

Briefing

Why the UK should double its forest area to combat climate change

Trees, woodlands, forests and afforestation in the UK

Introduction

Politicians often make pledges to plant trees. With a fanfare they like to announce a number they will plant. They tend to say less about the types of trees, how they will be managed and maintained and how they will ensure new trees, woodlands and forests will work for wildlife as well as for people. Rarely do they make the connection to climate change and the need for the UK to become much more forested in order to remove carbon pollution from the atmosphere.

The UK government found out how much people care about trees and forests when it tried to sell off England's publicly-owned forest estate in 2011 and had to back down in the face of huge opposition. It has since started to regard tree cover, woodland and forests more positively as part of sustainable land management, improved conditions for nature and as part national action to curb climate change and to adapt to its impacts, although the government's ambitions still fall short of what is needed.

Trees, woodlands and forests provide multiple life-enabling and enhancing benefits by:

- Shading and cooling our local streets and being visually attractive and great to view and visit for relaxation and recreation
- Supporting a wealth of plants, bugs, birds and other wild species
- Acting as natural barriers, protecting soils and crops from strong winds and heavy rainfall and providing shade and shelter for livestock
- Protecting us from flooding by storing excess water and stabilising soil structure and quality with their roots
- Providing us with clean air by converting carbon dioxide into oxygen – major forests such as in the Amazon, Borneo and the Congo basin are the world's green lungs
- Regulating global temperatures – by absorbing carbon in the atmosphere and storing it, and by keeping soils healthy and intact tree roots and forest cover also help to lock in the even higher levels of carbon contained in our soils.

This briefing addresses how reforesting the UK supports climate action.

The UK needs to review its tree planting policies, plans, targets and incentives based on assessments of what tree species and types of forests are needed where and for what purpose (to store carbon, improve soils, prevent floods, support wildlife and agroforestry for soil health and land condition). Friends of the Earth recommend UK tree cover doubling by 2050.

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1. How many trees do we have?

Much of the UK was once covered in trees and forests. Most of that has been lost in the ice age and because of deforestation for construction of ships, houses, for firewood and when land was converted for farming and livestock grazing.

Only about 2% of the UK's original forests are left and the UK is now one of the least wooded nations in Europe. Compared with an average in the EU of about 35% of land area being covered with trees, **just 13% of the UK's total land area has tree cover**¹:

- 18% in Scotland - 74% of Scotland's 1.44 million hectares of woodland is conifer forest of which 33% is managed by the Forestry Commission for commercial timber production. The Scotland government aims to increase woodland cover to 21% by 2032. The Forestry and Land Management (Scotland) Bill enters force on 1 April 2019.²
- 15% in Wales - The *Woodlands for Wales* strategy aims to increase woodland cover by at least 2,000ha a year from 2020 as recommended by the UK Climate Change Committee.³
- 10% in England – see 3 below.
- 8% in Northern Ireland - 55% of forests and woodlands in Northern Ireland are state-owned or managed. 210ha of new woodland (109 ha conifer, 101 broadleaf) was planted in 2017/18 (208ha in 2016/17 and 54ha in 2015/16).⁴

Public sector forestry policy is a devolved matter. A coherent UK-wide approach to trees, woodlands and forests is needed for action on climate change, soil health and restored nature.

2. The role of trees and forests in mitigating climate change

UK forests and forest soils are already a significant carbon sink, or store of carbon. This makes protecting the forests we already have and preventing further degradation a priority. Adding to and increasing existing UK forest cover is an important part of accelerating the drawdown of carbon from the atmosphere and contributing towards the 'net zero' goal that the UK is committed to under the 2015 Paris Climate Change Agreement.

A 2009 study by the National Assessment of UK Forestry and Climate Change Steering Group examined the role of trees, woodlands and forests in the UK's action on climate change.⁵ The study concluded that "UK forests and forest soils contain significant amounts of carbon and that the strength of the carbon sink they provide will decline over the next few years unless practice and policy change." It also stated "unequivocally" that "a significant contribution to mitigation could be made by maintaining and increasing the rates at which CO₂ is removed from the atmosphere by the UK's forests – the abatement of emissions".

3. How many trees has the Government pledged to plant in future?

Following the government's climb down from attempting to sell off England's public forest estate, in 2012 the Independent Panel on Forestry recommended that the government should commit to **increase woodland cover in England from 10% to 15% by 2060**.⁶

However, **the Government rejected the Panel's recommendation** as unfeasible, stating that: "The recent rate of progress has been between 2,000 and 3,000ha per year, which would reach 11% woodland cover by 2060. The Panel's recommendation implies a 500% increase on this rate sustained for the next 47 years. This is unlikely to be achievable or affordable. We, therefore, agree that 15% is a reasonable level of woodland cover to aim for although not within a specified timescale."⁷ Instead, the government set a lower aspiration to **increase woodland**

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cover in England from 10 to 12 per cent by 2060 as enshrined in its 25 Year Environment Plan: “Increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042.”⁸

The government’s Clean Growth Strategy relies on early progress with extensive planting in the 2020s.⁹ This tallies with the Conservative Party’s 2015 General Election manifesto, which also **pledged to plant 11 million more trees by 2020.**¹⁰ The Clean Growth Strategy states that “our indicative pathway could involve planting **up to 130,000 hectares** of new woodland and implement plans for farmers to plant more trees across England.”¹¹ The government has also committed to support voluntary efforts to plant 50 million trees in 25 years in the new ‘Northern Forest’¹². It is unclear whether these are additional trees or the same.

New forests and tree planting are welcome, but the targets far well short of the levels identified as the minimum necessary by the Royal Society and Royal Academy of Engineering who are calling for much higher numbers (at least 1.2 million hectares, see below).

Some of the aims are also **very vague**; for example, **it’s unclear how the government arrives at its figures** for what tree planting levels and woodland cover should be – especially if they are to play their *full* role in benefiting wildlife, storing carbon, preventing flooding and so on.

The Government’s afforestation commitments also **omit a number of crucial areas**. In particular:

- Whether there will be **adequate funding for tree-planting**. Funding for the government’s pledged level of tree-planting to 2020 is allocated under the Countryside Stewardship scheme,¹³ but funding after 2020 is uncertain. Incentives, mechanisms and agreements with landowners to maintain impetus post 2020 will also be required.
- The Clean Growth Strategy **makes no mention of the need to protect and restore existing forests**. For example, ancient woodland is some of our most precious and irreplaceable habitat, but it has not been adequately protected. Ancient woodland sites have been routinely damaged or destroyed by Government-backed road and development schemes and encroached on by commercial planting of non-native conifers or affected by harmful invasive species. In its recent revisions to the planning system in England the government has offered belated better protection for ancient woodland, although even this revised policy still permits their destruction for development judged to be in the national interest.¹⁴
- The Clean Growth Strategy also **lacks a commitment to support the development of agroforestry** - the practice of incorporating trees into pasture and cropland, which has considerable benefits for storing carbon (soil carbon sequestration) and flood prevention.

4. How many more trees do we need?

We will need significant afforestation to help achieve a net zero climate target. Increasing UK forest cover is also likely to require concomitant changes in diet to free up the necessary land area and make sure we do not simply displace agriculture, potentially leading to deforestation in other countries.

Various studies have made the case for greatly increasing UK forest cover, well in excess of current official targets:

- The UK’s **Committee on Climate Change** has identified afforestation and agroforestry as important measures in offsetting the emissions from those sectors that are very difficult to reduce to zero (agriculture, aviation, and parts of industry). They say that afforestation and

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agroforestry levels will now need to be higher than those they previously recommended - 30,000 hectares a year of woodland and 2.3% of agroforestry on agriculture land - because the Paris Agreement will require the UK to make deeper cuts in greenhouse gas emissions¹⁵.

- **The Royal Society and Royal Academy of Engineering** have said that of 1.5 million hectares of land researchers have suggested is available poorer quality or non-agriculture land, at least 1.2 million hectares of land will need to be afforested (around 5% of additional UK land dedicated to forests)¹⁶. They also suggested that dietary changes could free-up further additional land for afforestation.
- The **Centre for Alternative Technology's Zero Carbon Britain project** has modelled various scenarios that involve major afforestation efforts, alongside big shifts in diet to free up land for trees, in order to draw down and store carbon.¹⁷
 - In *Zero Carbon Britain 2030*¹⁸, it recommended planting 1.37 million hectares of trees between now and 2030. This would amount to 5.6% of the UK land surface, so a total forest cover of 18.6% of the UK by 2030.
 - In its later *Zero Carbon Britain: Rethinking the Future*¹⁹, CAT conducted more detailed land-use modelling concluding that the UK should double its forest cover from 3 million to 6 million ha (from 13% to 26%) to deliver on negative emissions.

Friends of the Earth recommends that the Government set a target of doubling UK forest covered – from 13% to 26% by 2050. This is equal to an additional 3 million hectares of land. This is significantly greater than the minimum recommended by the Royal Society and Royal Academy of Engineering, and would need to be facilitated by dietary change to free-up land. But it recognises that that the UK and globe need to not only achieve net zero emissions to deliver on the Paris Agreement but deliver net negative emissions in the second half of the century. The growth of trees in forests planted in the first half of the century will have an important role in contributing to this.

5) Choosing the right species: mixed woodland not monoculture

Trees and forests play many vital roles, but not all trees and forests are the same. For example, broadleaf, deciduous trees and mixed woodlands will support many more wild species than conifer forests and plantations comprising just a few species. As conifers tend to grow faster than broadleaf species, they will absorb more carbon at a faster rate than most slow growing deciduous trees. Having the right trees and forests in the right places, ensuring these are well managed and maintained over their whole lifetimes and knowing what types of woodland are needed for what task, are key.

Post WWII policies led to large tracts of land in the UK being turned into commercial forestry usually comprising a narrow range of species considered useful for timber production - such as Larch, Sitka spruce, Scots and Corsican pines, Douglas fir and silver birch. However, many objected to such bland monoculture plantations, both on visual amenity grounds and because such forests supported little in the way of wildlife and often affected and altered soil type and quality.

Fortunately, a change in approach is underway as the Forestry Commission and others realise the necessities and benefits of having a larger variety of tree species, which makes for far more biodiverse habitat as well as playing a role in flood protection, healthier soils and carbon absorption. Also, changing the financial incentives for investing in biodiverse, multi-functional forestry is needed to get away from the blunt system used for many decades which gave millions of public funds for vast plantations of questionable benefit.

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Diversity of species is also vital because **trees and forests will themselves be vulnerable to climate change** and the rising temperatures, unpredictable weather patterns (such as wetter winters and drier summers) and the influx of pests and diseases that climate instability will bring. A sensible policy on trees and forests will address both the role they need to play in mitigating climate change, and how they themselves can be resilient to changing conditions.

Recommendations

The government should:

- Review its tree planting and forestry policies and targets to maximise their role in climate mitigation and the restoration of nature, soil condition and flood prevention and to contribute to the UK's delivery on the Paris Climate Change Agreement and to post-2020 biodiversity commitments (still to be negotiated) - doubling woodland cover across the UK by 2050.
- Prioritise agroforestry, tree planting and woodland creation in its post Brexit agricultural policies as part of action to improve soil health, land condition and farming's role in restoring nature and ecosystems across the UK.
- Ensure that revised tree planting and forestry aims are supported by the right fiscal and other incentives helping landowners and farmers to retain existing and to create more woodland.
- Move from picking round numbers of trees to be planted to specifying and being clear about the tree species and extent of forestry needed in different parts of the UK and for what purpose (carbon storage, boosting biodiversity, flood prevention, improving soils etc).

References

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¹⁶ Royal Society and Royal Academy of Engineering, 2018, Greenhouse Gas Removal

¹⁷ Centre for Alternative Technology, Zero Carbon Britain <http://www.zerocarbonbritain.org/en/>

¹⁸ *Op cit*

¹⁹ Centre for Alternative Technology, Zero Carbon Britain: Rethinking the Future, See p.82, p.106, Figure 3.34 of <http://www.zerocarbonbritain.org/images/pdfs/ZCBrtflo-res.pdf>