

Climate change: future-proofing our forests and woodlands



Some of our tree species may not survive if climate change continues at its predicted pace. They may simply fail to adapt fast enough to changing conditions. Advice on which trees to plant for the future may be changing as we look for ways to make our woods more resilient.

What can we do?

We can plant some trees now that we expect to be better able to cope with the predicted climate in the future. Recent advice has emphasised planting trees from local provenances that would be well suited to current conditions. However, trees used to growing in warmer regions may be better adapted to our future climate. We now recognise the benefits of increasing woodland resilience and spreading risk by using a broader range of species and widening the genetic base of planting stock. Planting trees from a wider range of UK sources may help and research is now underway to consider the implications of planting UK native species sourced from populations elsewhere in Europe.

What is being done?

Scientists at Forest Research, the research agency of the Forestry Commission, are carrying out a trial at the Woodland Trust's Hucking Estate

in Kent. This aims to establish how well trees sourced from different climates in Europe perform compared to our own genetic stock and if they may prove to be better adapted to future conditions here in Britain. Over 3,700 saplings of oak, ash, sweet chestnut and wild cherry have been planted on the Woodland Trust's land. The saplings came from various sources, including northern France and central Italy, where climates match predictions for Kent in 2050 and 2080, respectively.

The saplings were planted in 2011 after being checked for pests and diseases. Every year our scientists monitor each tree, noting survival rates, health and the timing of seasonal life cycles. The trials are expected to continue for at least 10 years.

Woodland owners are advised to consider diversifying species and seed sources and to include a proportion from other nearby UK seed zones. For further advice please see overleaf.



What does this mean for woodland owners?

The outcomes of this research will help us to advise woodland owners on what to plant. In the meantime, land owners can help increase resilience to climate change by considering the following:

- Not all species will be affected to the same extent, so planting mixed species will provide some insurance.
- Trees of different provenances will also provide insurance (but always ensure stock is disease-free).
- Tree species and woodland types should be well matched to each site and its future climate; if a site is currently at the dry end of a species' suitable range, choose a different species.
- Well-connected woodland should be an objective.

The Hucking Estate Provenance Trials are managed under the project ADAFOR (www.forestry.gov.uk/fr/INFD-97PFM2), match-funded by the European Union (ERDF) and the Forestry Commission within the framework of the European INTERREG IVA France (Channel) England Cross-border Cooperation Programme 2007–2015, under the priority to: 'Ensure a sustainable environmental development of the common space', with the objective to 'Ensure a balanced management of the environment and raise awareness about environmental issues'.

We are grateful to the Woodland Trust for their collaboration and for providing the trial site.

Where can I find out more?

For details of which species will be suitable for planting in changing conditions visit: www.forestry.gov.uk/fr/ccadaptation

More information about the trials at Hucking: www.forestry.gov.uk/fr/provenancetrial

Forest Research is also carrying out other research projects on how climate change will affect trees and the environment. Further information which may be of interest:

- Information on tree species and provenance: www.forestry.gov.uk/fr/treespecies
- SilviFuture, to promote and share knowledge about novel forest species across Britain: www.silvifuture.org.uk
- Research to monitor climate change and adapt European Atlantic forests: www.forestry.gov.uk/fr/reinforce

