survey had taken place in Scotland since 2004, an opportunity to determine the status of both pathogens in Scotland.

Sampling Protocol & Timetable

As this was an ad-hoc survey, no formal plan was written for it. Forest Condition surveyors were asked to check whether *R. ponticum* was present, either in or around the Forest Condition plot, and if so, and where time permitted, inspect for signs of *Phytophthora*. A Lateral Flow Device was to be used to check symptomatic plants and if samples were collected, they were to be sent to the CSL in York for analysis for samples collected in England and Wales. Samples collected in Scotland were sent for analysis to SASA in Edinburgh. The surveyor was asked to complete a simple form in which site details, the presence or absence of *R. ponticum* and whether samples were taken were to be noted.

The survey was carried out between **June and September 2006**.

¹ Prior to formal naming, *Phytophthora kernoviae* was referred to both as *P. kernoivii* and *P. Taxon C*

Table 1 Summary of Results

FOREST CONDITION PHYTOPHTHORA SURVEY – ENGLAND & WALES 2006

Total No of FCS plots	No of sites not inspected	FE – no R.p.	FE– with R.p – no symptoms	FE sites with R.p. with symptoms	Other Sites – no R.p.	Other sites with R.p. – no symptoms	Other sites with R.p. – with symptoms
220	2	122	20	3 – all neg	60	12	1 - neg

FOREST CONDITION PHYTOPHTHORA SURVEY – SCOTLAND 2006

Total No of FCS Plots	No of sites not inspected	FE – no R.p.	FE– with R.p – no symptoms	FE sites with R.p. with symptoms	Other Sites – no R.p.	Other sites with R.p. – no symptoms	Other sites with R.p. – with symptoms
121	1	83	10	1 – neg	20	4	2 - neg

Key: FCS = Forest Condition Survey; FE = Forest Enterprise; R.p. = *Rhododendron ponticum*

Conclusion

While only **42** plots of the **338** plots inspected had *R. ponticum*, of which **7** were sampled and were found to be negative, this Forest Condition *Phytophthora* Survey adds to our knowledge of the situation not only in England and Wales but also Scotland which had not been surveyed by the Forestry Commission since early 2004. The data collected confirms the conclusion reached following the 2004 survey that neither *P. ramorum* or *P. kernoviae* has become established in woodlands in Great Britain.

Next Steps

Those plots where *R. ponticum* was present may be re-surveyed in 2007.

Acknowledgement

The Forestry Commission Plant Health Service wishes to acknowledge the full co-operation and support given by the Forest Condition surveyors and also the co-operation given by woodland owners or their managers who were approached for, and readily gave permission to survey their land.

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Appendix I - List of Forest Condition Surveyors

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