Forest Research

Centre for Forestry and Climate Change

The Centre for Forestry and Climate Change investigates the complex interaction between climate change and forests. Our researchers provide high-quality scientific evidence to support policies on the role of woods and forests in mitigating the effects of increased greenhouse gases. Our scientists come from a range of disciplines and work alongside colleagues in Forest Research's two other Centres to make a real impact in this vital area of study. We also provide scientific support for tree health and forest biosecurity issues.

Scope of our work

Our research into climate change aims to help all those involved in trees and woodlands to adapt their management practices in order that our trees are better able to cope with the changing climate. Our role is to co-ordinate Forest Research's climate-related work in order to consolidate information and provide advice on sustainable forest and woodland management practices.

Climate change is an important driver for a number of different aspects of the forest environment and our research incorporates many diverse yet interrelated topics. We carry out research and provide expertise on forest hydrology and forest soil sustainability as well as insect pests and microbial pathogens. Current work on tree health aims to build a greater understanding of existing and potential new threats, appropriate risk management strategies and practical mitigation measures.

Our research doesn't just cover rural environments – trees also have a significant role to play in urban and peri-urban settings, especially in the context of climate change, and we continue a long tradition of research in this area.

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Key research areas

Climate change

Research in this area is founded on an integrated combination of monitoring, experimentation and modelling, drawing heavily on a large infrastructure of environmental science undertaken in British forests. One particular focus of our research takes place at Alice Holt Research Forest in Hampshire, where we are developing a detailed understanding of forest biogeochemistry and greenhouse gas fluxes.

Physical environment

Our research into soil science and forest hydrology forms the basis of an understanding of forest sustainability and the interactions of forests with the wider environment. We have an increasing interest in the carbon dynamics of forests and forest soils, and determining the effects of atmospheric pollution remains an important element of our work.

Woodlands can benefit areas at risk of flooding.

Horse chestnut leaf miner is just one disease being studied.

Tree health

Expertise in entomology and tree pathology is central to our ability to research and provide evidence-based advice on the management of woods and forests subject to a range of pests and diseases. Climate change is increasing the threats facing our woodlands and we are building on our ability to predict, and consider ways of mitigating and managing, these future threats.

Urban greenspace

The roles that trees and woodlands play in urban environments is of increasing importance, especially as we experience changing climates. Our research has already been pivotal in showing how woodlands can be established on brownfield and contaminated land. One new focus is on developing knowledge and decision-support tools to support further establishment of woodland in these areas.

Monitoring and evaluation

On behalf of Forest Research, the Centre co-ordinates the collection and management of long-term environmental and silvicultural datasets relevant to a wide range of scientific disciplines and research programmes. These data are being increasingly used to support climate change research, and for developing and testing predictive models.

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