

FORESTS & *Climate Change*

Part 1: A Convenient Truth?

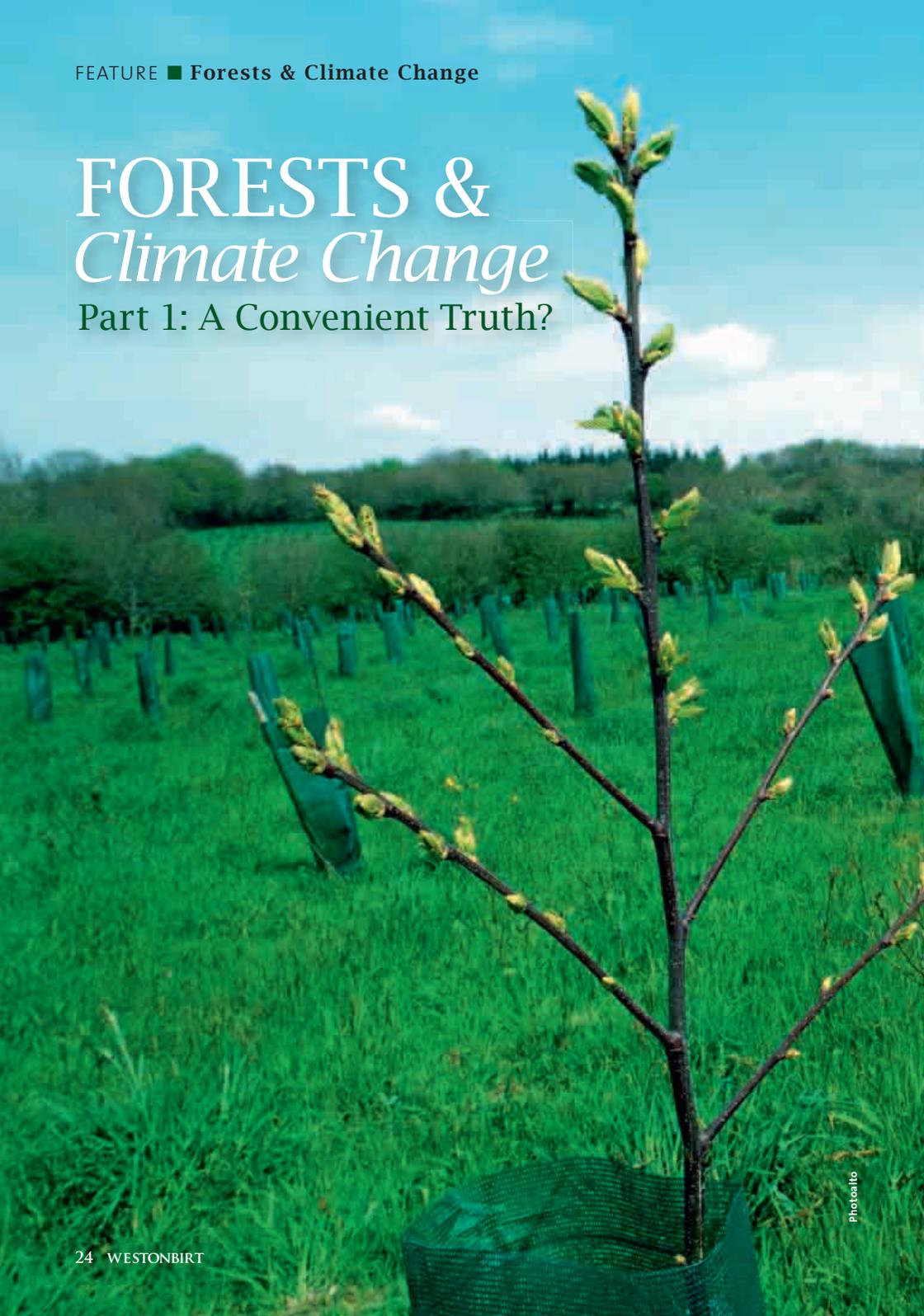


Photo: iStockphoto.com



The key role that forests can play in tackling climate change is increasingly being recognised, and the Forestry Commission has made action on climate change its top priority. Here, Tim Rollinson, the Commission's Director General, sets out a vision of why and how the forest sector can contribute.

Forests play a crucial role in regulating climate. A young, growing forest soaks up, or sequesters, carbon. Once the forest matures, the carbon sequestered by its young, growing trees equals the carbon released from its old and dying trees, so its carbon balance reaches a steady state. At this point the forest does not absorb any more carbon, but it has become a vast carbon reservoir.

However, if the forest is destroyed, much of that carbon is released into the atmosphere.

THE STATE OF THE WORLD'S FORESTS
Clearly, forests can be a big part of the answer to climate change. But we're not looking after them: 8000 years ago, half the Earth's land surface was forested; now it's less than a third.

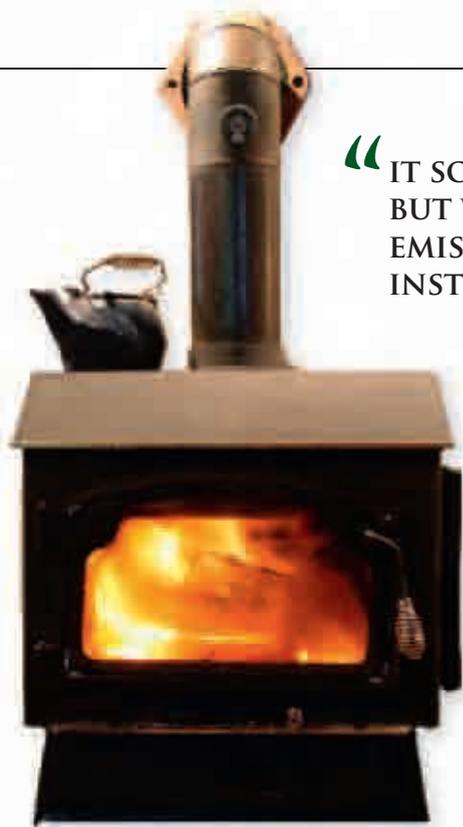
Deforestation is serious. It accounts for nearly one-fifth of greenhouse gas emissions – more than the transport sector emits. It affects everyone, particularly poor people.

However, we know from our own experience that the deforestation tide can be turned to reforestation.

The UK's forest area was only five per cent of the land area 100 years ago, but now it's more than double that. The forest area of Europe is also increasing again, growing by 13 million hectares between 1990 and 2005.

Globally, however, forests are being destroyed at an alarming rate. While it took Europe 15 years to add 13 million hectares, it is taking only one year to destroy the same amount elsewhere, mostly in tropical countries. >>

“IT SOUNDS LIKE A CONTRADICTION, BUT WE CAN REDUCE CARBON EMISSIONS BY BURNING WOOD INSTEAD OF FOSSIL FUELS”



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» We urgently need to reverse this situation, and we have identified three main ways in which the forest sector can help. They are:

- conserving and managing existing forests to protect the carbon already locked up in them;
- tackling the causes of deforestation to reduce the rate and amount of forest loss; and
- planting new forests and re-establishing those we've lost.

TACKLING CO₂ EMISSIONS

Various schemes encourage us to offset our emissions by planting trees. Offsetting in this way can be valuable when emissions cannot be avoided, but we should not use it just to ease our conscience while we carry on polluting.

It sounds like a contradiction, but we can also reduce net carbon emissions by burning wood instead of fossil

fuels. There are great opportunities for wood-fuelled heating schemes to replace oil, coal and gas, and provided we replace the trees we burn, thereby reabsorbing the carbon emissions in a balanced, carbon-out carbon-in cycle, woodfuel use can be 'carbon-lean'.



Wood use also causes lower CO₂ emissions than most common building materials. For example, substituting one cubic metre of timber for one of

concrete can save about a tonne of CO₂ emissions. The carbon in wood products remains stored for their lifetime: the longer the product is used, the longer the carbon is stored, so that increasing the use of wood products, and using more wood instead of concrete, brick and steel, helps to reduce CO₂ emissions.

However, the forests that supply the wood must be managed sustainably if emissions are to be reduced. We are working to realise this potential in Britain through developments such as our

woodfuel strategies. These are helping to stimulate new markets for wood products and financial incentives to bring neglected woods into sustainable management.

CHANGING CLIMATE, CHANGING SPECIES
Meanwhile, changes in our climate are already inevitable, and forest planners must recognise that. Mean annual temperatures are expected to rise, winters will see fewer frosts, summer rainfall could decline, winter rainfall increase, and droughts, flooding and deep depressions become more common. Unfortunately, most insect pests that affect British forests will benefit from climate change. >>



A large, mature tree with a thick trunk and dense green foliage stands in a forest. In the foreground, a large stack of cut logs is piled up. The background shows a misty or foggy forest scene with many other trees.

“ AVOIDING
DEFORESTATION
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ABOVE: Drought damage to young Acer
LEFT: Mature oak

» Our native woods are also likely to change, so that in some places, some native species will no longer be commercially viable.

More positively, trees and woods can help us to cope with the effects of climate change, for example by alleviating flooding and providing cooling shade in towns.

All this will have a significant impact on our forests, and we are developing guidance for woodland managers to help them plan for these changes.

WHAT HAPPENS NEXT?

Globally, achieving

the transition from deforestation to conservation, restoration and sustainable management is a huge challenge. It comes at a cost, but the *Stern Review** showed that avoiding deforestation can be a relatively cheap option. Every country gains from maintaining forests that provide services to the world, so compensating

the countries that provide these services will encourage conservation.

So we need to:

- protect what we already have;
- reduce deforestation;
- restore more of the world's forests;
- use more wood for energy;
- use more wood instead of other materials; and
- plan to adapt to a changing climate.

Westonbirt has a key role to play in this. As a leading tree collection, it is hugely important as we plan for this uncertain future. What trees will grow where in the future? We'll be looking to our collections, including Westonbirt, to help us find the answers.

If we get this right, the forest sector can help to solve climate change. We have the tools – we just need to show we have the willpower too. ■

Part 2: UK Forests follows in the autumn and *Part 3: Westonbirt Arboretum* concludes in the winter. **Stern Review on the Economics of Climate Change*, www.sternreview.org.uk

The Forestry Commission has a website devoted to climate change, so keep up-to-date with developments by visiting www.forestry.gov.uk/climatechange

