



House of Commons
Environmental Audit Committee

Seeing the wood for the trees: the contribution of the forestry and timber sectors to biodiversity and net zero goals

Fifth Report of Session 2022–23

*Report, together with formal minutes relating
to the report*

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Environmental Audit Committee

The Environmental Audit Committee is appointed by the House of Commons to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development; to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

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Summary

The World Bank estimates that global timber demand is set to quadruple by 2050. Demand in the UK is also expected to rise, in part because of the Government's commitment to promote timber use in construction as part of the UK's Net Zero Strategy. The UK imported 81% of all its timber in 2021, making it the second highest net importer of wood in the world. Against this backdrop of increasing demand, the UK's softwood timber supply is set to fall even further behind demand, with production forecast to peak in the late 2030s before falling back to current levels in the 2040s.

Not only are trees and woodlands vital to the provision of timber, but creating new woodland is also widely agreed to be crucial for the UK to meet its 2050 net zero target and nature recovery targets. Trees and woodlands have an important role to play in providing other ecosystem services including climate regulation, soil conservation, the removal of air pollution and urban cooling.

Given the UK's heavy reliance on timber imports and the potential negative impacts that increased UK and global demand could have on the planet's most ecologically sensitive and biodiverse forests, we examine how the UK could deliver a higher proportion of its timber consumption through domestically grown timber, while also helping to deliver benefits for climate and nature.

As different tree species and woodland types deliver different benefits, a range of woodland types—including ancient woodlands, majority-broadleaf woodlands and mixed-species productive woodlands—is needed to support native biodiversity and to produce softwood timber. Significant expansion of the UK's woodland cover is required to compensate for predicted shortfalls in the supply of domestically-produced softwood timber and to deliver the UK's nature restoration and net zero goals.

We therefore welcome the Government's UK-wide target to create 30,000 hectares of new woodland every year by 2025, including planting at least 7,500 hectares per year in England by 2024–25. But we are extremely concerned by the consistently poor progress made in increasing tree planting rates across all four of the nations in the UK. In 2022–23, tree planting rates across the UK were at similar levels to the previous four years and remained below half the rate required to meet the overall target of 30,000 hectares per year by March 2025. At this rate it is extremely unlikely that current tree planting targets for England or the UK will be met. So it is time for concerted action in both the public and private sectors in order for these targets to be met as soon as possible.

The Government is relying on third parties to plant the lion's share of the trees required to meet its targets. It is therefore crucial that the Government is clear on what it requires prospective planters to do, and that it provides competitive and targeted incentives to encourage planting by private landowners.

Stakeholders require greater clarity from Government about its long-term vision and objectives for forestry and timber production in England. We identified no single strategy which clearly articulates the Government's vision for the timber sector and it is by no means clear how Government intends to integrate the delivery of its policy objectives for timber with delivery of its nature recovery and climate change mitigation goals. To give greater clarity to the whole forestry sector, from nurseries through to foresters, land managers and end-users of timber, we recommend that the Government divide its overall tree planting targets into sub-categories for the types of woodland needed to achieve different goals. Future strategies for forestry should be fully integrated so as to establish a clear and holistic long-term vision for all woodland creation types.

We find that Forestry England, the government agency responsible for the management of the public forest estate in England, is not playing its part in meeting the national tree planting targets: to date it has planted 303 hectares against its target of 2,000 hectares of new planting between 2021 and 2026. Forestry England must take decisive action and develop a clear delivery plan to meet this target, to contribute to future timber supply and to the Government's wider nature and climate objectives. As a major landowner, central government could be a significant contributor to meeting the UK's tree planting goals. Ministers should commission work to identify opportunities for woodland creation on the Government estate so as to advance nature recovery and increase timber production.

Given the UK's heavy reliance on timber imports and the potential negative impacts that increased UK and global demand could have on the planet's most ecologically sensitive and biodiverse forests, it is right that the UK should do more to meet a higher proportion of its timber consumption through domestically-grown timber. It is unlikely that the UK will be able to supply fully all its timber needs domestically, especially against a backdrop of increasing demand and limited land availability. There is nevertheless scope to increase domestic timber production. The Government should set a realistic long-term target for the amount of timber to be produced domestically, informed by the analysis being undertaken to produce Defra's forthcoming Land Use Framework. This target would give greater medium and long-term certainty over timber supply to the UK sawmilling sector, which currently relies upon domestically grown timber for 95% of its softwood consumption.

The Government's aim to increase the uptake of timber in construction is welcome. The long-term use of timber in construction offers longer term carbon storage potential than other uses of harvested wood products and therefore has an important role to play in helping the UK to meet its net zero targets. Domestically grown timber resulting from the current drive to plant must be available for use in construction as far as possible.

The Government's Timber in Construction roadmap should therefore be issued without delay. This must comprehensively address the afforestation commitments made in the England Trees Action Plan. It should address how the Government will support the sawmilling sector in its transition to production of a higher percentage of construction grade timber products, and how the Government can incentivise the safe use of domestically grown timber in construction, including through innovation in engineered timber products.

For as long as imported woody biomass continues to be a major bioenergy feedstock, it is important that the biomass used in UK power generation, whether from the UK or overseas, is genuinely sustainably sourced in a way which minimises the impact on forest biodiversity and carbon stocks. The Government must urgently address current sustainability concerns through improvements to its governance framework for biomass and in the forthcoming Biomass Strategy originally scheduled for release by the end of 2022. The amount of biomass used by the UK power sector should be constrained to match the availability of low-carbon sustainable feedstocks, factoring in potential domestic supply and rising trends of bioenergy use globally.

As demand for biomass feedstock grows globally, sourcing more biomass domestically could increase the security of UK biomass supply. In its forthcoming Biomass Strategy and Land Use Framework the Government must determine the capacity of the UK to supply bioenergy feedstock from its forest resources—including forest residues, short rotation forestry and coppicing—analysing the risks to sustainability of drawing upon these resources, and ought to model land-use trade-offs with regard to the future security of food supply and recovery from the current biodiversity crisis.

Introduction

1. Tree planting is an important part of the UK Government's plans to achieve net zero and meet its wider environmental objectives for biodiversity and nature recovery. There are opportunities for the commercial sale of UK timber to contribute to the delivery of the UK's Net Zero Strategy, primarily through the use of timber products in construction and as biomass for energy generation (bioenergy).¹
2. The UK Government has set a UK-wide target to create 30,000 hectares of new woodland every year by 2025, including planting at least 7,500 hectares per year in England by 2024–25. The devolved administrations have set their own targets: the Scottish Government has committed to plant 18,000 hectares a year by 2024–25, the Welsh Government to plant 2,000 hectares a year from 2020 onwards, and the Northern Ireland Executive to plant 900 hectares a year between 2020 to 2030.
3. Given the overall importance of this renewable resource to the UK's sustainability policies, and its current heavy reliance on imported timber, the Committee has set out to examine how the UK could scale up a sustainable and resilient domestic timber sector to help meet future demands, reducing reliance on imports while also helping to deliver benefits for climate and nature.

Background to the inquiry

4. We launched this inquiry in July 2022. Our objective was to understand Government's approach to dealing with two policy issues. Firstly, given the role of timber in the UK's decarbonisation and nature recovery policies, we wanted to understand how the Government's programme of tree planting can help to deliver a sustainable and resilient timber sector to help meet a higher proportion of demand through domestically grown timber. Secondly, in the context of rising timber demand, we wished to examine the degree to which UK supply chains contribute to deforestation overseas, the effectiveness of the Government's efforts to curb this and how the UK works with international partners to tackle deforestation. While we took oral and written evidence on both these topics simultaneously, in view of the broad scope of the overall inquiry, we are making separate reports on each.
5. We received 57 written responses and held five public evidence sessions, hearing from 24 witnesses including academics, environmental NGOs, forestry sector representatives and Government agencies.² As part of the Committee's inquiry, we visited forestry and timber businesses and Forestry England representatives in Wrexham and Shropshire. In relation to deforestation, we held a roundtable discussion with representatives from NGOs in countries affected by tropical deforestation. To conclude the oral evidence to the inquiry, we heard from Trudy Harrison MP, Minister for Natural Environment and Land Use, Department for Environment, Food & Rural Affairs (Defra), Sir William Worsley, Chair of the Forestry Commission and Rt Hon the Lord Goldsmith of Richmond Park, then Minister for Overseas Territories, Commonwealth, Energy, Climate and Environment at the Foreign, Commonwealth & Development Office (FCDO).

¹ HM Government, [Net Zero Strategy: Build Back Greener](#), October 2021

² The oral evidence taken by the Committee is listed at page 87; the written evidence received is listed at page 89.

6. As domestic environment and forestry policy is devolved in the UK, this report focuses principally on policies in England promoted by the UK Government. We nevertheless hope that it will be read with interest in the devolved administrations and legislatures: we invite them to reflect as appropriate on the general recommendations we make to UK Ministers.

1 The contribution of trees, woodlands and timber to sustainability and climate goals

7. In this chapter we consider the importance of trees, woodlands and timber for sustainability and climate goals and examine the current state of woodlands and tree planting trends in the UK.³

The importance of trees, woodlands and timber

8. Woodland currently covers 13 per cent of the UK's total land area (3.24 million hectares).⁴ UK woodland cover is much lower than in other European countries such as France (32 per cent), Germany (33 per cent) and Spain (37 per cent).⁵ Forest covers 46 per cent of the European land area: and 31 per cent of land globally.⁶

9. The contribution of woodland to the UK economy extends far beyond the provision of timber and the raw material for wood products. Woodlands support biodiversity levels by providing habitats for a large array of plants and animals, many of which are rare or threatened.⁷ 25 per cent of UK species of conservation concern rely on native trees as a habitat or as a food source.⁸ Trees and woodlands also play an important role in delivering other ecosystem services, including climate regulation, soil conservation, the removal of air pollution and urban cooling.⁹ Woodland creation is therefore vital to delivering many of the UK Government's environmental targets and commitments, including its target to reach net zero by 2050, its domestic biodiversity commitments (summarised in Box 1) and its international commitments as a signatory to the Kunming-Montreal Global Biodiversity Framework.¹⁰

3 The terms 'woodland' and 'forest' can vary in their definition and have broadly been used interchangeably in this report. 'Woodland' is defined as land under stands of trees with a minimum area of half a hectare, minimum width of 20 m and a canopy cover of at least 20 per cent (or potential to achieve this). In Forestry Research publications, both 'woodland' and 'forest' meet the above definition. There is no formal definition of 'forest' in UK official usage, though it is commonly used interchangeably with 'woodland': 'forest' is the term more commonly used in European and international statistics. See Annex 1 for a glossary of terms used in this report, including a fuller definition of 'forest' and 'woodland'.

4 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, pp. 5 and 9.

5 Forest Research, [Forestry Facts & Figures 2022](#), p. 23. "Woodland cover" is defined as the proportion of land area which is woodland.

6 Forest Research, [Forestry Facts & Figures 2022](#), p. 22. 'Forest' is the terminology for woodland cover used by international bodies such as the United Nations Food and Agriculture Organization (FAO).

7 Forestry Commission, [The UK Forestry Standard: the governments' approach to sustainable forestry](#), 2017

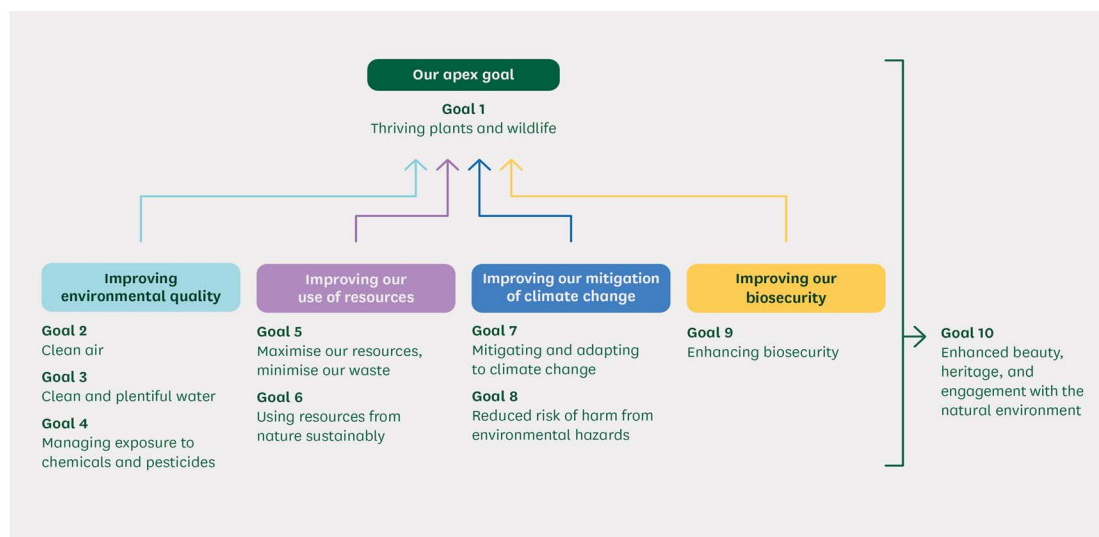
8 Webb, J. R. et al. [Managing for species: Integrating the needs of England's priority species into habitat management](#). Natural England Research Report 24, January 2010.

9 Office for National Statistics, [Woodland natural capital accounts, UK: 2020](#), February 2020; Forestry Commission, [The UK Forestry Standard: the governments' approach to sustainable forestry](#), 2017

10 Convention on Biological Diversity, [Decision 15/4 adopted by the Conference of the Parties to the Convention on Global Biodiversity: Kunming-Montreal Global Biodiversity Framework](#), 19 December 2022

Box 1: The UK Government's domestic biodiversity targets and commitments

Improving biodiversity is the UK Government's apex target for improving the environment to which all the other goals in the Environmental Improvement Plan 2023 (EIP) contribute.



In the EIP, the Government set four long-term targets for England. These are:

"By the end of 2030, we will halt the decline in species abundance.

By the end of 2042, we will increase species abundance so that it is greater than in 2022 and at least 10 per cent greater than in 2030.

By the end of 2042, we will restore or create in excess of 500,000 hectares of a range of wildlife-rich habitats outside protected sites, compared to 2022 levels.

By the end of 2042, we will improve the GB Red List Index for species extinction compared to 2022 levels."

As environmental policy is mostly devolved, the majority of the EIP covers England only, with some reserved elements, for instance chemicals.

Source: HM Government, [Environmental Improvement Plan 2023](#), February 2023, p. 10

Responsibility for forestry in the UK

10. Domestic environment and forestry policy is devolved in the UK. The Department for Environment, Food & Rural Affairs (Defra) has overall responsibility for environmental policy, including forestry policy, in England. The Forestry Commission, a non-ministerial department, is the Government's forestry expert, advising Ministers on forestry matters and taking responsibility for implementing forestry policy.¹¹ The Forestry Commission's research agency, Forest Research, is Great Britain's principal organisation for forestry and tree-related research.¹²

11 Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020

12 Forest Research, [Annual Report and Accounts 2021–22](#), HC 244, p. 7

Box 2: Duties of the Forestry Commission

The Board of Forestry Commissioners is under a duty to:

- a) promote the interests of forestry, the development of afforestation, and the production and supply of timber and other forest products;
- b) promote the establishment and maintenance of adequate reserves of growing trees; and
- c) endeavour to achieve a reasonable balance between the development of afforestation, the management of forests and the production and supply of timber, and the conservation and enhancement of natural beauty and the conservation of flora, fauna and geological or physiographical features of special interest (commonly referred to as the 'balancing' duty).

Source: Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020

11. Whereas the Forestry Commission's remit previously covered England, Scotland and Wales, each nation of the UK now has its own government agency responsible for forestry policy:

- **England:** Forestry England is an executive agency sponsored by the Forestry Commission.¹³ The core business of Forestry England is managing 250,000 hectares of sustainable, productive, multi-purpose forests for public benefit. In the financial year 2021–22 Forestry England produced around 1,100,000 m³ of timber for the market.¹⁴
- **Scotland:** Forestry and Land Scotland is the Scottish Government agency responsible for managing Scotland's national forests and land.¹⁵ Forestry and Land Scotland manage 630,000 hectares of forests and land. For the financial year 2021–22 Forestry and Land Scotland produced 2,900,000 m³ of timber for market.¹⁶
- **Wales:** Forestry Commission activities in Wales became part of Natural Resources Wales (NRW) in April 2013.¹⁷ NRW was formed in April 2013, largely taking over the functions of the Countryside Council for Wales, Forestry Commission Wales and the Environment Agency in Wales, as well as certain Welsh Government functions. NRW manages 124,000 hectares, of which 123,000 hectares are on the Welsh Government estate and 900 hectares are on National Nature Reserves.¹⁸ NRW produced 809,000 m³ of timber for the market in the financial year 2021–22.¹⁹

13 Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020.

14 Forestry England, [Annual Report and Accounts 2021–22](#), HC 607, July 2022.

15 Forestry and Land Scotland, ['Who we are'](#) (accessed 12 July 2023); Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020. The Forestry Commission's activities in Scotland ceased in April 2019.

16 Forestry and Land Scotland, [Annual Report and Accounts 2021–2022](#), SG/2022/160, October 2022

17 Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020

18 Natural Resources Wales briefing note, 'Forestry on the Natural Resources Wales (NRW) Estate', 6th March 2023.

19 Natural Resources Wales, [Annual Reports and Accounts 2021–2022](#), April 2023.

- **Northern Ireland:** The Northern Ireland Forest Service (NIFS) is the government agency responsible for timber and public forests in Northern Ireland.²⁰ NIFS produced 400,000 m³ for market in 2021–2022.²¹

Trends in UK forest cover and composition

12. It is likely that woodland and wooded habitats covered much of the British land mass following the end of the last ice age. Woodland cover declined significantly as human activity increased: the extraction of timber and conversion of woodland to other land uses, particularly agriculture, had a significant effect on woodland cover.²² All woodland in the UK today is now considered to be ‘semi-natural’, as no areas remain that have not been touched by people in some way.²³

13. It is estimated that by 1905 only 4.7 per cent of the UK’s land mass was covered by woodland.²⁴ The Forestry Commission was established in 1919 with a remit to establish a strategic timber reserve for the country, which had almost run out of timber during the First World War.²⁵ In the century since the Forestry Commission was established, woodland cover across the UK has more than doubled to 13 per cent.²⁶

14. Reporting of planting rates across all four nations of the UK began in 1976. As Figure 1 shows, tree planting peaked during the 1970s and 1980s when the annual rate of tree planting in the UK reached 20,000 to 30,000 hectares. In the 1980s, tax concessions promoted afforestation and support the forestry industry: in 1984 changes to capital allowances were designed to encourage investment in commercial woodland schemes.

20 Department of Agriculture, Environment and Rural Affairs, ‘[Forest Service](#)’ (accessed 13 July 2023). The Forestry Commission has never operated in Northern Ireland.

21 Northern Ireland Forest Service, [Forest Service Agency Annual Report and Accounts for the year ended 31 March 2022](#), July 2022.

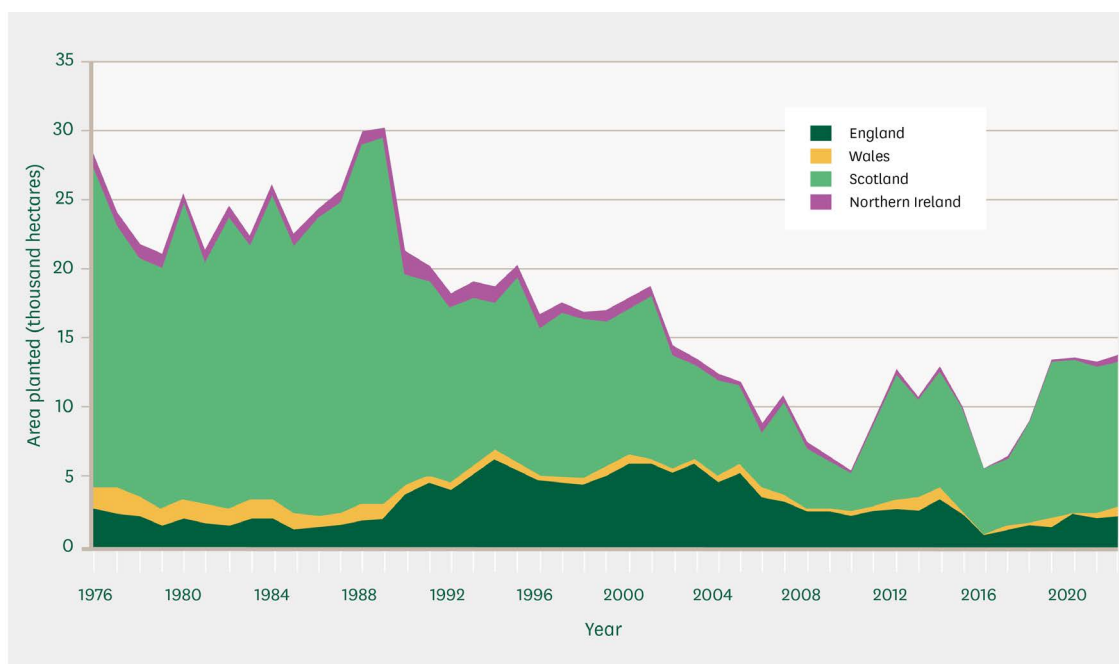
22 The Woodland Trust, [State of the UK’s Woods and Trees 2021](#), 2021.

23 *Ibid.*

24 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p. 9. The estimate for Northern Ireland was made on the basis of available figures for the province of Ulster in 1905.

25 [Q3](#) [Ian Tubby]; Sally Westaway, Ian Grange, Jo Smith, Laurence G. Smith, ‘[Meeting tree planting targets on the UK’s path to net-zero: A review of lessons learnt from 100 years of land use policies](#)’, *Land Use Policy* vol 125, February 2023, and Department for Environment, Food & Rural Affairs, [Forestry Commission framework document](#), May 2020, p. 2.

26 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, pp. 5 and 9.

Figure 1: Tree planting rates by UK nation, 1976–2022

Source: Forest Research, [Forestry Statistics 2022, Chapter 1: Woodland Area & Planting](#), p. 46

15. In the 1988 Budget the then Chancellor of the Exchequer, Nigel Lawson, told the House that the system of tax reliefs for forestry could no longer be justified and suggested that investment in forestry was being used as a tax shelter.²⁷ Commercial forestry was taken out of the tax system altogether,²⁸ while grant schemes were introduced to support afforestation and woodland management so as to increase the supply of timber and promote sustainable forestry practices.²⁹ Nevertheless by the early 2000s planting rates in the UK had declined to a low of 5,440 hectares per year in 2010 (Figure 1).

27 Official Report, 15 March 1988, [col. 1006](#): “I accept that the tax system should recognise the special characteristics of forestry, where there can be anything up to 100 years between the costs of planting and the income from selling the felled timber. But the present system cannot be justified. It enables top rate taxpayers in particular to shelter other income from tax, by setting it against expenditure on forestry, while the proceeds from any eventual sale are almost tax free. The time has come to bring it to an end. I propose to do so by the simple expedient of taking commercial woodlands out of the income tax system altogether. That is to say, as from today, and subject to transitional provisions, expenditure on commercial woodlands will no longer be allowed as a deduction for income tax and corporation tax. But, equally, receipts from the sale of trees or felled timber will no longer be liable to tax. It is, perhaps, a measure of the absurdity of the present system that the total exemption of commercial woodlands from tax will, in time, actually increase tax revenues by over £10 million a year. At the same time, in order to further the Government’s objectives for the rural areas, I have agreed with my right hon. Friends who have responsibilities for forestry and for the environment that, in parallel, there should be increases in planting grants. [...] The net effect of these changes will be to end an unacceptable form of tax shelter; to simplify the tax system, abolishing the archaic schedule B [provided in successive Income and Corporation Taxes Acts] in its entirety; and to enable the Government to secure its forestry objectives with proper regard for the environment, including a better balance between broad-leaved trees and conifers.” See also [Taxation of Woodlands](#), Forestry Commission Bulletin 84, HMSO, 1989.

28 [Schedule 6](#) to the Finance Act 1988

29 See, for instance, the [Farm Woodland Scheme 1988](#)

16. Tree planting in the UK during the 1970s and 1980s was predominantly of conifer species (Figure 2), generally in upland areas.³⁰ These plantations are largely composed of stands of single species planted over short time periods between 1950 and 1990, resulting in uniform, even-aged forests.³¹ Rotation lengths for commercial forestry are currently between 35 and 60 years, depending on species: the trees planted during that period are therefore largely those being harvested for timber today.³²

17. Much of the increase in planting in the twentieth century was initially achieved through the planting of non-native trees, with a focus on timber production. The benefits for forest biodiversity have thus sometimes been limited: at worst, planting has diminished or disrupted secondary open semi-natural habitats to the detriment of biodiversity.³³ In particular, during the twentieth century, many of the surviving ancient semi-natural woodlands were cleared to increase the area available for crops and livestock, or were felled and replanted with conifer plantations for timber production, now known as plantations on ancient woodland sites.³⁴ Ancient woodlands are now estimated to cover only 2.5 per cent of the UK.³⁵ Ancient woodlands are of national and international conservation importance and provide a range of specialist habitats for animals, plants and fungi.³⁶ The clearance of ancient woodlands is reported to have had significant negative consequences for species dependent on ancient woods and the ecological functioning of these habitats.³⁷ The Government now recognises that, alongside planting more trees, ancient woodlands and veteran trees which have stood for hundreds of years must have greater protection.³⁸

30 Elspeth Macdonald and others, '[The effects of transformation of even-aged stands to continuous cover forestry on conifer log quality and wood properties in the UK](#)', *Forestry: An International Journal of Forest Research*, vol. 83, Issue 1 (January 2010), pp. 1–16.

31 *Ibid.*

32 *Ibid.*, and Moore, J.R., Lyon, A.J. & Lehneke, S. '[Effects of rotation length on the grade recovery and wood properties of Sitka spruce structural timber grown in Great Britain](#)', *Annals of Forest Science* vii. 69 (2012), pp. 353–362.

33 Forestry Commission, [UK Forestry Standard](#), Fourth Edition, (2017), p. 38.

34 Ancient forests are those which have been established to have centuries of continuity and are defined as being present since 1600 in England and Wales and 1750 in Scotland. Natural England and Forestry Commission, [Ancient woodland, ancient trees and veteran trees: advice for making planning decisions](#) (January 2022) and NatureScot, [A guide to understanding the Scottish Ancient Woodland Inventory](#).

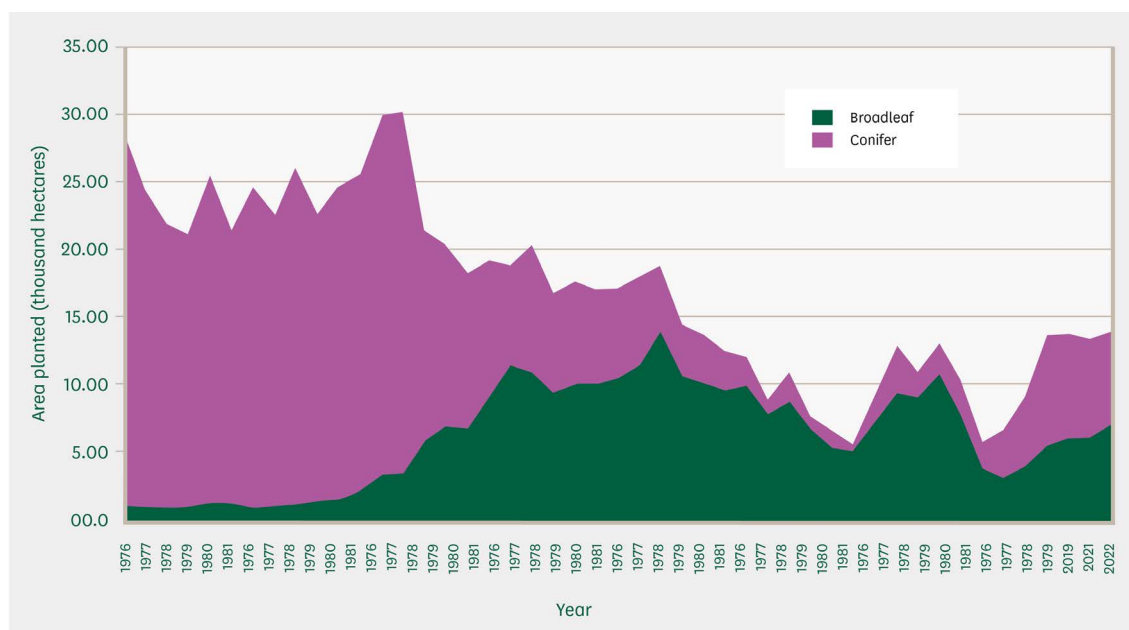
35 The Woodland Trust, [State of the UK's Woods and Trees 2021](#), 2021.

36 Jøgeir N. Stokland, Juha Siitonen, and Bengt Gunnar Jonsson, *Biodiversity in Dead Wood*, Cambridge University Press, 2012.

37 The Woodland Trust, [State of the UK's Woods and Trees 2021](#), 2021.

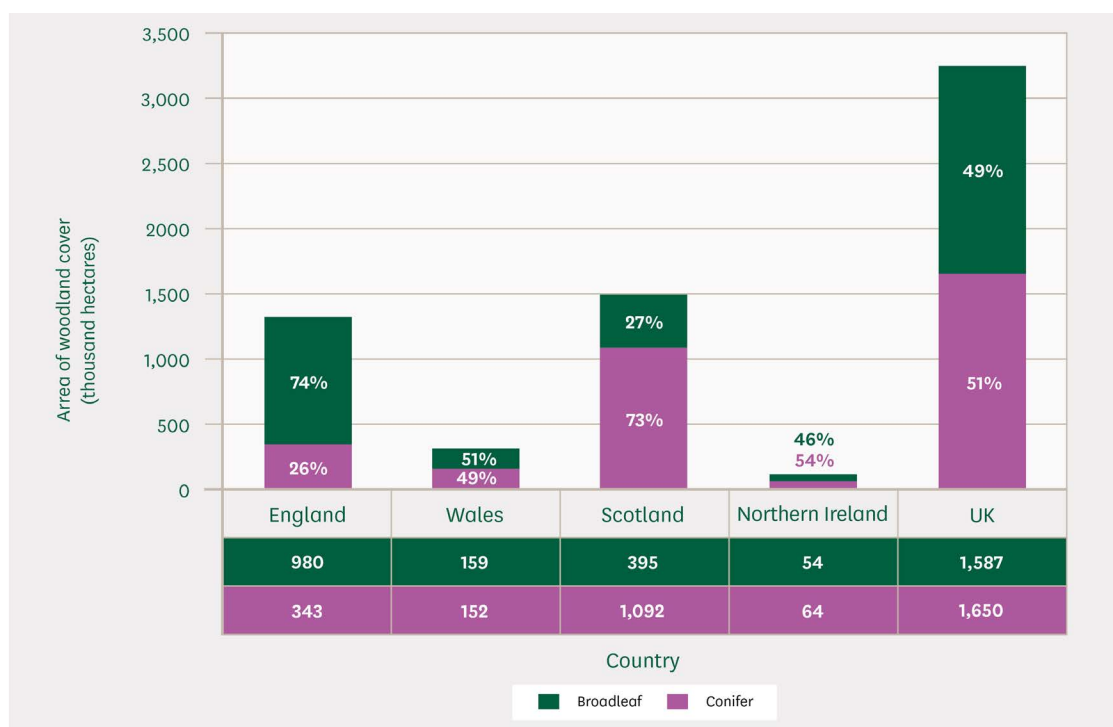
38 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

Figure 2: New tree planting in the UK, by type, 1971–2022



Source: House of Commons analysis of Forestry Research, [Provisional Woodland Statistics 2022, supplementary data set C](#). This data includes planting by the public and private sectors.

Figure 3: Area of woodland by UK nation and species type, 2022



Source: House of Commons analysis of Forest Research data (Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p. 8)

18. As figure 3 shows, today woodland cover varies substantially throughout the UK. Woodland represents 19 per cent of land area in Scotland, 15 per cent in Wales, 10 per cent in England, and 9 per cent in Northern Ireland.³⁹ Scotland's woodland cover represents 46 per cent of the UK's woodland cover, compared to 41 per cent in England, 10 per cent in Wales and 4 per cent in Northern Ireland.⁴⁰ Conifers account for around one half (51 per cent) of the UK woodland area, although this proportion varies from around one quarter (26 per cent) in England to around three quarters (73 per cent) in Scotland (Figure 3).⁴¹ 67 per cent of the total broadleaf cover in the UK is found in England.⁴²

39 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p. 5.

40 See [supporting data table 1.1](#) for Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting. Numbers do not sum to 100 per cent due to rounding.

41 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting.

42 *Ibid.*

2 Government targets and strategies for woodlands and timber

19. In this chapter we examine the effectiveness of Government's strategies for the forestry and timber sectors, and progress against the UK's tree planting targets.

The UK Government's policies for forestry and timber

The 25 Year Environment Plan (2018) and the Environmental Improvement Plan 2023

20. In January 2018 the UK Government published its 25 Year Environment Plan (25YEP) which set out its ambition to be the first generation to leave the natural environment of England in a better state than it inherited it. As part of this plan, the Government committed to increasing woodland cover in England to 12 per cent by 2060.⁴³ In addition to planting commitments, the plan set out Government's intention to support increased protection of existing trees and forests, including ancient woodlands.⁴⁴

21. Under the provisions of the Environment Act 2021 the Government is required to refresh the 25YEP every five years. The Environmental Improvement Plan 2023 (EIP) was the first such review of the 25YEP. In the EIP the Government made additional commitments to increase tree canopy and woodland cover from 14.5 per cent to 16.5 per cent⁴⁵ of total land area in England by 2050, with a new interim target to increase this by 0.26 per cent (equivalent to 34,000 hectares) by 31 January 2028, in line with the trajectory required to achieve the long-term target. This 2050 target will require a similar area of new woodland to be planted as in the 25YEP, but by 2050 rather than 2060. This target is expected to deliver an increase in tree cover of around 250,000 hectares, which is roughly equivalent to an area the size of Cheshire.⁴⁶

22. The Government says that the long-term tree canopy and woodland target is key to achieving the goals of the Net Zero Strategy. The target is expected to deliver around 20 per cent of the total area of new habitat creation and restoration needed to meet the Government's biodiversity goals, while also contributing to meeting water quality targets.⁴⁷ The EIP contains a range of actions to promote the protection of ancient woodlands, manage the resilience of the UK's woodlands, and scale up private sector funding for new woodland creation.

43 HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), January 2018

44 *Ibid.*

45 The earlier target in the 25YEP referred to increasing woodland cover. The EIP target refers to increasing tree and woodland cover, thus including trees outside of woodlands such as those in urban areas and on agricultural land.

46 HM Government, [Environmental Improvement Plan 2023](#), February 2023, p. 35

47 *Ibid.*

The England Trees Action Plan (ETAP)

23. To support the delivery of the tree planting target set for England, in May 2021 Defra published the England Trees Action Plan (ETAP) 2021–2024.⁴⁸ This was intended to be the ‘strategic framework’ for delivering the Government’s long-term vision for ‘treescapes in England’. It contained over 80 policy actions to be delivered in the current Parliament and was funded by the £624 million Nature for Climate Fund (which has since been increased to over £750 million).⁴⁹

24. In the ETAP the Government indicates that current planting trends for majority native broadleaf woodlands should continue, given the additional benefits they provide for nature and people as well as carbon.⁵⁰ The associated England Woodland Creation Offer grant (which we discuss further below) predominantly funds the establishment of native broadleaf woodlands at a large scale, to deliver public goods such as biodiversity, carbon storage and flood control.⁵¹ These commitments were reiterated in the EIP. It is not yet clear what will replace the ETAP to give long term direction for Government’s goals for woodlands when the current plan lapses in 2024.

Government targets for tree planting in the UK and the nations

25. Creating new woodland is widely agreed to be necessary for the UK to meet its commitment to achieving net zero greenhouse gas emissions by 2050.⁵² To contribute towards the delivery of Government’s net zero and other environmental goals, the Government committed in 2020 to a UK-wide target of creating 30,000 hectares a year of new woodland by the end of the current Parliament.⁵³ This equates to between 90 million and 120 million trees each year, depending on planting density.⁵⁴ This UK-wide target was restated in the Government’s October 2021 Net Zero Strategy setting out its approach to tackling climate change.⁵⁵

48 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

49 HM Treasury allocated more than £500 million in the March 2020 budget to fund trees and woodland as part of a Nature for Climate Fund to support tree planting and peatland restoration in England over the five years from 2020–21 to 2024–25. This was increased to £624 million in October 2021, and subsequently to over £750 million. National Audit Office, [Planting Trees in England](#), HC 1140, March 2022.

50 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

51 *Ibid.*

52 Parliamentary Office of Science and Technology, [Woodland Creation](#), POSTnote 636, January 2021; Climate Change Committee, [The Sixth Carbon Budget - The UK’s path to Net Zero](#), December 2020.

53 Department for Environment, Food & Rural Affairs, [England Tree Strategy Consultation](#), June 2020, p.6

54 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022

55 HM Government, [Net Zero Strategy: Build Back Greener](#), October 2021

26. Each of the UK's devolved nations has also set its own woodland creation targets:

- **Scotland** has committed to plant 18,000 hectares a year by 2024–25;⁵⁶
- **Wales** has committed to plant 2,000 hectares a year from 2020 onwards;⁵⁷ and
- **Northern Ireland** has committed to plant 900 hectares a year from 2020 to 2030.⁵⁸
- **England** has committed to planting 7,500 hectares a year by March 2025.⁵⁹

We examine below the progress made to date in meeting the Government's tree planting targets for England, and discuss ways in which the current rate of tree planting might be increased.

The UK Forestry Standard: "the right tree in the right place"

27. In order to deliver multiple benefits from woodlands and prevent the repetition of poor forestry practices of the second half of the last century, stakeholders and the Government generally agree that the principle of planting 'the right tree' in 'the right place' must be followed.⁶⁰ Ian Tubby, of the Forestry Commission told us that "it is very important not to revisit the 1970s practices of ploughing and planting peat soils and clearing ancient woodlands and conifer plantations being put in because they were more productive".⁶¹

28. To this end, the Forestry Commission developed the UK Forestry Standard (UKFS), first published in 1998,⁶² as the reference standard for sustainable forest management across the UK. Sir William Worsley, Chair of the Forestry Commission, told us that in order to plant 'the right tree' in 'the right place' trees should be planted to the UK Forestry Standard.⁶³

56 Scottish Government, [Protecting Scotland, Renewing Scotland: The Government's Programme for Scotland 2020–2021](#), September 2020

57 Welsh Government, [Woodlands for Wales. The Welsh Government's Strategy for Woodlands and Trees](#), June 2018

58 Department of Agriculture, Environment and Rural Affairs press release, '[Poots' planting pledge](#)', 2 March 2020; Official Report, Northern Ireland Assembly, [2 March 2023](#)

59 Environment, Food and Rural Affairs Committee, [Tree Planting: Government Response to the Committee's Third Report of Session 2021–22](#), First Special Report of Session 2022–23, HC 323

60 RSPB ([DEF0028](#)); HM Government, [Environmental Improvement Plan 2023](#), February 2023; Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

61 [Q14](#)

62 Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017), p. 1

63 [Q293](#)

Box 3: The UK Forestry Standard

The UK Forestry Standard (UKFS) is the reference standard for sustainable forest management across the UK, and applies to all woodland, regardless of who owns or manages it. The UKFS document covers key different elements of sustainable forest management: biodiversity, climate change, historic environment, landscape, people, soil and water.

The forestry agencies in each of the nations of the UK are the main bodies responsible for implementing the UKFS. These bodies assess forestry proposals against the UKFS before giving approval and carry out checks to ensure woodland owners and managers comply with forestry regulations.

Source: Forestry Commission, [The UK Forestry Standard](#) Fourth Edition, 2017

Government policy for the timber sector

29. Although the Government has recently made a commitment to the growth of sustainable and long-term timber supply by working with the forestry sector to increase the amount of “productive forestry” in England,⁶⁴ we have identified no single strategy which clearly articulates the Government’s vision for the timber sector in England.

30. The Government has been clearer in its commitment to increasing the use of timber in construction. Through the Clean Growth Strategy,⁶⁵ the 25YEP,⁶⁶ the ETAP and the Net Zero Strategy the Government has committed itself to working with key stakeholders to develop a policy roadmap to increase the safe use of timber in construction in England.⁶⁷ This roadmap is being developed through a cross-sector and cross-industry working group, the Timber in Construction (TiC) working group, which includes representatives of Defra, the Department for Energy Security and Net Zero (DESNZ), the Department for Levelling Up, Housing and Communities (DLUHC) and the Department for Business and Trade (DBT), the timber industry, and other stakeholders.⁶⁸

Views on the Government’s timber policies

31. The ETAP was intended to provide the strategic framework for delivering the Government’s long-term vision for treescapes in England. It might therefore have been expected to cover the sustainable harvesting of trees and use of timber: but contributors from the timber sector told us that they did not recognise the ETAP as a plan for the timber industry.⁶⁹ Some also expressed scepticism about the Government’s enthusiasm for timber production. Confor, a membership organisation for forestry and wood-using businesses, stated that the UK Government was communicating a “reluctance to accept the need to plant more productive woodland”; the Institute of Chartered Foresters raised concerns about a lack of Ministerial interest and strong leadership on timber production.⁷⁰

64 HM Government, [Environmental Improvement Plan 2023](#), February 2023, p. 5. The productivity of woodland or forest is its capacity to produce both timber, and non-market benefits such as recreation and other ecosystem services: Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017), p. 31.

65 HM Government, [The Clean Growth Strategy. Leading the way to a low carbon future](#), October 2017, p. 16

66 HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), January 2018, p. 47

67 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021, p. 20; HM Government, [Net Zero Strategy: Build Back Greener](#), October 2021, p. 179

68 Department for Environment, Food and Rural Affairs ([DEF0049](#)); Confor - Confederation of Forest Industries UK ([DEF0045](#))

69 Confor - Confederation of Forest Industries UK ([DEF0045](#)); Vastern Timber ([DEF0024](#))

70 Confor - Confederation of Forest Industries UK ([DEF0045](#)); Institute of Chartered Foresters ([DEF0039](#))

32. Trudy Harrison MP, Minister for Natural Environment and Land Use in the Department for Environment, Food & Rural Affairs (Defra), told us that Government had been engaging with the sector: a sector-led National Wood Strategy (NWS) for England was being developed by industry leaders, coordinated by Confor.⁷¹ This strategy is intended to highlight the opportunities for innovation and growth in the timber and wood processing sectors, and to outline the sector’s proposals for what actions are needed from the Government and industry to increase productive forestry and wood utilisation. The Minister also indicated that stakeholders had called on the Government for a Timber ‘sector deal’ to follow the NWS. She expected that a sector deal could be a mechanism for the Government and industry to agree a shared action plan to support, maintain, and grow the timber and wood processing sectors.⁷²

33. In our May 2022 report on *Building to net zero: costing carbon in construction* we recommended that the Timber in Construction roadmap should be delivered by the end of 2022 at the latest, and that it must comprehensively address the afforestation commitments made in the England Trees Action Plan and the need for timber construction products.⁷³ The Minister told us that the roadmap would now be issued following the issue of the sector-led NWS.⁷⁴

34. Other stakeholders told us that it was not clear how the Government’s policy objectives for forestry were to be aligned with related policies—for example, wider land use policies and the strategy to meet net zero by 2050. The Woodland Trust noted that while the Net Zero Strategy had set out the UK Government’s expectation for increased tree cover for carbon sequestration, it was not clear how this related to policy objectives concerning increased use of domestic timber.⁷⁵ WWF said that there was “little evidence” to suggest that the Government had a coherent, integrated plan for how to balance competing land uses—including forestry—in the most efficient way to meet its nature and climate targets.⁷⁶

35. In the UK Government’s National Food Strategy, issued in 2022, it made a commitment to publish a framework for land use in 2023, to “ensure we meet our net zero and biodiversity targets, and help our farmers adapt to a changing climate, whilst continuing to produce high quality, affordable produce that supports a healthier diet”.⁷⁷ This commitment was reiterated in the EIP in January 2023.⁷⁸ In March 2023 the Department for Science, Innovation & Technology and the Geospatial Commission published a policy paper which assessed demands on land, identified evidence gaps and made recommendations to “enhance the UK’s spatial data capabilities” in support of the forthcoming land use framework. It concluded that the UK lacked a shared, spatially-explicit evidence base that integrated data, technology and scientific knowledge to underpin land use decisions.⁷⁹

71 [Letter to the Chair from the Minister for Natural Environment and Land Use, Department for Environment, Food & Rural Affairs, relating to the Committee’s inquiry, dated 1 June 2023; Q266](#)

72 *Ibid.*; [Q267Ibid.](#)

73 Environmental Audit Committee, [Building to net zero: costing carbon in construction](#), First Report of Session 2022–23, HC 103

74 [Q332](#) [Trudy Harrison MP]

75 Woodland Trust ([DEF0040](#))

76 WWF UK ([DEF0042](#))

77 Department for Environment, Food & Rural Affairs, [Government Food Strategy](#), June 2022

78 HM Government, [Environmental Improvement Plan 2023](#), February 2023

79 Department for Science, Innovation & Technology and the Geospatial Commission, [Finding common ground: Integrating data, science and innovation for better use of land](#), May 2023

36. There are currently multiple overlapping strategies which purport to articulate the UK Government's ambitions, actions, and objectives for woodland creation. Stakeholders are concerned that it is unclear how the Government's policy objectives for forestry and the timber sector align with its land use and decarbonisation policies. Furthermore, it is not clear what will replace the England Trees Action Plan when it lapses in 2024 to give long term direction for Government's goals for woodlands.

37. Although it has some references to the timber sector, the England Trees Action Plan, intended to be the 'strategic framework' for treescapes in England, did not comprehensively articulate a vision for timber production. It has not provided an adequate framework for the forestry sector.

38. We therefore welcome Defra's engagement with the forestry, timber and construction sectors in relation to the industry-led National Wood Strategy and through the Timber in Construction working group. It is important that the proposed Timber in Construction Roadmap is published as soon as possible and provides clarity on how the growth of timber, and its use in domestic construction, will be encouraged.

39. *To give the sector greater clarity, we recommend that future strategies for forestry should be fully integrated so as to establish a clear and holistic long-term vision for all woodland creation types. The Government should clearly set out how forestry in England will contribute to the delivery of its policy objectives for timber as well as for nature recovery and climate.*

40. *We further recommend that the Timber in Construction roadmap should be closely related to, and developed in conjunction with, the Government's vision for the forestry sector as a whole. As we recommended in our recent report, Building to net zero: costing carbon in construction, this roadmap must address the afforestation commitments made in the England Trees Action Plan, and the need to demonstrate how timber supply in future decades will help to meet growing demand for timber construction products, in a comprehensive, integrated and strategic way.*

Progress in meeting tree planting targets

41. Meeting the UK-wide target of planting 30,000 hectares of woodland each year by the end of this Parliament is clearly integral to meeting the Government's targets for domestic nature recovery and the UK's target to reach net zero by 2050. Yet the Environment, Food and Rural Affairs Committee and the National Audit Office have both recently expressed doubts over the Government's capacity to meet its tree planting targets.⁸⁰

42. In 2021–22, the most recent year for which figures are available, 13,800 hectares of new woodland were created in the UK, which was 4 per cent higher than the level reported in 2020–21.⁸¹ Current tree planting rates are nevertheless well below the target rates for each nation (Table 1). Scotland has consistently had the highest planting rates: 76 per cent of new planting in the UK in 2021–22 was in Scotland. In 2021–22, the latest year for which data is available, 2,260 hectares were planted in England.⁸²

80 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022, and Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

81 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, [p.45](#).

82 *Ibid.*, p.42.

Table 1: New planting by UK nation since 2017-18 against national tree planting targets (hectares)

Year	England	Scotland	Wales	Northern Ireland	United Kingdom
2017/18	1,500	7,140	200	210	9,050
2018/19	1,410	11,210	670	240	13,530
2019/20	2,340	11,050	80	200	13,660
2020/21	2,050	10,660	290	280	13,290
2021/22	2,260	10,480	580	540	13,860
2022/23 (provisional figures)	3,130	8,190	1,190	450	12,960
Planting target	7,500 ha/ year by 2024–45	18,000 ha/ year by 2024–45	2,000 ha/ year from 2020 onwards	900 ha/year by 2030	30,000 ha/ year by 2024–25
Percentage of yearly planting target achieved in 2021–22	30%	58%	29%	60%	46%

Source: House of Commons analysis of Forest Research data (Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p.42, 2022 and Forest Research, [Provisional Woodland Statistics](#), 2023). 2021–22 is the latest year for which official planting statistics are available.

43. Provisional statistics for new tree planting in 2022–23 (Table 1) again show that planting rates in England appear to have remained at less than half of the required 7,500 hectares per year. In addition, planting rates in Scotland, Northern Ireland and the UK appear to have reduced compared to the previous year. This means that with only one year of planting left to achieve the target, planting rates in the UK and England are less than half of the required 30,000 hectare and 7,500 hectares per year targets respectively (Table 1). The CCC’s most recent report to Parliament on the progress made in reducing UK emissions concluded that “tree-planting rates continue to be too low and are not increasing at the rate required”. It reports that rates will need to double by 2025 for the Government to reach its target of 30,000 hectares per year of woodland creation.⁸³

44. Asked whether the tree planting target in England was likely to be met in 2024, Trudy Harrison MP, Minister for Natural Environment and Land Use, would not commit herself, merely expressing confidence that the Government would be “in a much better place” as a result of a “multi-pronged attack” to increasing planting rates, working with private landowners and the public forestry.⁸⁴ On the same topic, Sir William Worsley, Chair of the Forestry Commission, said that the target in England “is and always has been a hugely aspirational target.” He said it is unlikely that the planting target would be met in 2024, stating: “I think the trajectory will be on the way towards that”.⁸⁵

83 Climate Change Committee, [Progress in reducing UK emissions: 2023 Progress Report to Parliament](#), June 2023

84 [Q315](#)

85 [Qq312–320](#)

Views on the UK Government's tree planting targets

45. In the ETAP the Government indicated its intention to increase domestic supply of timber, although Ministers set no specific target for how much of UK timber use should be sourced domestically.⁸⁶ Some witnesses expressed concern about the Government focusing too much on tree-planting numbers rather than the overall goals that the tree-planting was meant to deliver: they suggested that a subdivision of the tree-planting target could be beneficial.

46. Confor noted that there was no breakdown of the 30,000 hectares per year target into policy areas such as wood production. Stuart Goodall, its CEO, thought there was “a danger that we look at hectares and numbers of trees rather than what we are trying to achieve” and suggested it would make sense to apportion planting targets based on desired outcomes.⁸⁷ The Woodland Trust considered that an estimate of how much timber production was required would give force to the current metrics for hectares of cover and tree numbers.⁸⁸ Graham Clark, Senior Land Use Policy Adviser at the Country Land and Business Association, suggested that the Government might “consider a target for more productive woodlands.”⁸⁹ The Royal Society for the Protection of Birds (RSPB) told us that they would welcome clear, differentiated targets for increasing woodland cover for different purposes including native woodlands for nature, climate, human health and well-being and forests established primarily for timber production.⁹⁰

47. A lack of clarity over what sort of planting should take place has practical implications. Ben Goh, Commercial Manager at Maelor Forest Nurseries, told us that because of lead in times of four to five years between deciding which species to grow and the trees being available to plant, as well as the “limited shelf life and window of saleability” of saplings, the sector required clarity on the volumes and types of saplings that are needed to ensure that planting targets can be met while limiting waste.⁹¹ Gresham House, an asset management company which invests in forestry, told us that a lack of certainty of long-term plans to support productive forestry was a barrier to private sector investment in tree planting.⁹²

48. Asked whether the Government would consider introducing specific targets for different targets for the types of woodland that should be planted to achieve different goals, Minister Harrison thought it premature to make a specific commitment, but indicated that targets would be considered as part of Defra's development of a Land Use Framework. Through this framework, the Government would seek to understand “what types of woodland are needed, and where, to support that social, cultural ecosystem but also making sure that we plant the right types of trees in the right types of areas”.⁹³

49. Tree planting and woodland creation are vital for delivering many of the Government's environmental targets and commitments, as well as providing a domestic source of timber. We therefore support the tree planting targets set by the UK Government and welcome the commitments to increase woodland cover in England made in the Environmental Improvement Plan.

86 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

87 [Q20](#)

88 [Q19](#) [Nick Philips]

89 [Q117](#)

90 RSPB ([DEF0028](#))

91 [Q118](#)

92 Gresham House ([DEF0057](#))

93 [Q272](#) [Trudy Harrison]

50. We are concerned about the current rate of tree planting. In 2022–23, tree planting rates across the UK were at similar levels to the previous four years and remained below half the rate required to meet the overall target of 30,000 hectares per year by March 2025. At this rate it is extremely unlikely that current tree planting targets for England or the UK will be met.

51. *We recommend that in its response to this report the Government provide an assessment of the progress of tree planting in (a) England and (b) the UK against the targets set by Ministers; set out its latest and most realistic estimate of the numbers of trees likely to have been planted by March 2025, and indicate whether it plans to adopt policies to accelerate the current rate of planting.*

52. To ensure that the nation's woodlands help to deliver the Government's ambitions for nature, carbon storage and timber production, several stakeholders have called on the Government to apportion tree-planting targets in line with desired outcomes, to ensure that the right balance of outcomes is achieved from woodland creation. We agree. This initiative could also give the forestry sector and investors clearer direction as to the sort of woodlands which ought to be created under the policy.

53. *In order to give the forestry sector greater clarity, we recommend that following the development of the Land Use Framework, the Government divide its overall tree planting targets into sub-categories for the types of woodland needed to achieve different goals. These targets should be underpinned by the clear, holistic long-term vision common to the timber and forestry sectors which we recommend above.*

3 Delivery of tree planting

54. This chapter considers how the Government's tree planting targets can be achieved and best utilised to provide a range of benefits from the nation's woodlands, including the increased domestic production of timber.

Tree planting by Forestry England

55. Of the total UK woodland area, 0.86 million hectares (26 per cent) is owned or managed by Forestry England, Forestry and Land Scotland, Natural Resources Wales or the Forest Service (in Northern Ireland).⁹⁴ State-owned forests are substantial suppliers of domestically grown timber. For example, Sir William Worsley told us that while Forestry England manages only 15 per cent of the woodland in England, it produces about 50 per cent of the sawlog timber.⁹⁵ Forest Research estimated that in 2021, private sector woodlands accounted for 62% of softwood production and 88% of hardwood production.⁹⁶

New planting on the Forestry England estate

56. Despite its current role in supplying timber, and forecast declines in softwood availability, Forestry England is not contributing significantly to new planting. In 2021–22, 95 per cent of woodland creation in the UK was carried out by the private sector.⁹⁷ In England in 2021–22, Forestry England planted just 0.48 ha of conifers and 4.05 ha of broadleaves, all of which was on Forestry England's freehold land.⁹⁸

57. Forestry England has a target to plant 2000 hectares of new woodland between 2021 and 2026 (revised from a previous target of 2400 hectares).⁹⁹ The Forestry Commission told us in June 2023 that Forestry England had planted 303 hectares against this target.¹⁰⁰ When asked in May 2023 why Forestry England had planted so little new woodland, Sir William said that it has been held back from contributing to new tree planting by an inability to purchase land: given that the vast majority of forestry in England was owned by private landowners, he told us “our real incentive is to get private landowners, institutions, local authorities and so on to plant, using the various different grant mechanisms that we have in place”.¹⁰¹

58. Minister Harrison confirmed that Forestry England had recently been given permission to purchase land,¹⁰² and Sir William Worsley said that Forestry England would try to grow the freehold area of the estate to maintain its productivity.¹⁰³ Analysis by Tilhill Forestry, a forestry management company, suggests that the commercial forestry market has been particularly competitive in recent years, in part driven by interest in

94 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p. 5

95 [Q275](#) [Sir William Worsley]

96 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 2 UK-Grown Timber, p. 7

97 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting

98 Communication from Forest Research to Committee staff

99 Forestry England, [Growing the future: 2021–2026](#), June 2021. Forestry England indicated that the revision was in response to prevailing market conditions and the levels of interest in the leasehold offer.

100 Forestry Commission ([DEF0058](#))

101 [Q278](#)

102 [Q288](#)

103 [Q269](#)

natural capital payment opportunities.¹⁰⁴ Gresham House expects interest in forestry investments, both for production of timber and wider environmental and social benefits to continue.¹⁰⁵ In the future, a more competitive market for land which is suitable for forestry or for natural capital payments—or both—may limit Forestry England’s ability to purchase land to expand its estate.

59. Forestry England told us that it had instead pursued leasing arrangements through the Forestry England Woodland Partnership.¹⁰⁶ Forestry Research told us that provisional figures for 2022–23 show that 0.5 per cent of new planting undertaken by Forestry England was on leasehold land, with the remainder on freehold.¹⁰⁷ The Forestry Commission told us that the Forestry England Woodland Partnership had received over 20 applications to date: two lease agreements, had been concluded, both of which were with public organisations, while negotiations were ongoing with one private landowner and one corporate organisation.¹⁰⁸

Restocking of Forestry England plantations

60. Restocking after felling is an important component of future timber supply. On our visit to timber and forestry businesses in Shropshire, representatives from the private sector reported that between 5 and 6 per cent of the Forestry England estate was awaiting restocking; they attributed the delay in restocking to insufficient resources, and expressed concerns that this could severely limit future timber supply in future decades.¹⁰⁹ The Forestry Commission told us however that as at July 2023 only 2.86 per cent (7085.57 ha) of Forestry England landholdings was awaiting restocking.¹¹⁰

61. Sir William Worsley told us that Forestry England carried out a substantial amount of restocking: he said “we like to restock as soon as we can” to prevent regrowth on felled sites, as regrowth made it more expensive to plant. When restocking did not take place soon after felling, there were “economic reasons as well as pest and disease reasons that you might do otherwise”.¹¹¹ Timber production from Forestry England’s existing estate is not set to continue at current rates: Sir William Worsley explained that as Forestry England’s mature conifer plantations are felled, they are to be replanted in accordance with the UK Forestry Standard, with more open ground and broadleaf species.¹¹²

62. According to Forestry Research statistics, Forestry England has restocked 2.13 thousand hectares of predominantly conifer species between 1971 and 2022, compared to 1.84 thousand hectares of publicly funded restocking of predominantly broadleaf by the private sector over the same period. Over the past 5 years, Forestry England has restocked an average of 2.12 thousand hectares compared to 0.26 thousand hectares of publicly funded restocking by the private sector.¹¹³ No estimates of areas planted without grant in aid are included in these figures. As a result, the reported figures for the private

104 Tilhill Forestry, [The UK Forest Market Report](#), 2022

105 Gresham House ([DEF0057](#))

106 [Q268](#)

107 Correspondence between committee staff and Forest Research

108 Forestry Commission ([DEF0058](#))

109 Details of the Committee’s visit to commercial forestry and timber businesses are set out in Annex 2.

110 Correspondence between committee staff and the Forestry Commission

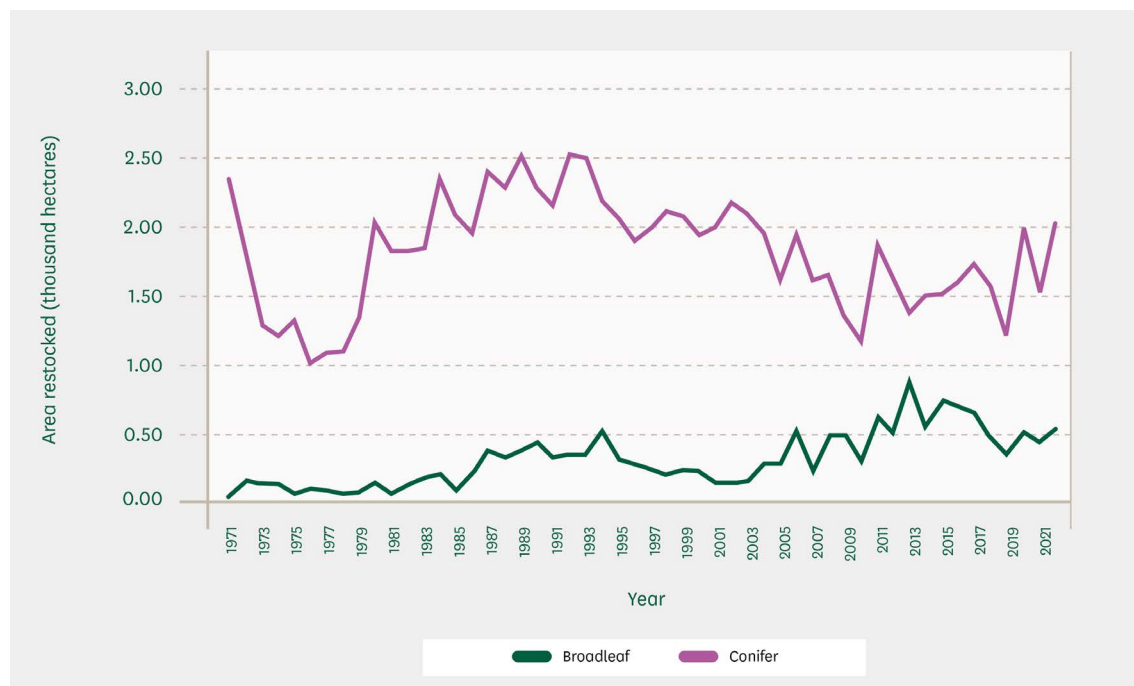
111 [Qq325–330](#)

112 [Q268](#)

113 Forest Research, [Woodland Statistics](#), specifically [accompanying data set C](#), tab C2 (accessed 13 July 2023)
Private sector figures are based on areas for which grants were paid during the year.

sector are unlikely to reflect the true levels of restocking activity.¹¹⁴ Figure 4 shows that restocking rates for conifers on the Forestry England estate have consistently been higher than for broadleaves. Conifer restocking rates have reduced over time as restocking rates for broadleaves.

Figure 4: Restocking by Forestry England, by species type, 1971–2022



Source: Forest Research, [Woodland Statistics](#), [accompanying data set C](#).

63. Forestry England has planted only 303 hectares against its target of 2,000 hectares of new planting between 2021 and 2026. Despite pursuing leasehold partnership arrangements, in recent years Forestry England has planted virtually no new woodlands on leasehold land.

64. *Decisive action and a clear delivery plan are required for Forestry England to meet its target of planting 2,000 hectares of new woodland by 2026. We recommend that a plan be prepared by the end of October 2023 and published for transparency, to demonstrate to the public and the private sector that Forestry England is playing its part in meeting the national tree planting targets and in contributing to future timber supply.*

65. The private sector is concerned about the implications of delays to Forestry England restocking on future timber supply. Forestry England is responsible for a significant proportion of domestic timber production and should be appropriately resourced to carry out timely restocking.

66. *In addition to planting new woodland where possible and using good forestry practice to do so, we recommend that Ministers ensure that Forestry England has sufficient resources to restock cleared forest areas as soon as possible, to ensure that Forestry England at least maintains its contribution to future timber supply.*

Public sector delivery of tree planting

67. As a major landowner, central government has a potentially significant role to play in aiding nature recovery, contributing to carbon storage, and achieving timber production targets. For example, the Ministry of Defence (MoD) owns or otherwise controls approximately 1 per cent of the UK's land mass and has access rights for a further 0.8 per cent.¹¹⁵ When asked whether the Government was analysing the extent to which the central government estate could contribute to woodland creation and timber production, Minister Harrison said “We are certainly working with other Government departments to roll out the 16.5 per cent ambition for tree canopy cover” under current Greening Government Commitments. She nevertheless pointed out that there were competing land uses—for example, farming—which had to be considered, and noted that much of the land under the control of the Ministry of Defence was tenanted or required for training or national security purposes.¹¹⁶

68. The Greening Government Commitments (GGCs) set out the actions UK government departments and their partner organisations will take to reduce their impacts on the environment. First established in 2011, the current commitments cover the period 2021 to 2025 and included a commitment to nature recovery for the first time. The commitments set a goal for departments and partner organisations ‘with the greatest potential to improve biodiversity’ to develop a Nature Recovery Plan for their land, estates, development, and operations. All Nature Recovery plans ought to include a specified commitment, where relevant, to increasing tree planting and woodland cover.¹¹⁷

69. Although the current commitments are to continue until 2025, the last published annual report of departmental progress against the GGCs appears to have been made for 2019–20.¹¹⁸

70. Central government is a major landowner. The Greening Government Commitments commit the Government to identify opportunities to contribute to nature recovery on the Government estate. Woodland creation can be a significant contributor to nature recovery.

71. We recommend that Ministers commission work to identify opportunities for woodland creation on the Government estate, to advance nature recovery further and increase timber production.

72. Public annual reporting on progress towards the Greening Government Commitments apparently ceased in 2019–20. We recommend that annual reporting of this nature should be re-established as soon as possible, to give assurance to Parliament and the public that the Government is contributing to nature recovery to the fullest extent possible.

115 National Audit Office, [Environmental Sustainability Overview](#), HC 318, May 2020

116 [Qq286–287](#)

117 HM Government, [Greening Government Commitments. Actions UK government departments and their agencies will take to reduce their impacts on the environment](#) (accessed 13 July 2023)

118 HM Government, [Greening Government Commitments Annual Report 2019–20](#), October 2020

Incentivising private sector tree planting

73. Minister Harrison and Sir William Worsley were clear that the private sector should deliver most of the tree planting envisaged under Government targets, since only 16 per cent of woodland in England is owned by the public forest estate.¹¹⁹ The Government is thus reliant to a large extent on incentivising landowners and land managers to deliver Ministerial goals for tree planting and nature recovery. This is not to be taken for granted: woodland creation is an expensive activity with high up-front costs, considerable labour and equipment requirements, and an ongoing management commitment.

74. Recent reports on tree planting have identified a range of factors which influenced landowners' decisions to make their land available for planting trees (Table 2).

Table 2: Factors influencing landowners decision to plant trees

Factor	Explanation
Suitability and availability of land	Landowners must decide whether to forego 'premium' agricultural land for woodland creation, including considering the difficulty of deforesting land in the future, due to permanency requirements. ¹²⁰ In spring 2020, the Royal Forestry Society conducted a survey of its members. Amongst the 58 per cent of respondents who were not planning woodland creation, by far the most significant barrier cited was lack of available land (55 per cent). Only 10.3 per cent of respondents cited tree planting being "financially unattractive" as a barrier. ¹²¹
Skills and capacity	Whether they have the understanding and skills for woodland creation and management. ¹²²
Tenancy arrangements	If land managers are tenants, the legal framework their tenancy operates under may prohibit use of land for non-agricultural purposes. ¹²³
Grant schemes	Understanding and awareness of available grant schemes. ¹²⁴ Whilst increased support for maintenance under the England Woodland Creation offer was welcome, the timescales over which the payments are made (10 years) were not considered long enough as it can take 20 years for new woodland to generate commercial income from the sale of timber. ¹²⁵
Application and approvals process for tree planting	The ease of applying for the appropriate grants. ¹²⁶ Some of the processes are seen as too bureaucratic by some land-owning and forestry organisations. ¹²⁷

119 [Q283](#) [Sir William Worsley]; [Q286](#) [Trudy Harrison MP]

120 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022, p. 35

121 Royal Forestry Society, [Woodland Creation: Opportunities and Barriers: Survey results 2020](#), June 2020

122 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022

123 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356, p. 36

124 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022, p. 35

125 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

126 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022, p. 35

127 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

The England Woodland Creation Offer

75. The costs associated with meeting the UK's tree planting targets are likely to be significant. Gresham House estimated that to meet the Government's planting target of 30,000 ha per year would require around £815m per year of Government support, which over a five-year period would amount to an equivalent capital contribution of at least £4bn.¹²⁸ While these estimates are based on the UK-wide target, it is reasonable to assume that the costs associated with meeting the England-specific target of 7500 ha per year are likely to be significant.

76. In June 2021, the Forestry Commission launched the England Woodland Creation Offer (EWCO), part of the Nature for Climate Fund.¹²⁹ HM Treasury allocated more than £500 million in the March 2020 budget to fund trees and woodland between 2020–21 and 2024–25. This was increased to £624 million in October 2021, and subsequently to over £750 million.¹³⁰ While the Government offers several grant schemes and other incentives which aim to incentivise tree planting—including the Urban Tree Challenge Fund, the Local Authority Treescapes Fund and Woodlands into Management Forestry Innovation Fund—the EWCO is the main funding scheme available to incentivise the private sector to engage in widescale woodland creation.¹³¹

77. The Government aims to use EWCO grant funding to support the creation of 11,000 hectares of new woodland by 2024–25.¹³² When the Nature for Climate Fund ends in 2025 future woodland creation grants will be delivered through the Countryside Stewardship Plus scheme and the Landscape Recovery Scheme stream of the Environmental Land Management Scheme: these are intended to mirror the England Woodland Creation Offer.¹³³

78. Landowners, land managers and public bodies can apply to the EWCO to receive support for capital items and activities required to create new woodland, via planting and via natural colonisation, on areas as small as one hectare.¹³⁴ Under EWCO, standard costs are paid at 100 per cent up to £13,000 per hectare.¹³⁵ In addition, landowners can get supplementary contributions, if the woodland delivers specified public benefits including for woodlands that restore nature and species; help reduce the risk of flooding; improve water quality; improve water habitat; or provide access to woodlands for the public to enjoy. EWCO also includes ten years of annual maintenance payments to help establish the young trees once the capital works are complete. Grant recipients must maintain the young woodland for a total of 15 years after the last capital works are complete.¹³⁶

128 Gresham House ([DEF0057](#))

129 Forestry Commission, [England Woodland Creation Offer Grant Manual](#), 22 June 2022

130 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022, p. 5; HM Government, [Environmental Improvement Plan 2023](#), February 2023, p. 189

131 National Audit Office, [Planting Trees in England](#), HC 1140, March 2022

132 Forestry Commission, [England Woodland Creation Offer Grant Manual](#), 22 June 2022

133 HM Government, [Environmental Improvement Plan 2023](#), February 2023, pp. 50 and 195

134 Forestry Commission, [Tree planting and woodland creation: overview](#) (accessed 13 July 2023)

135 [Q305](#) [Trudy Harrison MP]

136 Forestry Commission, [England Woodland Creation Offer Grant Manual](#), 22 June 2022 page 30

Stakeholder views on the England Woodland Creation Offer

Using EWCO to plant productive woodlands

79. The EWCO predominantly funds the establishment of native broadleaf woodlands at a large scale to deliver public goods such as biodiversity, carbon storage and flood control.¹³⁷ Ian Tubby of the Forestry Commission said that the England Woodland Creation Offer was “species agnostic”, and that it was down to the owners to decide what they want to plant.¹³⁸ The Country Land & Business Association (CLA) observed that the EWCO was perceived as favouring broadleaf planting to deliver public, biodiversity and climate benefits rather than conifer planting to deliver timber production. While the CLA did acknowledge that the scheme could be used to plant productively, they said that “Planting is capital intensive at the beginning, and as the grants favour broadleaf outcomes, that is what people want to do. There is, or would be, appetite to plant productively if the scheme were designed differently.” The CLA said it would help if the Government was clearer as to what sort of woodlands Ministers expected the scheme to deliver.¹³⁹

80. The Institute of Chartered Foresters said that the dominance of broadleaf species in English woodlands “is very much dictated by the grant structure”, with grants having “favoured a very high percentage of broadleaves” since 1985 with only a small percentage of conifer allowed within the mix.¹⁴⁰ In Confor’s view, Defra’s grant, regulatory and legislative levers were currently used to achieve narrow environmental objectives in England, rather than timber production.¹⁴¹

81. Gresham House was confident that there would continue to be “a very active private investment appetite for forestry” and was of the view that Government incentives were less important to encouraging investment in productive forestry than other factors, such as a lack of certainty over the outcome of planting application processes. Gresham House said that investors were attracted to forestry investment by positive environmental and social opportunities as well as stable long-term returns. The economic value of the environmental benefits of productive forestry could therefore encourage more planting of productive forestry for long term timber production at the same time as ensuring carbon and environmental benefits are realised, while allowing public funding to be dedicated to planting which was focussed on delivering environmental benefits. Gresham House observed that the financial opportunities associated with carbon storage, biodiversity and other ecosystem services were still evolving; these would become increasingly important factors in the long-term financial viability of tree planting.¹⁴²

Level of grant funding available

82. We received a range of views on whether the level of available grants was sufficient and appropriate. Stuart Goodall of Confor highlighted that Government grants for woodland creation needed to be sufficient to persuade landowners to take land out of agricultural production. While the mechanism and the finance available under the EWCO

137 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

138 [Q6](#)

139 [Q117](#) [Graham Clark]

140 [Q122](#) [Justin Mumford]

141 Confor - Confederation of Forest Industries UK ([DEF0045](#))

142 Gresham House ([DEF0057](#))

was “good enough”, it needed to ensure a mix of both native and productive planting.¹⁴³ The Institute of Chartered Foresters stressed the importance of making forestry financially attractive for landowners, whether the benefits were to be ecosystem services, timber, renewable energy, improved farming, green infrastructure or a combination of these.¹⁴⁴ Nick Phillips, from The Woodland Trust, said that landowner decisions on investment in plantation forests depended substantially on opportunity costs and economic viability. Land prices were cited as a factor: productive plantations were therefore more likely to be established in the north of England.¹⁴⁵

83. The Institute of Chartered Foresters questioned whether current grants were sufficient to cover the ongoing maintenance costs of woodlands beyond the establishment phase. Justin Mumford explained that because the income available from timber grown in new woodland would be “delayed by 20 years”, grants did not cover the full costs of establishing and then maintaining the woodlands. While ongoing support had “greatly improved this year”, it was still probably “inadequate to encourage landowners financially to plant trees”, against the opportunity costs of planting other things.¹⁴⁶ By the Institute’s calculations, planting a standard hectare of land with trees, and establishing and maintaining it for 20 years, would cost around £18,000 per hectare. Justin Mumford said that foresters and landowners had to seek alternative sources of income to fund woodland creation such as through woodland carbon schemes or biodiversity net gain schemes.¹⁴⁷

84. Sir William Worsley said that “on the whole [Forestry Commission] grants are really pretty good” and described them “as good as they have ever been in my professional career.” In his previous role as the Government’s Tree Champion he had met “well over one hundred different people involved in forestry, trees and everything in England. Out of those one hundred people only about two people complained about the grant money, and this was even before we had launched the woodland creation offer”. He stated that there are a “number of top-ups you can get if you want to provide public access or for various environmental benefits” and that the grants have recently been uplifted. The England Woodland Creation Offer provided 100 per cent of grant funding up to £13,000 per hectare (increased from £8,500 per hectare¹⁴⁸) and that Defra had “increased that management grant from £300 per hectare to £350 per hectare” for the first 10 years.¹⁴⁹

Delays to the application and approvals process for EWCO

85. The Environment, Food and Rural Affairs Committee found that the application and approvals process for tree planting was seen as too bureaucratic by some landowning and forestry organisations.¹⁵⁰ This issue was also raised with us. The Institute of Chartered Foresters (ICF) told us that the time it took for tree planting projects to receive grant funding and regulatory approval was a barrier to tree planting taking place. Justin Mumford of the ICF explained that applying for the EWCO and the supporting Woodland Creation Planning Grant process was a complex and time-consuming two-stage process “which involves considerable consultation in order to develop a remit and develop an evidence

143 [Q27](#) [Stuart Goodall]

144 Institute of Chartered Foresters ([DEF0039](#))

145 [Q20](#) [Nick Phillips]

146 [Q137](#) [Justin Mumford]

147 [Q138](#)

148 Forestry Commission, [eAlert: England Woodland Creation Offer series](#), 24 June 2021

149 [Q305](#) [Trudy Harrison MP and Sir William Worsley]

150 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356, p.34

base” against the environmental impact assessment regulations. He said that over the course of applying there could be a loss of momentum and morale, observing that other land uses, such as agriculture, provided a more attractive return, and called for a quicker administrative process for these woodland creation grants.¹⁵¹ Timber Development UK called for government to streamline the tree planting process in England, as “bureaucracy and limited funding is deterring progress”.¹⁵²

86. On the Committee’s visit to a commercial tree nursery, Maelor Forest Nurseries, we were told that the nursery sector had increased production in anticipation of increased requirement for saplings as a result of the Government’s tree planting targets. However, they had experienced significant order cancellations due to delays in the approval of woodland creation schemes.¹⁵³

87. Sir William Worsley told us that the Forestry Commission had received 793 applications for the EWCO scheme, equating to 5,574 hectares of new woodlands.¹⁵⁴ Asked about delays in the processing of EWCO applications, which are administered by Forest Services in the Forestry Commission, he accepted some responsibility:

“Of the schemes in process, about 50 per cent are being held by us because we are not moving quickly enough, but the other 50 per cent of applications are missing information so they have to go back to the agents.”

To address this, the Forestry Commission is trying to change the process so that there is only one 28-day period of consultation. In addition, the Commission is developing an approach in which there will be a ‘presumption to plant’ in areas of low environmental risk: we address this approach in more detail below. Sir William also observed that many applications were for small areas: the current median size of EWCO applications is for 4 hectares. Given that the administrative process is the same for applications of all sizes, Sir William told us he would like to encourage applications for larger areas.¹⁵⁵

88. The Government is relying on third parties to plant the lion’s share of the trees required to meet its tree planting targets and thus deliver timber production as well as a suite of climate and environmental objectives. It is therefore crucial that the Government is clear on what it requires prospective planters to do, and that it provides competitive and targeted incentives to encourage this. Given that the timber sector is a for-profit sector, it is appropriate that the England Woodland Creation Offer pays public money to incentivise the provision of public goods in the form of ecosystem services and nature restoration. We are nevertheless concerned that prospective planters seeking to plant productive woodlands are deterred from applying for the scheme because of a perception that it does not support productive forestry. The Government must therefore communicate as clearly as possible the fact that the England Woodland Creation Offer—the main grant to incentivise tree planting—can be used to support mixed forests which are commercially productive as well as benefiting nature recovery.

151 [Q137](#) [Justin Mumford]

152 Timber Development UK / Timber Trade Federation ([DEF0017](#))

153 Details of the Committee’s visit to commercial forestry and timber businesses are set out in Annex 2

154 [Q302](#)

155 [Qq302–304](#)

89. *We recommend that in all its forestry and timber strategies the Government must ensure that it is clear to private landowners and the commercial forestry sector that grant schemes are intended to support planting for domestic timber production through the establishment of mixed woodlands planted to the UK Forestry Standard, as well as the establishment of majority native broadleaf woodlands.*

Where to plant

90. To achieve the benefits of tree planting, avoid negative environmental outcomes, and minimise trade-offs with other land uses, it is essential that ‘the right tree’ is planted in ‘the right place’. Evidence received by the Environment, Food and Rural Affairs Committee during its inquiry on tree planting highlighted the environmental risks of planting trees inappropriately: for example, the RSPB is still carrying out peatland restoration in the Flow Country, in northern Scotland, to reverse the deleterious impact of earlier planting on peat soils. In addition, planting trees in priority habitats can undermine biodiversity recovery efforts.¹⁵⁶

91. Some witnesses suggested that the Government take a strategic, UK-wide approach to identify the best places for new woodland and forests, avoiding sensitive sites and species.¹⁵⁷ The Woodland Trust suggested that commercial timber plantations should not be sited on priority habitats, including ancient woodland, on high-grade agricultural land or on land that would be better suited to native, broadleaved woodland.¹⁵⁸ Mapping commissioned by Friends of the Earth had identified 1.3 million hectares of land suitable for new trees, woodlands, and forest in England which it was argued could be made available for woodland through a reduction in livestock numbers and the adoption of healthier, sustainable diets.¹⁵⁹

92. In the ETAP the Government stated that “Better informed targeting maps will be critical to delivering the right trees in the right places and help identify where planting and establishment can provide particular natural capital benefits whilst being sensitive to environmental and social constraints”.¹⁶⁰ The Land Use Framework for England which Defra has undertaken to publish later in 2023 is expected to set out how best to balance multiple demands on land.¹⁶¹

The Forestry Commission’s “presumption to plant” mapping

93. As a means to reduce the administrative burden involved in applying for woodland creation scheme grants, the Forestry Commission is developing a ‘presumption’ that tree planting in certain areas will generally be acceptable. This is intended as a means to expedite applications to plant trees in ‘low risk areas’ where planting would not have negative impacts on ecologically sensitive areas such as Sites of Special Scientific Interest.¹⁶²

156 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

157 RSPB ([DEF0028](#)); Woodland Trust ([DEF0040](#))

158 Woodland Trust ([DEF0040](#))

159 Friends of the Earth (England, Wales and Northern Ireland) ([DEF0022](#))

160 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021, p. 14

161 HM Government, [Environmental Improvement Plan 2023](#), February 2023, p. 12; [Q272](#) [Trudy Harrison MP]; [Q310](#) [Trudy Harrison MP]

162 [Q311](#) [Trudy Harrison MP]. Low risk areas exclude ‘Best and Most Versatile’ agricultural land, areas of peat, all sites designated for habitat or species conservation, National Parks and Areas of Outstanding Natural Beauty.

94. Sir William Worsley told us that ‘presumption to plant’ on low risk land would mean that planting could progress far more quickly.¹⁶³ The Commission’s analysis had identified around 3 million hectares of ‘low risk’ land suitable for planting in England.¹⁶⁴ When asked if the presumption to plant system will replace full environmental impact assessment in some cases, he responded:

“To do an environmental impact assessment the requirements are fairly high. It is an expensive thing to do and we are trying to push tree planting. In most cases an environmental impact assessment is not required. If it is low-risk land we want to see a presumption to plant and that will mean that we can progress the planting schemes far more quickly.”¹⁶⁵

The UK Forestry Standard would still apply to such planting, even if it was planned for low-risk areas where Environmental Impact Assessments were not required.¹⁶⁶

95. **To realise the benefits of tree planting, and to avoid detrimental outcomes, it is essential that the ‘right tree in the right place’ principle is followed. The ‘presumption to plant’ principle being developed by the Forestry Commission could be a useful tool to enable ecologically sensitive tree planting and faster approvals, and is likely to reduce the administrative burden entailed in woodland creation so as to encourage private landowners to apply for woodland creation grants.**

96. **The reliance on the UK Forestry Standard to ensure the sustainability of planting in areas identified as ‘low risk’ could provide a proportionate risk-mitigation mechanism. For this to operate effectively it is important that Forestry England maintain its monitoring of the compliance of new woodland with the UKFS beyond the establishment stage. We discuss this issue in further detail below.**

97. *For transparency, we recommend that the Forestry Commission publish a summary of the analysis underpinning the ‘presumption to plant’ system when details of how the system will work are announced.*

The contribution of natural regeneration to woodland creation

98. The England Woodland Creation Offer can be used to support natural regeneration,¹⁶⁷ which is the process by which trees and shrubs self-seed and spread.¹⁶⁸ This can be through natural colonisation by native species or through self-seeding conifers.¹⁶⁹ Witnesses explained that allowing natural regeneration after felling or around the edge of existing woodlands can have several advantages, including: boosting the resilience of woodlands to threats such as pests, disease and climate change, through “the potential for local genetic variation to be exploited and natural selection to take place”, to select for what grows

163 [Q321](#)

164 [Q316](#) [Sir William Worsley]. In England, the Forestry Commission has developed a series of opportunity maps, based on nationally available datasets to indicate where there are likely to be fewer constraints to, and biggest opportunities for woodland creation. The Forestry Commission told us that these maps do not mean woodland creation is not possible, or desirable, outside the ‘high opportunity’ areas.

165 [Q321](#)

166 [Q323](#) [Sir William Worsley]

167 Forestry Commission, [England Woodland Creation Offer Grant Manual](#), June 2022

168 The Woodland Trust, [Natural Regeneration: Expanding Tree Cover](#) (accessed 13 July 2023)

169 [Q191](#) [Dr Andrew Weatherall]

best;¹⁷⁰ avoiding soil disturbance, and thereby the release of carbon emissions from the soil usually associated with planting;¹⁷¹ and, by contributing to conserving biodiversity and expanding ancient forests.¹⁷²

99. Despite the advantages of natural regeneration, Dr Mike Morecroft, Principal Specialist on Climate Change at Natural England, said that natural regeneration “won’t be the right thing to do everywhere” and that more needs to be understood about where it can work and in what circumstances.¹⁷³ Dr Andrew Weatherall, Principal Policy Officer for Woodlands and Forestry at the RSPB, said that natural regeneration could be “a good thing within a forest management unit” but cautioned that difficulties would arise if natural regeneration led to woodland impinging on other habitats, such as deep peatland.¹⁷⁴ Sir William Worsley said that the prerequisites for natural regeneration as a means of increasing woodland cover were a seed source which was in the right place and in the right part of the country, and a means of ensuring that trees would establish themselves.¹⁷⁵

100. Whether natural regeneration can contribute to productive forestry depends on several further factors. Sir William Worsley explained that while the technique could be used to establish woodland for timber extraction, this would take longer because of lower tree density.¹⁷⁶ Dr Andrew Weatherall told us that whilst it was possible for natural regeneration to contribute to timber production, it was more difficult to achieve than tree planting and depended on how the process was managed. He suggested that where timber production was the objective, the broadcasting of seed into an area intended for natural regeneration could increase the density of woodland, while early identification and prevention of branching could produce native broadleaf species suitable for hardwood timber.¹⁷⁷ We received no evidence to suggest that natural regeneration was an efficient means of contributing to productive forestry for timber.

170 [Q190](#) [Dr Mike Morecroft]

171 [Q163](#) [Dr Mike Morecroft]; [Q167](#) [Dr Mike Morecroft]; [Q190](#) [Dr Mike Morecroft]

172 [Q191](#) [Professor Coomes]

173 [Q190](#)

174 [Q191](#)

175 [Q295](#)

176 [Qq295–298](#)

177 [Q191](#)

4 Sustainable timber production

101. In this chapter we examine the case for and means by which timber production in the UK can be increased sustainably, and the role of the UK Forestry Standard in delivering this.

Demand for timber

102. Globally, timber demand is predicted to rise: the World Bank estimates that global timber demand will quadruple by 2050, which it says may create challenges for sustainable timber production.¹⁷⁸ Confor has estimated that demand could increase by 78 per cent by 2050 if demand grows at the same pace as in the last ten years.¹⁷⁹

103. After the People's Republic of China, the UK is the highest net importer of forest products in the world,¹⁸⁰ importing 81 per cent of all its timber in 2021.¹⁸¹ Figure 5 shows that imported wood has consistently provided the majority of wood consumed in the UK. Demand for timber in the UK is growing: figure 6 shows that import quantities for sawn wood, wood-based panels, wood pellets and other wood¹⁸² have increased substantially in the past decade. Proportionally, imports of wood pellets increased the most, increasing by 514 per cent between 2012 and 2021. Defra told us that predicting future timber demand and supply was challenging, as trends fluctuated considerably in relation to national, regional, and global political and economic circumstances.¹⁸³

104. Drivers of demand for UK-sourced timber include:

- The increased use of wood as part of decarbonisation policies,¹⁸⁴ for example, the use of timber in construction instead of more carbon-intensive materials such as steel and cement, and the use of woody biomass for energy generation;
- recent pest and disease outbreaks in Europe which have caused both excessive production of wood for timber and subsequent contraction of long-term availability;¹⁸⁵
- the use of wood fibre in growing markets such as clothing fibre, and in bio-based plastics to replace plastics,¹⁸⁶ and
- the impact of the war in Ukraine on trade and timber supply chains.¹⁸⁷

178 World Bank Group, [World Bank Group Forest Action Plan FY16–20](#), April 2016; Parliamentary Office of Science and Technology, [Reducing the whole life carbon impact of buildings](#), POSTbrief 44, November 2021

179 Confor - Confederation of Forest Industries UK ([DEF0045](#))

180 Forestry Research, [Forestry Facts & Figures 2022](#), p.14

181 Forestry Research, [Forestry Statistics 2022](#): Chapter 3, Trade, p. 6

182 This includes roundwood, wood charcoal, chips, particles and residues: from 2017 it includes recovered wood

183 Department for Environment, Food and Rural Affairs ([DEF0049](#))

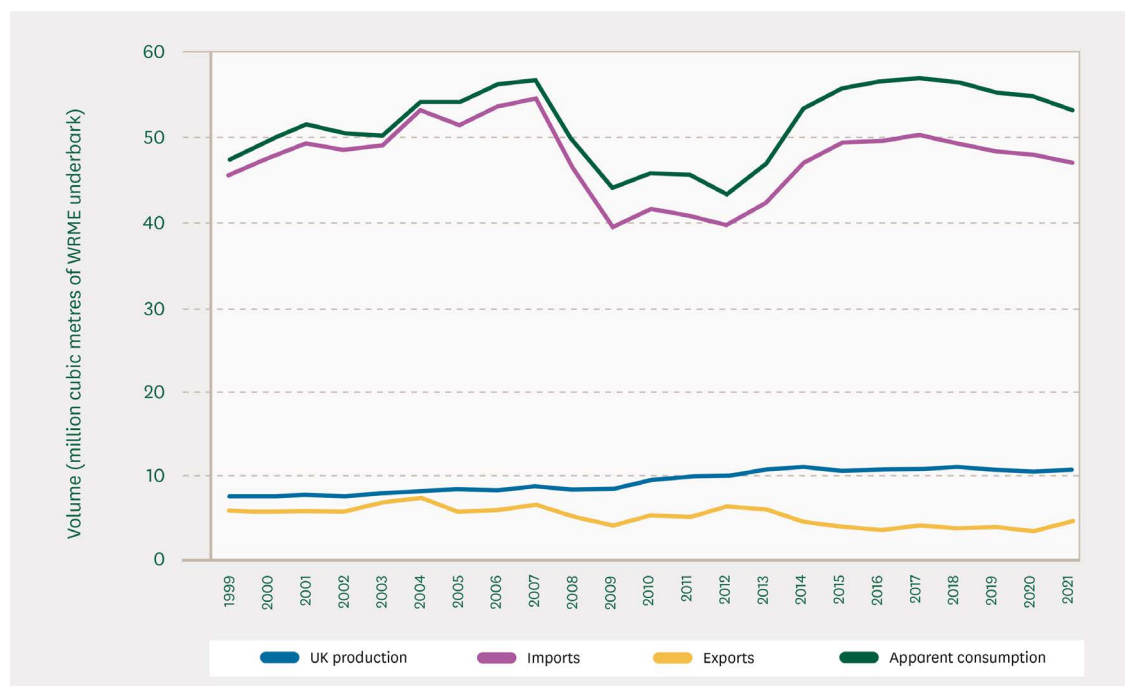
184 Confor - Confederation of Forest Industries UK ([DEF0045](#))

185 Department for Environment, Food and Rural Affairs ([DEF0049](#))

186 Dr Daniel Ridley-Ellis (Associate Professor at Edinburgh Napier University) ([DEF0034](#)); Royal Forestry Society ([DEF0023](#))

187 Department for Environment, Food and Rural Affairs ([DEF0049](#)); Grown in Britain ([DEF0027](#)); Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022, p. 31

Figure 5: Apparent consumption of wood in the UK, against import, export and UK produced quantities, 1999 to 2021



Source: Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 3: Trade, p.8. Apparent consumption is the amount of timber used as wood and wood products by people and industries in the United Kingdom. It is calculated as total domestic production plus imports, minus exports. Apparent consumption differs from actual consumption by the extent of changes in the level of stocks. It is not practical to collect information on actual consumption. WRME is Wood Raw Material Equivalent.

105. Stakeholders suggested that producing more timber domestically would help to meet demand and provide greater security of timber supply: Confor, Timber Development UK (TDUK) and the Mineral Products Association highlighted that increased UK timber production could help to improve security of supply.¹⁸⁸

106. Some stakeholders raised concerns about the environmental implications of rising global demand for timber, and suggested that the UK could help to meet demand and prevent harvesting of ecologically important forests elsewhere. WWF and the RSPB estimate that around one-fifth of the UK's imported timber footprint is from high-risk countries, including Brazil, China and Russia.¹⁸⁹ The British Ecological Society recommended growing the UK's commercial forestry sector, as it could reduce both the demand for imported timber products and the UK's international environmental footprint.¹⁹⁰ RSPB also acknowledged the role that UK commercial forestry could play in reducing deforestation by meeting a greater proportion of domestic demand,¹⁹¹ while Friends of the Earth highlighted the role of reducing the UK's reliance on imported wood products from high-risk countries.¹⁹² Confor was concerned that a reduction in the future

188 Timber Development UK / Timber Trade Federation ([DEF0017](#)); Confor - Confederation of Forest Industries UK ([DEF0045](#)); Mineral Products Association ([DEF0043](#))

189 WWF and RSPB, [Riskier Business: The UK's Overseas Land Footprint](#), July 2020

190 British Ecological Society ([BIO0050](#))

191 RSPB ([DEF0028](#))

192 Friends of the Earth (England, Wales and Northern Ireland) ([DEF0022](#))

Figure 6: UK wood import quantities, 2012 to 2021



Source: Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 3: Trade, p.11. 'Other wood' includes roundwood, wood charcoal, chips, particles, residues and from 2017, includes recovered wood.

global availability of wood risked putting pressure on natural and semi-natural forests in developing countries with “lower sustainability and environmental standards and weak forestry and trade governance”.¹⁹³

107. Ian Tubby, Head of Policy Advice, Forestry Services, at the Forestry Commission told us that “we are getting to a stage where globally we need to start making some quite difficult decisions around whether we start managing currently pristine woodlands for timber or if we start planting forests where timber production can be carried out sustainably”.¹⁹⁴

The need to increase timber production

Types of wood grown in the UK and their commercial applications

108. Timber processing industries in the UK predominantly use **softwood**, which is derived from conifer trees:

- The vast majority (92 per cent) of UK timber removals are of coniferous timber.¹⁹⁵
- UK broadleaf (i.e. **hardwood**) production represents 8 per cent of total UK wood removals: 84 per cent of this volume is used for wood fuel.¹⁹⁶

109. Against predictions of increasing demand for softwoods, forecasts show that UK softwood availability will peak in the late 2030s, before contracting (Figure 7). Forest Research’s 25-year forecast, issued in 2022, predicted that softwood availability would increase from 15.1 million m³ per annum in 2022–26 to a peak of 18.2 million m³ per annum in 2037–41 before reducing to 15.5 million m³ per annum in 2042–46.¹⁹⁷ The profile of the timber availability forecast is driven by the underlying age class structure of the forests, which reflects higher levels of planting from the post-war period to the late 1980s. This forecast is conservative: it does not include an estimate of production from area of woodland area created after 2020.¹⁹⁸ The forecast average softwood availability per annum over the 25-year period for each nation is:

- England: 3.5 million m³;
- Scotland: 10.7 million m³;
- Wales: 1.7 million m³; and
- Northern Ireland: 0.6 million m³.¹⁹⁹

Based on current projections, future timber security relies in a large part upon softwood production by the private sector. Over the forecast period, the GB public forest estate shows an overall reduction in forecast availability while the private sector estate shows an overall increase (Figure 7).²⁰⁰

194 Q9

195 Forest Research, [25-year forecast of softwood timber availability](#), 2022; Forest Research, [UK Wood Production and Trade: provisional figures](#), 2023, pp.6, 8

196 Forest Research, [UK Wood Production and Trade: provisional figures](#), 2023 pp.6, 8 and 13

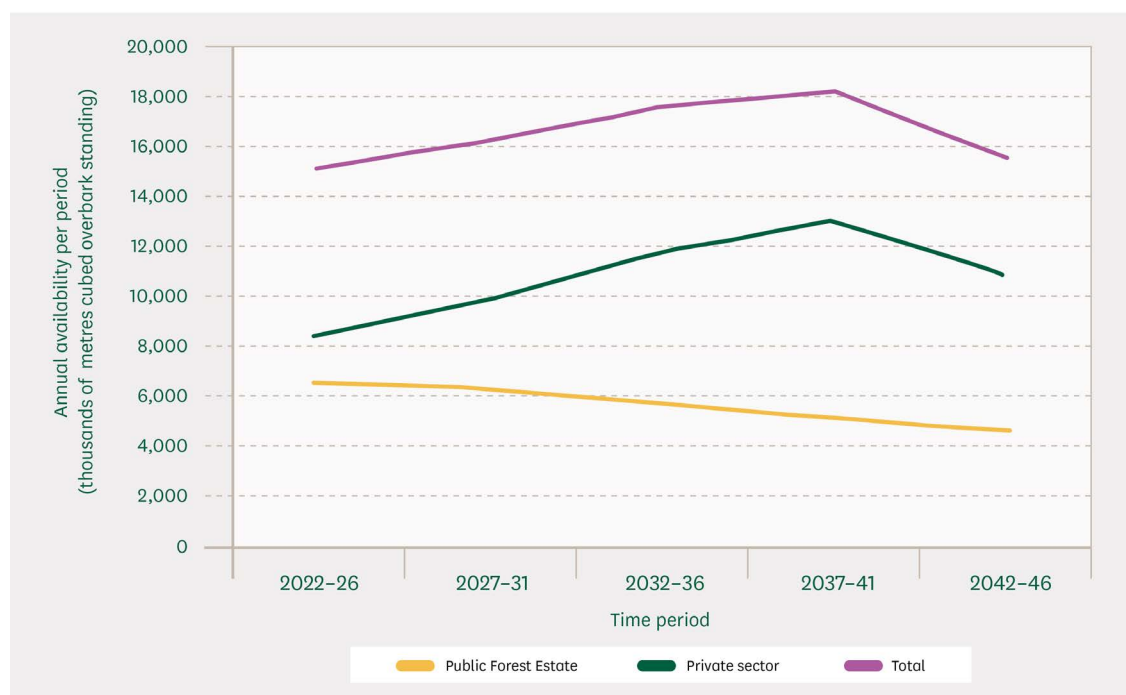
197 Forest Research, [25-year forecast of softwood timber availability](#), 2022

198 *Ibid.*

199 Forest Research, [25-year forecast of softwood timber availability](#), 2022, p.72

200 *Ibid.*, p.4

Figure 7: 25-year forecast of softwood timber availability for the public forest estate and private sector estate in the UK, 2022–2046



Source: Forest Research, [25-year forecast of softwood timber availability](#), 2022

110. The productive planting practices of the late twentieth century—including planting of large stands of single, usually coniferous species,²⁰¹ and planting on inappropriate sites (such as upland peat²⁰² and ancient semi-natural woodland sites)²⁰³—are recognised to have been in some cases detrimental for biodiversity and land-based carbon stocks.²⁰⁴ In recognition of these issues, forest policies have given increasing emphasis to environmental benefits since the 1970s.²⁰⁵ The UK Forestry Standard, the current reference for sustainable forest management, was first published in 1998.²⁰⁶

111. Since the 1990s, broadleaved species have comprised the majority of new woodlands planted, with evident implications for future availability of softwood. Since 2017–18 the split has been more even: conifers comprised 50 per cent of new UK planting in 2021. There is variation across the nations of the UK: new conifer woodland accounted for 12.0 per cent of new woodland planting in England, compared to 60.5 per cent in Scotland in 2021–22.²⁰⁷

201 Elspeth Macdonald and others, '[The effects of transformation of even-aged stands to continuous cover forestry on conifer log quality and wood properties in the UK](#)', *Forestry: An International Journal of Forest Research*, vol. 83 issue 1, January 2010, pp. 1–16

202 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356; RSPB ([TPW0064](#)), paras 9 and 15

203 The Woodland Trust, [State of the UK's Woods and Trees 2021](#), 2021.

204 Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017), p. 38; RSPB ([TPW0064](#)), paras 9 and 15; Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022, p. 30.

205 Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017), p. 39

206 *Ibid.*, p. 1.

207 Forest Research, [Forestry Statistics 2022](#), Chapter 1: Woodland Area & Planting data set, Table 1.13a

Commercial forestry and the tree-planting target

112. The England Trees Action Plan (ETAP) states that the Government will predominantly fund the establishment of native broadleaf woodlands at a large scale, while also “supporting well-designed and managed majority conifer and mixed woodlands”.

113. Ian Tubby, of the Forestry Commission, told us that there was not enough conifer resource in the UK to allow the UK to significantly reduce reliance on timber imports from today’s levels, and that “there is a very important role for commercial forestry in reaching the tree planting target of 30,000 hectares”.²⁰⁸ Confor called for the UK Government to support the expansion of the domestic wood-use industry by increasing tree planting, including the planting of productive woodland, and encouraging sustainable management of existing woodland.²⁰⁹ A report written by Friends of the Earth with input from Confor, the Soil Association and the Nature Friendly Farmers Network recommended that the UK should “increase its productive forestry faster than ever before” in “harmony” with nature and communities. The report recommends that Government should plant at least 1 million hectares of additional productive woodland in the UK, created and managed in compliance with the UK Forestry standard and UK Woodland Assurance Scheme standards, so as to increase domestic supply and ensure environmental, nature, economic, and societal benefits.²¹⁰

The role of imports in meeting demand

114. Given the UK’s currently high levels of timber imports, stakeholders told us that it was unlikely that domestic timber production would fully replace imports. Measures to ensure that imported timber derives from sustainable sources therefore remain important.

115. Confor told us that the land area required to be planted with trees to supply all of the UK’s timber needs from domestically produced timber could undermine food production.²¹¹ While the UK’s domestic supply would therefore never fully displace imports, a significant increase in domestic supply was possible.²¹² David Hopkins, Chief Executive Officer of Timber Development UK (TDUK) agreed, saying: “we can certainly increase the value proposition of UK grown timber” but added that UK production would need to be “either topped up, or balanced out with imports”.²¹³ Rather than replacing imports, TDUK said that increasing domestic supply was “about improving our timber security and improving our own productive land use”.²¹⁴ projected increases in demand meant that imported timber would still be likely to be needed even if all planting and management targets for woodland creation were met.²¹⁵

116. The UK currently imports the majority of its sawn softwood from Sweden (35 per cent), Latvia (21 per cent) and Finland (13 per cent).²¹⁶ According to TDUK, Scandinavian countries have a “very good and long-established industry which produces good quality

208 [Q13](#)

209 Confor - Confederation of Forest Industries UK ([DEF0045](#))

210 Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022

211 [Q48](#) [Stuart Goodall]

212 [Q47](#) [Stuart Goodall]

213 [Q150](#)

214 *Ibid.*

215 Timber Development UK / Timber Trade Federation ([DEF0017](#))

216 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 3: Trade, p.20.

timber and is easy to ship to the UK”.²¹⁷ TDUK said that the UK did not need to compete with Scandinavian industries, as even with increased UK production, supply would “be running to standstill” because demand from other countries for timber from Scandinavian countries would also grow.²¹⁸ As we discuss in greater detail in chapter 5, it is likely that imports will still be required, since growing conditions in Scandinavia and North America produce higher quality softwoods.

117. Given that a proportion of demand is likely to continue to be met through imports, it is important that the UK ensure the environmental sustainability of timber imports. The UK Timber Regulation (originally derived from the EU Timber Regulation) aims both to ensure that no illegal timber is sold on the UK market and to support international efforts to end illegal logging.²¹⁹ The UK’s timber regulations will be discussed in more detail in a separate report covering the deforestation issues we examined in the course of our inquiry.

118. In 2021, 95 per cent of total softwood consumption by sawmills in the UK was of UK-grown softwood.²²⁰ Between 2012 and 2021, the number of mills in the UK declined from 177 to 141.²²¹ If the declining overall trend in UK softwood availability beyond 2041 continues, sawmills which currently use domestic timber may find it difficult to source roundwood from domestic sources leaving sawmills with no option but to import. On our visit to timber and forestry businesses in Shropshire, we were told by members of the sawmilling sector that importing roundwood from abroad is less desirable due to the plant health restrictions and higher cost.

119. Against a backdrop of increasing demand, the UK’s softwood timber production is set to peak in the late 2030s before falling back to current levels in the 2040s. Given the UK’s heavy reliance on timber imports and the potential negative impacts that increased UK and global demand could have on the planet’s most ecologically sensitive and biodiverse forests, it is right that the UK should do more to meet a higher proportion of its timber consumption through domestically grown timber. It is unlikely that the UK will be able to fully supply all its timber needs domestically, especially against a backdrop of increasing demand and limited land availability. There is nevertheless scope to increase domestic timber production.

217 [Q131](#) [David Hopkins]

218 [Q132](#) [David Hopkins]

219 Office for Product Safety & Standards, [Timber and Timber Products \(Placing on the Market\) Regulations 2013, as amended: Guidance on the UK Timber Regulations](#), January 2021

220 Forestry Research, [Forestry Statistics 2022: Chapter 2 UK-Grown Timber](#), Table 2.7a, p. 20

221 Forestry Research, [Forestry Statistics 2022: Chapter 2 UK-Grown Timber](#), Table 2.8, p. 24

120. *We recommend that the Government set a realistic long-term target for the amount of timber to be produced domestically. This target should be informed by:*

- a) *the analysis being undertaken to produce Defra's Land Use Framework;*
- b) *a comprehensive analysis of the commercial species which need to be planted, and over what area, and*
- c) *the context of the global timber market, including a realistic assessment of the level of imports still required to meet both the quality and quantity requirements of the UK market.*

121. *In tandem with this target, and in line with our earlier recommendations, we recommend that the Government determine the proportion of new woodland to be established under current targets which is to contribute to timber production.*

Achieving sustainable timber production

122. Apart from Scots pine, all commercial conifer species grown in the UK are non-native and were mostly introduced in recent centuries for timber production (for example Sitka spruce or Corsican pine).²²² Most common broadleaf species such as oak or beech are native. Others such as sycamore or sweet chestnut were introduced sufficiently long ago to be considered naturalised.²²³ Some contributors from the forestry sector stated that outdated attitudes to tree species choice persisted despite the reformed forestry practices introduced by the UK Forestry Standard (discussed below). Grown in Britain told us that conifers were “often overlooked or wrongly categorised” as detrimental to biodiversity, while The Institute of Chartered Foresters observed that there was an “unhelpful debate” surrounding ‘native’ and ‘exotic’ species.²²⁴ Friends of the Earth believed that previous poor forestry practices should not inhibit the UK from establishing productive forests.²²⁵

123. In evidence to our previous inquiry on Biodiversity and ecosystems, however, Professor Natalie Seddon, Director of the Nature-based Solutions Initiative based at the University of Oxford, cautioned that biodiversity loss could ensue if a large proportion of the Government's tree-planting target is met through commercial timber plantations using non-native species.²²⁶

124. We have therefore examined how timber production might be achieved in a way which benefits, or minimises adverse effects on, levels of biodiversity, and helps to achieve climate change mitigation in a way which ensures the future resilience of the UK's forests in the face of significant threats from climate change, pests and disease.

222 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

223 *Ibid.*

224 Grown in Britain ([DEF0027](#)); Institute of Chartered Foresters ([DEF0039](#))

225 Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022, p. 31

226 Nature-based Solutions Initiative, Department of Zoology, University of Oxford ([BIO0060](#))

Supporting biodiversity

125. Trees and woodlands provide vital habitats and support rich levels of biodiversity. For example, the oak tree supports 2,300 species, of which 326 are dependent on oak trees for their survival.²²⁷ The Government expects trees and woodlands to form a core part of its Nature Recovery Network (a major commitment underpinning Government's goal to protect 30 per cent of our land and sea for nature), by providing important habitats themselves as well as connecting other wildlife-rich habitats.²²⁸ Defra has suggested that around 150,000 ha of native woodland will be created by 2042, to contribute towards the wider habitats target.²²⁹

126. The extent to which, and under what circumstances, productive forestry practices can deliver biodiversity benefits is nuanced. Several stakeholders told us that, depending on the context, productive forests which are well managed and are composed of a mix of coniferous and broadleaf species can also offer biodiversity benefits. Dr Mike Morecroft, Principal Specialist on Climate Change at Natural England, told us that “woodlands of all types do have value but they can be rather different values and it is not a binary monoculture conifer versus multispecies broadleaf woodlands in many cases”.²³⁰ Professor David Coomes, Professor of Forest Ecology at the University of Cambridge, explained that coniferous plantations could deliver biodiversity benefits, depending on context and management. For example, planting conifers on land which has existing low biodiversity and productivity (such as poor agricultural land) “can be no worse” or “even slightly better over time” for biodiversity, although he cautioned that planting conifers on priority habitats for conservation, including ancient woodlands, ought to be avoided.²³¹

127. Ian Tubby, of the Forestry Commission, said that many of the species used in forestry were non-native, but could deliver biodiversity benefits as well, depending on their management.²³² Stuart Goodall, of Confor, told us that productive woodlands planted to meet the UK Forestry Standard went through a strong regulatory process which ensured that environmental benefits, as well as biodiversity protection were delivered.²³³ The Forestry Stewardship Council UK supported the management of woodlands for timber as a sustainable resource, but said that management practices should not be focused on the productive functions of woodland to the detriment of other valuable functions such as biodiversity conservation.²³⁴

128. Nick Phillips, Forestry Policy Lead at the Woodland Trust, agreed that productive forests could be “extremely good” for biodiversity but said they did not replace the need for native woods and trees,²³⁵ a view also held by Natural England.²³⁶

227 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

228 *Ibid.*, and HM Government, [Environmental Improvement Plan 2023](#), February 2023

229 Parliamentary Office of Science and Technology, [Restoration and creation of semi-natural habitats](#), POSTbrief 48, October 2022.

230 [Q157](#)

231 [Q155](#)

232 [Q36](#)

233 [Q20](#)

234 FSC UK ([DEF0008](#))

235 [Q20](#)

236 Natural England ([DEF0052](#))

129. Native and naturalised broadleaf species are considered more valuable than coniferous species for biodiversity, water quality and reducing soil erosion.²³⁷ For example, 25 per cent of UK species of conservation concern rely on native trees as a habitat or as a food source, including lesser-spotted woodpeckers and high-brown fritillaries.²³⁸ Dr Mike Morecroft, of Natural England, told us that “[t]here is no doubt from the evidence that mixed species, native woodland, mostly broadleaf, are more biodiverse” and support specialist species not found in conifer plantations.²³⁹

The role of trees in carbon storage

130. Trees draw carbon dioxide from the atmosphere through photosynthesis and store some of this carbon in wood and in the soil. Creating new woodland is widely agreed to be necessary for the UK to meet its 2050 net zero target.²⁴⁰ In 2018 the Climate Change Committee (CCC) advised that UK tree cover ought to be increased from 13 per cent to between 17 and 19 per cent of the UK’s land area, to capture and store more carbon from the atmosphere as part of the Government’s effort to achieve net zero carbon emissions by 2050.²⁴¹

131. The Climate Change Committee’s woodland creation scenarios include both broadleaf and coniferous species because of the different timescales of sequestration.²⁴² Commercial conifer species grow and sequester carbon more rapidly than native broadleaves.²⁴³ They store a lower amount of total carbon as mature woodland in the long term, when compared to broadleaves,²⁴⁴ although commercial plantations are harvested, rather than being left as mature forest.²⁴⁵ Recent analysis by Forestry Research found that while in the short term (up to 30 years), faster-growing conifer plantations tended to sequester the highest levels of CO₂, other woodland types, including native broadleaves and naturally regenerated woodlands, achieved comparable levels of CO₂ uptake on longer timescales.²⁴⁶ Dr Mike Morecroft told us about examples of ancient woodland, such as Wytham Woods in Oxfordshire, that had not been actively managed for 100 years and which were still sequestering carbon.²⁴⁷

132. The rate of carbon sequestration of a conifer or broadleaf species is also site-dependent.²⁴⁸ Dr Mike Morecroft said that in the right conditions conifers would grow more quickly than broadleaf species. However, optimum growth was only achieved in the right climatic conditions, which tended to be the cool and damp conditions experienced

237 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021; Climate Change Committee, [The Sixth Carbon Budget - The UK’s path to Net Zero](#), December 2020.

238 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021; Webb, J. R. et al. [Managing for species: Integrating the needs of England’s priority species into habitat management](#). Natural England Research Report 24, January 2010.

239 Natural England ([DEF0052](#)); [Q157](#) [Dr Mike Morecroft]

240 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021; Climate Change Committee, [The Sixth Carbon Budget - The UK’s path to Net Zero](#), December 2020.

241 Environment, Food and Rural Affairs Committee, [Tree Planting](#), Third Report of Session 2021–22, HC 356

242 Climate Change Committee, [Land use: Reducing emissions and preparing for climate change](#), November 2018; Forest Research, [Quantifying the sustainable forestry carbon cycle. Summary Report](#), June 2022

243 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

244 *Ibid.*

245 Forestry England, [From tree to timber](#) (accessed 13 July 2023)

246 Forest Research, [Quantifying the sustainable forestry carbon cycle. Summary Report](#), June 2022

247 [Q160](#)

248 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

in Scotland. Over much of England, the difference in growth rate (and therefore carbon sequestration rates) between broadleaves and conifers was much smaller because of the dryer conditions.²⁴⁹

133. A further factor to consider is the effects of forestry practices on forest carbon storage in the soil. On average across global temperate regions, 60 per cent of woodland carbon is in the soil, although this varies greatly.²⁵⁰ The impact of woodland creation on soil carbon stocks depends on the existing amount of soil carbon and the level of ground disturbance caused by tree establishment.²⁵¹ Typically, when there is any disturbance, including felling and planting, there will be a pulse of release of carbon from the soil. Dr Mike Morecroft said that a classic example of poor practice was planting on peat, where the emissions could outweigh the sequestration of carbon. He added that even on “highly organic soils that are not peat-based” there are emissions, particularly in the early stages of disturbance.²⁵² Dr Andrew Weatherall, Principal Policy Officer for Woodlands and Forestry at the RSPB, explained that there were forestry techniques that could minimise loss of soil carbon: for example, when establishing a woodland, natural colonisation around ancient woodlands could minimise disturbance and therefore carbon emissions. When harvesting, emissions could be reduced by choosing the time of year which minimises the disturbance to the soil, and laying the brash (the above ground parts of the tree such as foliage and branches, not generally removed from the site after felling) in front of a harvesting machine could minimise soil compaction.²⁵³ Continuous cover forestry, a forest management approach that seeks to avoid clear-felling and restocking where possible by instead maintaining mixed species, mixed age forests that are selectively harvested, has been suggested as a technique which could reduce carbon emissions associated with timber harvesting, enhance biodiversity levels, and improve the resilience of forests to threats.²⁵⁴

Planting for resilience

134. Both future timber supply and the long-term benefits provided by woodlands, such as carbon storage and other ecosystem services, are dependent on forests surviving in the medium to long term. UK forests face significant threats from disease, pests and the effects of climate change:

- **Climate change:** Climate change will affect the suitability of tree species in sites across the UK, both directly through changes in temperature and precipitation, and indirectly through altered frequency and severity of disturbance events such as fire and arrival of pests and diseases.²⁵⁵ An expert report prepared for the UK’s 2021 Climate Change Risk Assessment forecast that by the 2060s more extensive occurrences of severe fire were projected to occur in extreme summers.²⁵⁶ According to Forest Research, in the woodlands for which biodiversity is a key management objective, the UK’s native tree species may be sufficiently genetically diverse to be able to adapt to climate change. For timber production, if species

249 [Q163](#) [Dr Mike Morecroft]

250 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

251 *Ibid.*

252 [Q163](#)

253 [Q169](#) [Dr Andrew Weatherall]

254 Continuous Cover Forestry Group ([DEF0033](#)); Soil Association ([DEF0026](#)); [Q182](#) [Dr Mike Morecroft]

255 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

256 Belcher et al., [UK wildfires and their climate challenges](#). Expert Led Report Prepared for the third Climate Change Risk Assessment, 2021

adaptation does not occur fast enough, assisted migration of climate-adapted seedstock from warmer and drier locations may be necessary, such as French or Spanish seed for southern England.²⁵⁷

- **Pests and disease:** Commercial pine species, including Scots pine, are being infected by a fungal disease, red band needle blight,²⁵⁸ and *Ramorum* disease is affecting larch.²⁵⁹ The great spruce bark beetle, a non-native pest of spruce and pine trees including Sitka spruce, Norway spruce, Scots pine and Corsican pine, if left uncontrolled, could cause serious damage to the UK's softwood timber industries.²⁶⁰ Chalara ash dieback has the potential to cause significant damage to the UK's ash population, with implications for the hardwood industries.²⁶¹
- **Mammalian pests:** mammals can also negatively impact woodlands and reduce timber production. Grey squirrels, a non-native rodent, cause substantial damage to broadleaf and conifer trees by stripping their bark. In England and Wales, it is estimated that grey squirrel damage costs £37 million per year in lost timber value, reduced carbon capture, damage mitigation, and trees to replace those that have died.²⁶² Grazing by deer can inhibit the regeneration of existing woodlands, making them vulnerable to disease and climate change, and can hamper the establishment of new woodlands. In addition, they can also reduce the value of timber crops by up to 30–50 per cent through browsing damage.²⁶³

135. It has been suggested that importing tree species from abroad from more southerly climes which are better suited to future climates could bolster the resilience of timber producing species,²⁶⁴ although imports can also increase the risk of new pests and diseases being introduced to the UK.²⁶⁵ Imports of tree saplings and standard trees rose from £52 million in 2016 to £93 million in 2019, a 79 per cent increase.²⁶⁶ The Government highlighted a number of measures being taken to reduce risks to biosecurity, including actions in the Tree Health Resilience Plan and Great Britain Plant Health Strategy and initiatives including the UK Plant Health Risk Group.²⁶⁷

136. Although broadleaf species such as oak, beech, ash and cherry are increasingly grown commercially, forestry in the UK remains largely reliant on coniferous species.²⁶⁸ Sitka spruce accounts for around one half (54 per cent) of the conifer area in Great Britain, followed by Scots pine (17 per cent) and larches (8 per cent).²⁶⁹ Stakeholders emphasised that the resilience of the UK's tree stock depended on species diversity.²⁷⁰ Increasing the

257 Forest Research, [Species and provenance choice for adapting England's woodlands](#) (accessed 13 July 2023)

258 Forest Research, [Dothistroma needle blight \(Dothistroma septosporum\)](#) (accessed 13 July 2023)

259 Forest Research, [Ramorum disease \(Phytophthora ramorum\)](#) (accessed 13 July 2023)

260 Forest Research, [Great spruce bark beetle \(Dendroctonus micans\)](#) (accessed 13 July 2023)

261 Forest Research, [Ash dieback \(Hymenoscyphus fraxineus\)](#) (accessed 13 July 2023)

262 Royal Forestry Society, [The Cost of Grey Squirrel Damage to Woodland in England and Wales](#), 2021

263 Forestry Commission blogpost, ['Reducing the impact of deer on the natural environment - consultation opens'](#), 4 August 2022

264 Vastern Timber (DEF0024); Q34 [Ian Tubby]; Forest Research, [Species and provenance choice for adapting England's woodlands](#) (accessed 13 July 2023)

265 Department for Environment, Food & Rural Affairs, [UK Plant Health Risk Register](#) (accessed 13 July 2023); Woodland Trust (DEF0040)

266 The Woodland Trust, [State of the UK's Woods and Trees 2021](#), 2021, p. 146.

267 Department for Environment, Food and Rural Affairs (DEF0049)

268 Parliamentary Office of Science and Technology, [Invasive Tree Pests and Diseases](#), POSTnote 394, October 2011

269 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 1: Woodland Area & Planting, p. 25.

270 Q157 [Dr Morecroft]; Royal Forestry Society (DEF0023); RSPB (DEF0028); Climate Change Committee, [Progress in adapting to climate change - 2023 Report to Parliament](#), March 2023.

diversity of tree species in UK forests increases their resilience to climate change, pests and diseases through the ‘insurance effect’, a well-documented phenomenon in nature.²⁷¹ Given that different species have differing abilities to survive these threats, in the event of an ecosystem disturbance, such as the introduction of a new disease or climatic change, the loss of individual species can be compensated for by the presence of others.²⁷² Similarly, having greater genetic diversity within populations of the same tree species also enhances their ability to survive environmental perturbations through the insurance effect.²⁷³

137. The Royal Forestry Society stated that forests in the UK were dependent upon a relatively small suite of tree species, leaving them exposed to threats. It recommended that tree species choice for future tree stocks should be suitable for UK conditions, while diversity was needed to provide resistance to disease and other threats.²⁷⁴ Dr Andrew Weatherall, of the RSPB, told us that forest management that relied on large, blocks of single species was at greater risk of being lost due to pests and disease than smaller blocks of a single species across mixed forests. He added that a mix of different species and ages gave “resilience across a landscape, even though an individual stand might be at risk”.²⁷⁵

138. The CCC has also stated that species and genetic diversity in forests can help reduce risks from pests and diseases and noted that species diversity has increased in recent years: 23 species of broadleaf trees planted in England’s forests in 2020–21, up from 17 in 2010–11. For conifer species, 28 different species were planted by Forestry England in 2020–21, as opposed to 20 in 2012–13. The CCC observes that compared with conifer plantations, diverse broadleaved woodlands better support climate resilience by providing a healthier, more diverse ecological environment for the species it supports. In addition, they are less susceptible to wildfire and wind damage.²⁷⁶

139. Defra told us that it was working with Defra Forestry Commission and Forest Research to develop an approach for forestry grants and regulations that supports species diversification and climate adaptation using lesser used or novel species, while minimising the risk of non-native species becoming invasive or introducing new pests and diseases.²⁷⁷ The Tree Health Resilience Strategy, which sets out the Government’s plans to improve the resilience of trees and woodlands in the UK, provides that a future focus should be to “Encourage diversification (including species and structural) and promote processes that underpin genetic adaptation and resilience”.²⁷⁸ While an update to the Tree Health Resilience Strategy is due in 2024, the CCC has recently observed that the forestry sector still lacks a measurable goal for managing and reducing the impact of pests and diseases on trees in England.²⁷⁹

271 Messier, C, Bauhus, J, Sousa-Silva, R, et al., ‘[For the sake of resilience and multifunctionality, let’s diversify planted forests!](#)’ *Conservation Letters*, 2022

272 Tom H. Oliver et al., ‘[Biodiversity and Resilience of Ecosystem Functions](#)’, *Trends in Ecology & Evolution*, vol. 30 issue 11 (2015), pp. 673–684

273 David Boshier, Richard J. A. Buggs, ‘[The potential for field studies and genomic technologies to enhance resistance and resilience of British tree populations to pests and pathogens](#)’, *Forestry: An International Journal of Forest Research*, vol. 88 issue 1 (January 2015), pp. 27–40

274 Royal Forestry Society ([DEF0023](#))

275 [Q174](#)

276 Climate Change Committee, [Progress in adapting to climate change - 2023 Report to Parliament](#), March 2023.

277 Department for Environment, Food and Rural Affairs ([DEF0049](#))

278 Department for Environment, Food & Rural Affairs, [Tree Health Resilience Strategy: Building the resilience of our trees, woods and forests to pests and diseases](#), May 2018, p.45

279 Climate Change Committee, [Progress in adapting to climate change - 2023 Report to Parliament](#), March 2023.

140. **Delivery of the Government's net zero and nature recovery targets depends on wide-scale woodland creation. The amount of CO₂ absorbed, the levels of biodiversity supported and other benefits or negative effects of woodland creation are all highly variable, depending on where and how woodland is established, the tree species present, site conditions and management.**

141. **Planting more conifer trees is needed if domestic softwood production levels are to be maintained or increased. However, a policy to grow productive woodlands to achieve future timber supply and other benefits for nature and climate, are dependent on forests surviving in the medium to long term. Such policies should therefore be developed within an overall strategy which prioritises species diversity and resilience.**

The role of the UK Forestry Standard in sustainable timber production

142. The UK Forestry Standard (UKFS) is an important standard in forestry. Dr Andrew Weatherall said that at the time of its first publication the UKFS was a “ground-breaking” global standard.²⁸⁰ Government-administered woodland creation grants are conditional on the proposed woodland meeting the relevant requirements and guidelines of the UKFS.²⁸¹ To achieve certification standards under the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC), UK timber must be grown in compliance with the UK Woodland Assurance Standard, which itself reflects the requirements set out in the UKFS.²⁸²

143. When asked how the Government ensured that sustainable practices were used in timber production, Ian Tubby told us that the UKFS provided the regulatory framework to ensure “that any woodland created, broadleaf or conifer, must deliver a range of environmental, social and economic benefits” including ensuring “that peatland, wading birds, water quality and soils are protected”.²⁸³ He added:

We can always do better and there are certainly things to be learned from the past but I think it highly unlikely, if not impossible, for us to see a return to the bad old days of the 70s and 80s and what happened then when we were planting timber for a strategic reserve.²⁸⁴

280 [Q175](#)

281 Forestry Commission, [England Woodland Creation Offer Grant Manual](#), 22 June 2022

282 UK Woodland Assurance Standard, [UKWAS Standard](#), Fourth Edition, April 2018, page 1.

283 [Q16](#)

284 [Q16](#) [Ian Tubby]

Impact of the UKFS on timber production

144. The UK Forestry Standard encourages diverse, mixed tree-planting. Its requirements for the planting of a forest management unit are:

- a maximum of 75 per cent of one species to be planted per unit;
- In each unit, a minimum of 10 per cent open ground or ground managed for the conservation and enhancement of biodiversity as the primary objective;
- 10 per cent of other species; and,
- 5 per cent native broadleaved trees or shrubs.²⁸⁵

The UKFS is reviewed and updated every five years.²⁸⁶

145. As part of ongoing consultations on the review of the UKFS, there has been debate about whether the maximum of 75 per cent of one species to be planted in a forest management unit should be decreased to 65 per cent.²⁸⁷ The Royal Forestry Society has argued that this would reduce the productivity of the UK's forests although it acknowledges the role of species diverse stands for improving the resilience of forests.²⁸⁸ Environmental organisations believe that the existing limit of 75 per cent is too high.²⁸⁹ RSPB believes that 75 per cent is too high because there is no limit set on the size of a contiguous single species block permitted by the UK Forestry Standard.²⁹⁰ Wildlife and Countryside Link suggested that even 65 per cent was insufficiently ambitious, stating that a maximum allowance of 50 per cent of trees being from a single species would deliver greater biodiversity and woodland resilience benefits.²⁹¹

146. Confor raised concerns that the net area of wood-producing woodland in the UK was “in steady decline”, asserting that the UK Government was “facilitating the destruction of many hundreds of hectares of productive forest every year in England”.²⁹²

147. As a result of creating more open space in existing forests, and requiring greater diversity in new or restocked woodlands, forests planted to the UKFS will have lower yield of timber per area, compared to the single species conifer plantations of the last century. Significant woodland expansion is therefore likely to be needed in order to maintain or increase UK timber production levels in the future.²⁹³ We also heard that in order to support productive forestry, climate change mitigation and nature recovery benefits, the

285 Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017), p. 38.

286 Scottish Forestry, [UK Forestry Standard](#) (accessed 13 July 2023)

287 Wildlife and Countryside Link, [UK Forestry Standard draft updated content - Response to consultation from Wildlife and Countryside Link](#); Royal Forestry Society, [RFS comments on the UK Forestry Standard \(UKFS\) Draft, October 2022](#) (both accessed 13 July 2023)

288 Royal Forestry Society, [RFS comments on the UK Forestry Standard \(UKFS\) Draft, October 2022](#) (accessed 13 July 2023)

289 RSPB ([DEF0028](#)); Woodland Trust ([DEF0040](#)); Wildlife Countryside Link, [UK Forestry Standard draft updated content - Response to consultation from Wildlife and Countryside Link](#) (accessed 13 July 2023)

290 RSPB ([DEF0028](#))

291 Wildlife and Countryside Link, [UK Forestry Standard draft updated content - Response to consultation from Wildlife and Countryside Link](#) (accessed 13 July 2023)

292 Confor - Confederation of Forest Industries UK ([DEF0045](#))

293 Gresham House ([DEF0057](#)); Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022

Government needs to balance the mix of species and woodland types that are planted.²⁹⁴ Gresham House stated that while it fully supported the current UK Forestry Standard, there “must be an acknowledgement that there needs to be significant extra land planted for productive forestry to even stand still, let alone increase national stock levels”.²⁹⁵

148. Some stakeholders suggested that mixed species woodlands including both broadleaf and conifers could allow multiple benefits to be achieved, including timber production.²⁹⁶ Defra indicated that the Nature for Climate Fund (which underpins the England Woodland Creation Offer) supported a wide range of woodland types, including mixed woodlands “that serve a variety of environmental, productive and amenity purposes.” The Department observed that it was important to balance the needs of nature recovery, achieving net zero and securing sustainable timber resources.²⁹⁷

149. Sir William Worsley, Chair of the Forestry Commission, said Forestry England would like to “grow the estate” in order to ensure that the productivity of the estate as a whole does not reduce.²⁹⁸ To compensate for lost timber production on the estate in areas where habitat restoration is the priority, Forestry England is seeking to plant conifers elsewhere including on leased land, and on newly bought land.²⁹⁹

150. Sir William Worsley addressed concerns that Forestry England had been actively removing trees from woodland areas, for instance in the New Forest. This practice was intended to rectify earlier inappropriate planting practices, for instance, the planting of trees on areas of deep peat, and was undertaken to promote habitat restoration.³⁰⁰ In 2013, land managed by Forestry England included 16.8 per cent open habitat: it has made a commitment to increasing open space to 21.1 per cent by 2060.³⁰¹

151. New or restocked woodlands planted to the UK Forestry Standard (UKFS) will have lower yields of timber per area. The planting of predominantly broadleaf species in recent decades has reduced the future availability of softwood timber. To ensure the continued availability of softwoods from productive forestry, it is evident that rates of conifer planting compliant with UKFS ought to increase. But increased planting of conifers ought not to be undertaken at the expense of native broadleaf species, given the clear importance of the latter for biodiversity levels.

152. Given the different advantages of different woodland types and species mixes for biodiversity, carbon storage and timber production, to ensure that the benefits of the nation’s woodlands are fully realised, the total area of woodland managed to the UKFS must be increased. Significantly expanding the UK’s woodland cover is necessary not

294 Scottish Woodlands Ltd ([DEF0047](#)); Game & Wildlife Conservation Trust ([DEF0021](#)); Department for Environment, Food and Rural Affairs ([DEF0049](#))

295 Gresham House ([DEF0057](#))

296 Woodland Trust ([DEF0040](#)); Gresham House ([DEF0057](#)), Grown in Britain ([DEF0027](#)); Continuous Cover Forestry Group ([DEF0033](#)); Mike Childs, Paul de Zylva and Nick Rau, [Why we need more trees in the UK](#), Friends of the Earth England, Wales and Northern Ireland, June 2022

297 Department for Environment, Food and Rural Affairs ([DEF0049](#))

298 [Q269](#)

299 [Letter from the Chairman of the Forestry Commission to Sir Christopher Chope MP](#) relating to the Committee’s evidence session on 29 June 2023, dated 11 April 2023

300 [Q290](#)

301 [Letter from the Chairman of the Forestry Commission to Sir Christopher Chope MP](#) relating to the Committee’s evidence session on 29 June 2023, dated 11 April 2023

only to compensate for predicted shortfalls in the supply of domestically-produced softwood timber, but also to enhance the resilience of the nation's woodlands to future pest, disease and climate challenges through increasing the diversity of trees planted.

153. *We recommend that the project board with oversight of the current quinquennial review of the UK Forestry Standard ensure that the revised Standard not only contributes to beneficial outcomes for biodiversity and carbon storage but also supports productive forestry to the fullest extent compatible with climate and nature goals. This overall objective must be supported by the policy instruments available to the Forestry Commission in England and to Defra Ministers. The Commission and the UK Government should seek to work constructively with their counterparts in the devolved administrations and partner forestry agencies to ensure the overall growth of the forest estate managed to the UK Forestry Standard.*

Monitoring and compliance with the UK Forestry Standard

154. Forestry England plays an important role in producing domestically grown timber, in delivering the Government's tree planting targets and in ensuring that once planted, the UK Forestry Standard is met. While we heard broad consensus about the importance of the UKFS, stakeholders raised concerns about the levels of monitoring of compliance with the standard.

155. The Woodland Trust and RSPB raised concerns that while UKFS adherence was checked at the establishment stage of a woodland, compliance was typically not checked throughout the lifetime of a woodland. Dr Andrew Weatherall, of the RSPB, told us that while the standard was used and checked in the first five years of establishment as part of the woodland creation grant process, the middle of the tree growing cycle was less well monitored.³⁰² Nick Phillips, of the Woodland Trust, said that the UKFS was "not necessarily being followed on the ground" and suggested that increased capacity in the Forestry Commission could support landowners and foresters to achieve compliance with the UKFS.³⁰³ He pointed out that as the Government aimed to reach afforestation rates not seen for decades, it was important that the Forestry Commission had sufficient resources to deliver.³⁰⁴

156. Ian Tubby, of the Forestry Commission, said that the Commission was "fairly confident" that compliance with UKFS was high in woodland creation schemes, since applicants to such schemes are required to demonstrate UKFS compliance during planning and planting.³⁰⁵ He expressed less certainty over the level of compliance in existing woodlands, saying that dialogue was needed with agents and contractors to get a more formal understanding of current practice.³⁰⁶

302 [Q175](#)

303 [Q40](#)

304 [Q16](#)

305 [Q13](#)

306 [Q41](#) [Ian Tubby]

157. In our earlier report, *Biodiversity in the UK: bloom or bust?* we reported our view that Natural England, another arms-length body of Defra, was insufficiently resourced to carry out its required functions.³⁰⁷ We recommended then that the Government should urgently review the funding allocated to bodies with responsibility for monitoring, protecting and increasing levels of biodiversity in England.

158. When asked whether Forestry England was sufficiently resourced, Sir William Worsley told us that he was “realistic about the financial challenges” facing the country and would therefore not be asking for more money.³⁰⁸ He told us that the main issue with the enforcement of UKFS beyond the establishment stage of woodland creation was labour resource. He added that “On the productive forestry side [...] most conifers are certified” under the UKFS and must therefore comply to remain certified.³⁰⁹

159. According to Forest Research, only 44 per cent of UK woodland area is certified to Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) scheme standards. One hundred per cent of the public sector woodland area is certified compared to just 24 per cent of the private sector woodland area.³¹⁰

160. Forestry England receives core funding from the Forestry Commission, though 83 per cent of its overall income is self-generated.³¹¹ In 2021–22, Forestry England generated £94 million of income, £32 million of which was from felled timber (accounting for 34 per cent of self-generated income). Sir William told us that Forestry England are “the biggest outdoor recreation providers in the country”, with 40% of their income deriving from this revenue stream.³¹² When the Committee met Forestry England officials as part of an inquiry visit, officials told us that funding from timber harvesting provided income to support the provision of ecosystem services, amenity value and nature recovery in functions of Forestry England. However, we were told that declining timber yields over the next few decades foreshadowed a decline in income and therefore less funding for Forestry England’s other goals such as nature recovery.³¹³

161. The Chartered Institute of Ecology and Environmental Management called for a clearer definition within the UKFS as to what is a legal requirement and what is guidance, and when enforcement measures will be applied.³¹⁴ Similarly, Nick Phillips, The Woodland Trust, told us that while the UKFS is very good on paper,

quite a lot of it just requires you to consider doing the right thing—for example, consider restoring as habitat—but if you don’t want to, you do not have to and there is very little evidence that it is being followed on the ground.

307 Environmental Audit Committee, [Biodiversity in the UK: bloom or bust?](#), First Report of Session 2021–22, HC 136.

308 [Q300](#)

309 [Q301](#)

310 Forest Research, [Forestry Facts & Figures 2022](#), 2022, p. 5

311 Forestry England, [About us](#) (accessed 13 July 2023)

312 [Q283](#)

313 Details of the Committee’s visit to commercial forestry and timber businesses are set out in Annex 2

314 Chartered Institute of Ecology and Environmental Management, [UK Forestry Standard: Proposed Key Changes, August 2021](#) (accessed 13 July 2023)

He added:

About 60 per cent of England is supposedly meeting this standard [...] but only 7 per cent of native woodlands are in good condition. Both conifer and broadleaf woodlands are severely lacking in deadwood, open space, old trees, a variety of tree species. I think the UK Forest Standard is a positive tool but only if we have a sufficient handhold to deliver it.³¹⁵

162. The UK Forestry Standard underpins regulation of the sustainability of the nation's forests and plays an important role in ensuring that renewed efforts to increase timber supply do not repeat the mistakes of the past. Yet the existence of the standard is not proof that the nation's forests are being managed sustainably. We are concerned by reports that compliance with this important standard is not being monitored throughout the lifetime of England's forests and reports that Forestry England lacks labour resource to carry out routine monitoring. Without regular monitoring, Forestry England cannot be sure that forests are being managed sustainably to the UKFS beyond the establishment phase.

163. The Government aims to increase tree-cover expansion at rates not seen for decades in order to deliver a range of ecosystem service benefits. To ensure that these benefits are realised, and to deliver the Government's vision for increased woodland cover, Forestry England must be resourced appropriately so as to ensure that new woodland is compliant with the UKFS at establishment stage and throughout the lifetime of the woodland.

164. *Given the importance of the UKFS in ensuring that forests are managed sustainably, we recommend that the Forestry Commission establish a programme for the routine monitoring of woodland to ensure that the standard is being adhered to beyond establishment, adopting new technology to aid this, where feasible to do so.*

165. *We further recommend that the Forestry Commission urgently review the resources available to Forestry England so as to ensure that it has sufficient resources to ensure the compliance of woodlands with the UKFS.*

5 Using domestically grown timber to contribute to reach net zero

166. In this chapter we examine how domestically grown timber could be best used to contribute to the UK reaching its target of Net Zero by 2050 including through the use of timber in construction and use of woody biomass for energy generation.

Hierarchy of best uses of wood

167. Once timber is harvested from a woodland, the carbon stock is lost from the woodland but is stored in the harvested wood biomass.³¹⁶ The carbon storage potential of the harvested wood is determined by the lifetime and end-use of the product, as carbon will be released when the wood decays or is burnt.³¹⁷ Some uses of harvested timber may contribute to carbon emissions reduction:

- **Fencing, packaging, pallets:** while these products have a relatively short lifespan, manufacturing them from other materials may be more emissions-intensive.³¹⁸
- **Construction:** On decadal timescales, increasing long-term timber use in buildings can increase net carbon sequestration as the woodland regrows. In addition, wood can replace fossil fuel intensive materials such as steel. Under 20 per cent of UK harvested wood products are used in construction,³¹⁹ but this is increasing, in part through use of engineered products like cross-laminated timber.³²⁰
- **Bioenergy:** The emissions mitigation benefits of unabated burning of wood biomass for energy production are contested, but bioenergy with carbon capture and storage (BECCS) is predicted to play a major role in climate change mitigation.³²¹

168. Several contributors have highlighted the need to ensure a hierarchy of use which prioritises long-lived uses for harvested wood biomass in order to deliver carbon storage benefits. The European Academies Science Advisory Council (EASAC) recommended a 'cascade' of priorities for the use of woody biomass whereby energy uses would be restricted to wastes or residues which had no higher value and would otherwise be discarded.³²² Woodknowledge Wales and Vastern Timber cautioned that sawmill-grade logs should not be burnt for energy, given the potential for timber to be used for long-term uses in the built environment.³²³ Confor stated that UK Government should work closely with

316 Biomass is defined as organic material from living things.

317 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

318 *Ibid.*

319 *Ibid.*, and Crane, E, [Woodlands for climate and nature: A review of woodland planting and management approaches in the UK for climate change mitigation and biodiversity conservation](#). Report to the RSPB, February 2020.

320 *Ibid.*

321 *Ibid.*, and Business, Energy and Industrial Strategy Committee, [Decarbonisation of the power sector](#), Eleventh Report of Session 2022–23, HC 283

322 European Academies' Science Advisory Council (EASAC), [Forest bioenergy update: BECCS and its role in integrated assessment models](#), February 2022

323 Vastern Timber ([DEF0024](#)); Woodknowledge Wales ([DEF0036](#))

the industry to consider different options to increase wood use circularity and establish priority uses. Their evidence stated that wood products should be used, reused and recycled, and only burnt for energy at ‘end of life’.³²⁴

169. The CCC recommended a hierarchy of best use for sustainable biomass resources between now and 2050.³²⁵ The UK Government is understood to be developing a ‘priority use framework’ that follows this principle: it is expected that this will be explored further in the UK Government’s upcoming Biomass Strategy.³²⁶

Timber in construction

170. As set out in the Committee’s report on the sustainability of the built environment increasing timber use in buildings could aid the UK to meet its net zero ambitions. However, the majority of timber products produced in the UK have a relatively much shorter lifespan. In 2022, of total production of wood products from UK mills (10.6 million cubic metres of sawn wood) just under two-thirds were wood-based panels, paper and paperboard, wood pellets and briquettes. The remaining third was sawn wood.³²⁷

171. The CCC has recommended timber in construction increase to 40 per cent by 2050 and called on the Government introduce policy to support this.³²⁸ 28 per cent of new build homes in the UK used timber frames in 2016. There are large variations in timber uptake across the component nations of the UK. Timber use in Scotland is high (at 83 per cent in 2016), while its use in England, Wales, and Northern Ireland is comparatively low, at 23 per cent, 31 per cent, and 17 per cent, respectively.³²⁹ While materials need to be appropriately used and selected for their required purpose, many of the academics and architects we heard from in our earlier inquiry into sustainability in the built environment recognised that the use of timber (subject to forestry management) in place of concrete, masonry and steel was one of the most successful strategies to reduce embodied carbon.³³⁰ The International Energy Agency conducted a meta-analysis of over 80, mostly European, case studies of the embodied carbon in individual buildings: the results of this analysis broadly supported these conclusions.³³¹

324 Confor - Confederation of Forest Industries UK (DEF0045)

325 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018, p. 13

326 Parliamentary Office of Science and Technology, [Woodland Creation](#), [POSTnote 636](#), January 2021

327 Forest Research, [UK Wood Production and Trade: provisional figures](#), May 2022

328 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018; Climate Change Committee, [UK Housing Fit for the Future](#), February 2019.

329 Environmental Audit Committee, [Building to net zero: costing carbon in construction](#), First Report of Session 2022–23, HC 103

330 Built Environment group, The Open University School of Engineering and Innovation ([SBE0131](#)); Dr Danielle Densley Tingley (Senior Lecturer at University of Sheffield); Prof Buick Davison (Professor at University of Sheffield); Professor Matthew Gilbert (Professor at University of Sheffield); Dr Iman Hajirasouliha (Senior Lecturer at University of Sheffield); Dr Maud Lanau (Research Associate at University of Sheffield); Dr Xinyi Li (Research Associate at University of Sheffield); Prof Virginia Stovin (Professor at University of Sheffield); Dr Ling Min Tan (Research Associate at University of Sheffield); Dr Wil Ward (Research Associate at University of Sheffield) ([SBE0052](#)); Wood for Good ([SBE0072](#)); Structural Timber Association ([SBE0003](#)); WSP UK ([SBE0087](#)); Marlene Cramer (Research Assistant at Edinburgh Napier University) ([SBE0097](#)); Historic England ([SBE0098](#))

331 International Energy Agency, [Evaluation of Embodied Energy and CO₂e for Building Construction \(Annex 57\)](#), September 2016

Government action to increase the use of timber in construction

172. Both in its Clean Growth Strategy³³² and its 25 Year Environment Plan³³³ the Government has committed to increasing the use of timber in construction. In the England Trees Action Plan (ETAP), Defra also committed to providing financial support to:

- develop innovative timber products through the Forestry Innovation Fund;
- develop a policy roadmap on the use of timber in construction;
- increase public demand for sustainably sourced timber;
- work with Homes England to increase timber use in the delivery of housing programmes; and
- encourage research into barriers to the uptake of timber.³³⁴

173. The Government is providing financial support to increase the use of timber in construction through the £1.5 million Timber in Construction Innovation Fund. The fund supports research and development into the use of domestically grown timber in construction in order to increase the use of English timber in construction; to increase the amount of carbon stored in the built environment; and, bring novel or improved wood-rich products, systems or processes to market.³³⁵

174. In the ETAP Defra committed to identify opportunities to increase safely the use of timber in construction through a cross-sector and cross industry working group, the Timber in Construction (TiC) working group, which includes representatives of Government departments and of the sector including Confor, Timber Development UK and the Structural Timber Association.³³⁶ As we discussed in chapter 2 above, the TiC group is developing a roadmap outlining how to safely increase timber in construction in England.³³⁷

Barriers to the use of home-grown timber in construction

175. In our recent report on *Building to net zero: costing carbon in construction* we found that there were significant obstacles to a greater uptake of structural timber products. These include issues arising from fire risk and insurance, price volatility, securing sustainable and local supply chains, and addressing skills gaps in the use of timber. Andrew Carpenter, CEO of the Structural Timber Association (STA) and member of the Timber in Construction working group told us that the working group was examining possible solutions to these challenges.³³⁸

332 HM Government, [The Clean Growth Strategy. Leading the way to a low carbon future](#), October 2017

333 HM Government, [A Green Future: Our 25 Year Plan to Improve the Environment](#), January 2018

334 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

335 Forestry Commission, [Timber in Construction Innovation Fund](#), March 2023

336 Department for Environment, Food and Rural Affairs ([DEF0049](#)); Confor - Confederation of Forest Industries UK ([DEF0045](#))

337 [Letter to the Chair from the Minister for Natural Environment and Land Use, Department for Environment, Food & Rural Affairs, relating to the Committee's inquiry, dated 1 June 2023](#); Department for Environment, Food and Rural Affairs ([DEF0049](#)); Confor - Confederation of Forest Industries UK ([DEF0045](#))

338 [Q44](#)

176. He also told us that currently only a very small amount of timber used in construction is domestically grown: STA members would like to use more domestically grown timber but at the moment it was not suitable for their needs.³³⁹ Contributors to this inquiry and our earlier inquiry into the sustainability of the built environment identified several issues with the use of domestically grown timber in construction:

- **Quality of UK-grown timber:** Lowfield Timber Frames, a timber frame building company, observed that in the construction industry, domestically grown softwood timber carried “the stigma of being sub-standard” compared to imported timber.³⁴⁰ This is because softwoods grown in the warmer UK climate grow faster than in Scandinavia and north America and are therefore less dense and are more heavily knotted. Andrew Carpenter said that most members of the Structural Timber Association used softwoods, predominantly from Sweden: those who used cross-laminated timber sourced much of it from Austria.³⁴¹
- **Building regulations:** Stuart Goodall, CEO of Confor, told us that the UK produced a lot of timber that could be used in house building, especially timber-framed housing, but that “an overspecification on the structural grades [...] excludes domestically grown timber.” Grown in Britain were of the view that regulations and business processes acted as barriers to the use of domestically grown certified timber.³⁴² The section size typically used in the construction industry was considered a barrier to using domestically grown timber.³⁴³ Larger cuts or acceptance of different grades of wood could allow domestic timber to be used structurally, but would require a change in practice.
- **Plant and machinery cost:** as the amount of timber in construction increases, the sector will have to invest significantly in plant and machinery, including processing machinery capable of producing domestic timber products.³⁴⁴ Grown in Britain said there was a gap in support for businesses wanting to make the “significant investment in machinery that even second hand, can cost hundreds of thousands of pounds.”³⁴⁵
- **Need for innovation:** engineered timber accounts for almost 20 per cent of timber usage in construction.³⁴⁶ Engineered timber, for example cross-laminated timber, laminated veneer lumber and heat-treated timber, provides a way for domestically grown timber, including hardwoods, to be used to create

339 [Q21](#)

340 Lowfield Timber Frames ([DEF0056](#))

341 [Q12](#) [Andrew Carpenter]

342 Grown in Britain ([DEF0027](#))

343 Lowfield Timber Frames ([DEF0056](#))

344 Grown in Britain ([DEF0027](#)); [Q44](#) [Andrew Carpenter]

345 Grown in Britain ([DEF0027](#))

346 Lowfield Timber Frames ([DEF0056](#))

structural components and be utilised in construction.³⁴⁷ Stakeholders have called for support for research and development efforts in this area both to drive uptake and ensure its safe use.³⁴⁸

- **Lack of incentives to use domestically grown timber:** some stakeholders point to a lack of incentives to use locally grown timber in England in general, and in construction in particular.³⁴⁹

177. We welcome the Government's aims to increase the uptake of timber in construction. The long-term use of timber in construction offers longer term carbon storage potential than other uses of harvested wood products and therefore has an important role to play in helping the UK to meet its net zero targets.

178. It is important that domestically-grown timber resulting from the current drive to plant is available for use in construction as far as possible. While there is scope to use UK-grown timber for a wide variety of non-structural purposes, engineered solutions and potentially changes in construction practices are required to allow the use of domestically grown timber structurally. Engineered timber, for example cross-laminated timber, laminated veneer lumber and heat-treated timber, offer opportunities for domestically-grown timber to be used to create structural components and be utilised in construction. We welcome the Government's support for the development of innovative timber products.

179. *To support the Government's commitments, we reiterate the recommendation made in chapter 2 that the Timber in Construction roadmap be published as soon as possible. The roadmap must comprehensively address the afforestation commitments made in the England Trees Action Plan and the need for timber construction products.*

180. *For UK-grown timber to be used in construction, the Government needs to support the sawmilling sector to transition UK production towards producing a higher percentage of construction grade timber products and engineered timber. Action to support this transition should be specifically set out in the Timber in Construction roadmap.*

181. *The Timber in Construction roadmap should consider how Government can incentivise changes in practice to allow the safe use of domestically grown timber in construction, including through the use of innovative engineered timber products.*

347 Lowfield Timber Frames ([DEF0056](#)); Vastern Timber ([DEF0024](#)); Timber Development UK, Timber Trade Federation, Timber Research and Development Association ([SBE0042](#)); St. Modwen ([SBE0079](#)); Elliott Wood Partnership Ltd ([SBE0092](#)); Dr Morwenna Spear (Research Scientist at The BioComposites Centre, Bangor University) ([SBE0118](#))

348 BSW Group ([SBE0065](#)); Dr Danielle Densley Tingley (Senior Lecturer at University of Sheffield), Prof Buick Davison (Professor at University of Sheffield), Professor Matthew Gilbert (Professor at University of Sheffield), Dr Iman Hajirasouliha (Senior Lecturer at University of Sheffield), Dr Maud Lanau (Research Associate at University of Sheffield), Dr Xinyi Li (Research Associate at University of Sheffield), Prof Virginia Stovin (Professor at University of Sheffield), Dr Ling Min Tan (Research Associate at University of Sheffield), Dr Wil Ward (Research Associate at University of Sheffield) ([SBE0052](#))

349 Lowfield Timber Frames ([DEF0056](#)); Vastern Timber ([DEF0024](#))

Use of domestically-grown hardwood

182. 74 per cent of trees in England are of broadleaf species (Figure 3), and broadleaves will continue to be planted as part of reforestation and nature restoration efforts.³⁵⁰ The Forestry Commission told us that they were therefore keen to find ways of increasing the production of hardwood, as that would help with habitat restoration.³⁵¹ Only a small proportion of UK hardwood resource is suitable for use in conventional sawn timber products but it could potentially be used in composite products.³⁵² The Forestry Commission said that growing the UK market for hardwood in composite products could be a productive use of broadleaf resources, with the additional benefit of incentivising more broadleaf woodlands to be brought into management.³⁵³

183. The hardwood market in the UK is small compared to the softwood market. In 2022, UK hardwood production accounted for 8 per cent of total UK wood removals³⁵⁴ with 84 per cent of this volume used for wood fuel.³⁵⁵ There is nevertheless demand for hardwood currently being met by imports, some of which could potentially be met from UK-grown hardwoods in the future. 17 per cent (12 thousand green tonnes) of hardwood consumption by sawmills in the UK was imported in 2021.³⁵⁶ Justin Mumford, of the Institute of Chartered Foresters, told us that hardwood specialist mills had reduced in number and milling volumes have declined.³⁵⁷ In the UK over 1 million green tonnes of hardwood was milled in the 1980s and early 1990s compared to an average of 0.62 million tonnes between 2000 and 2022, and 0.8 million in 2021.³⁵⁸

184. Timber Development UK said that hardwoods could be grown for productive use: they would expect milling to increase if UK hardwoods were available.³⁵⁹ Confor expressed scepticism at the idea that the UK could switch from being a producer of softwood products to a producer of hardwood products because of a lack of infrastructure, the relatively poor quality of UK-grown hardwood timber and the impact of the different growth cycles (30 to 50 years for softwoods as opposed to 80 to 120 years for hardwoods) on existing industry.³⁶⁰ Stakeholders attributed the higher quality of European hardwoods to good, long-term woodland management and long-term tree breeding programmes.³⁶¹ Improvements in UK softwoods as a result of breeding improvements have been aided by shorter growing cycles, compared to those seen in broadleaves.³⁶²

185. Stuart Goodall, CEO of Confor, said that many of Confor's members "would love to grow quality hardwood".³⁶³ However, Confor and the Forestry Commission explained that broadleaf tree species faced significant challenges from diseases and pests. Browsing by grey squirrels and deer are a major issue for growing hardwoods. Ian Tubby,

350 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021.

351 [Q5](#) [Ian Tubby]

352 Forestry Commission, [Timber in Construction Innovation Fund](#), March 2023.

353 [Q20](#) [Ian Tubby]

354 Forest Research, [UK Wood Production and Trade: 2021 Provisional Figures](#), 2022, Table 1a, page 8

355 *Ibid.*, Table 3, page 13

356 *Ibid.*, Table 4a, page 15. A green tonne is the weight of wood when freshly felled.

357 [Q126](#)

358 Forest Research, [UK Wood Production and Trade: 2021 Provisional Figures](#), 2022, Figure 2, page 14; [Q126](#) [Justin Mumford]; [Q129](#) [Justin Mumford]

359 [Q135](#) [David Hopkins]

360 Confor - Confederation of Forest Industries UK ([DEF0045](#))

361 [Q130](#) [Ben Goh and Justin Mumford]

362 [Q130](#) [Ben Goh]

363 [Q6](#)

Forestry Commission said: “Squirrels are a costly pest to deal with and do limit growing hardwoods to timber-quality standards in large parts of the country, which is why most of the hardwood resource that is harvested goes to firewood and energy markets”.³⁶⁴ Stuart Goodall described the use of hardwoods as firewood as “clearly sub-optimal” compared to uses such as timber in construction.³⁶⁵

186. In the ETAP, Defra committed to publish a national deer management strategy, which is currently in consultation, and to update the Grey Squirrel Action Plan.³⁶⁶ The Animal and Plant Health Agency, an executive agency of Defra, is currently trialling the use of oral contraceptives to control grey squirrel populations.³⁶⁷

187. **Growing the market for hardwood in composite products—as an alternative to use for firewood—could utilise broadleaf resources in the UK, with the added benefit of incentivising more broadleaf woodlands to be brought into management. However, growing quality hardwoods remains difficult due to disease and pests, and undermanagement.**

188. *We recommend that, as part of the Timber in Construction Roadmap, the Government consider how the future UK market can be served by a greater proportion of domestically grown hardwoods (for example, through engineered timber products).*

The role of woody biomass in future energy generation

189. The UK currently relies on energy derived from biomass (bioenergy)³⁶⁸ for a significant portion of its electricity generation. In 2021, bioenergy generated 12.9 per cent of UK electricity, up from 3.6 per cent in 2011.³⁶⁹ Globally, bioenergy use increased by 353 per cent between 2000 and 2022.³⁷⁰ Biomass is projected to play an important role in meeting UK net zero targets, requiring a substantial expansion in domestic production in addition to continued imports of biomass.³⁷¹ When bioenergy is combined with carbon capture and storage (BECCS), bioenergy may deliver negative emissions, which could contribute towards the UK’s statutory commitment to reach net zero carbon emissions by 2050. There are currently no commercial scale BECCS operations within the UK, but several are under development.³⁷²

364 [Q6](#)

365 *Ibid.*

366 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

367 Department for Environment, Food and Rural Affairs ([DEF0049](#))

368 Biomass is defined as organic material from living things. Bioenergy is energy derived from plant or animal material. This can include wood, energy crops, waste products and biogas. Bioenergy can be used to generate heat, electricity or transportation fuels. For example, wood can be burned to produce heat, ethanol can be used to generate fuel, and bioenergy crops can be used to generate electricity.

369 Department for Business, Energy & Industrial Strategy, Digest of UK Energy Statistics (DUKES): renewable sources of energy, specifically [Capacity of, generation from renewable sources and shares of total generation \(DUKES 6.2\) dataset](#)

370 Data accessed through the Ember Electricity Data Explorer, available at: <https://ember-climate.org/topics/bioenergy/>

371 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023

372 *Ibid.*

190. The Government was due to publish its Biomass Strategy in June 2023, originally having promised publication by the end of 2022.³⁷³ The strategy is expected to set out in detail the Government's view on how biomass can best contribute towards net zero across the economy, and outline the policies needed to deploy biomass in the priority areas for net zero, alongside the frameworks to support these policies, such as sustainable supply of resources, air quality requirements, and GHG accounting mechanisms.³⁷⁴

191. At present, forestry residues (Box 4) are the predominant biomass feedstock used in the UK for bioenergy generation. Wood pellets from North America are the dominant feedstock for use in electricity generation.³⁷⁵ One million tonnes of wood pellets were imported to the UK in 2021, representing a third of UK timber imports.³⁷⁶ The import of wood pellets to the UK increased by 514 per cent between 2012 and 2021.³⁷⁷ In future, the UK may face increasing competition for biomass as global demand rises.³⁷⁸ The CCC has warned that the amount of biomass used by the UK should be constrained by the supply of low-carbon sustainable feedstocks.³⁷⁹

Box 4: Bioenergy feedstock types

Forestry residues—small branches and bark from forest thinning operations, conservation management operations, wood pellets, or wastes from wood processing industries such as sawdust. High quality stemwood or roundwood is not considered a residue. This feedstock is often termed woody biomass.

Perennial energy crops—lignocellulosic grasses like Miscanthus, and short rotation coppice (SRC) willow or poplar. Once established they last for multiple growing seasons. They are frequently termed dedicated energy crops.

Short rotation forestry (SRF)—young trees specifically grown for energy (e.g., eucalyptus) are harvested and replanted when they reach 10–20cm in diameter while growth rates and wood-to-bark ratio are high. SRF is still in trial stages.

Source: Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023. For a more comprehensive list of bioenergy feedstock types, including food crop feedstocks and agricultural residues, refer to POSTnote 690.

Sustainability of woody biomass feedstocks

192. Concerns have been raised regarding the sustainability of using woody biomass to produce electricity in the UK, including the impact of sourcing wood pellets on forests overseas and their effectiveness for mitigating climate change.³⁸⁰

373 *Ibid.*

374 Department for Business, Energy & Industrial Strategy, [Biomass Policy Statement](#), November 2021

375 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023.

376 Forest Research, [Forestry Statistics 2022](#), September 2022: Chapter 3: Trade, p.11

377 *Ibid.*

378 International Energy Agency, [Net Zero by 2050 – A Roadmap for the Global Energy sector](#), May 2021

379 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018, p.11

380 Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#)); Royal Society for the Protection of Birds, Wildlife and Countryside Link, MCS Charitable Foundation, Soil Association ([DEF0038](#)); Dr Daniel Quiggin (Senior Research Fellow at Chatham House) ([NETS0024](#)); European Academies' Science Advisory Council (EASAC), [Forest bioenergy update: BECCS and its role in integrated assessment models](#), February 2022.

Sourcing woody biomass from overseas

193. ‘Forest residues’—sawmill residues and other waste products from the forest industry—are considered as waste by-products that would otherwise be burned or left to rot. High quality stemwood or roundwood is not considered a residue.³⁸¹ Environmental groups have raised concerns that Drax Group (which operates Drax biomass power station in Yorkshire and is a UK-based global bioenergy supply business) has used higher quality wood from whole trees to produce wood pellets, when the wood could have been used more sustainably for other purposes: the issue was examined by BBC Panorama.³⁸²

194. Dr Alan Knight, Group Director of Sustainability, Drax told us that Drax sourced most of its pellets from the by-products of the timber industry such as sawdust and forest residues: 80 per cent of the pellets sourced in Canada were derived from such by-products.³⁸³ Drax also uses whole trees which are not suitable for sawmills because they are hollow, twisted or too small.³⁸⁴ In 2021, across all of Drax Power Station’s sources of biomass fibre, 37 per cent was low-grade roundwood.³⁸⁵ Drax had challenged the assertions made in the Panorama broadcast. Questioned on these issues, the Secretary of State for Energy Security and Net Zero, Rt Hon Grant Shapps MP, indicated that Departmental officials had spoken to experts and Canadian Government officials and had informed him that the broadcast had contained some inaccuracies.³⁸⁶

195. Environmental NGOs have raised concerns about the potential impacts of sourcing wood pellets for UK energy generation from ecologically sensitive forests overseas. Submissions highlighted examples of wood pellets derived from potentially damaging logging practices in ecologically sensitive forest (such as the North American Coastal Plane), primary forest (for example, in Canada) and areas with legal protection (such as Natura 2000 protected sites in Estonia) entering the UK for use in bioenergy generation.³⁸⁷

196. Drax and the Association of Renewable Energy and Clean Technologies (REA) sought to refute concerns in relation to the US, where 60 per cent of Drax’s pellets are currently sourced.³⁸⁸ Drax cited evidence which purports to demonstrate that forest resources in the southeast US are growing: REA argued that forest growth allowed the UK to import more biomass from these resources.³⁸⁹ REA stated that harvesting in this area was driven by the timber sector which produced low-value residues as a by-product which can be used for bioenergy.³⁹⁰ Drax insisted that the majority of their feedstock was sourced from countries with “vast working forests which are managed to ensure sustained growth and harvest, within the confines of strict laws and regulations.”³⁹¹

381 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023.

382 Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#)); BBC News, ‘[Drax: UK power station owner cuts down primary forests in Canada](#)’, 3 October 2022 (accessed 13 July 2023)

383 [Q53](#); [Q59](#)

384 [Q53](#) [Dr Alan Knight]

385 Drax Group plc, [Drax ESG Data Supplement 2021](#), p. 5

386 [Q364](#)

387 Royal Society for the Protection of Birds, Wildlife and Countryside Link, MCS Charitable Foundation, Soil Association ([DEF0038](#)); Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#))

388 Drax Group plc, [Drax ESG Data Supplement 2021](#), p. 5

389 Drax Group ([DEF0044](#)); Association of Renewable Energy and Clean Technologies (REA) ([DEF0046](#))

390 Association of Renewable Energy and Clean Technologies (REA) ([DEF0046](#))

391 Drax Group ([DEF0044](#))

197. In evidence to our earlier inquiry into negative emissions technologies, in November 2021, Jason Shipstone, Chief Innovation Officer, Drax told us that it was important not to extract biomass from primary forests.³⁹² The United Nations Food and Agriculture Organization defines primary forests as “naturally regenerated forests of native tree species, where there are no clearly visible indications of human activities and ecological processes are not significantly disturbed”.³⁹³ Primary forests are highly biodiverse ecosystems, representing globally important carbon sinks. Primary boreal forests, covering large parts of Canada, Alaska, and Russia, represent 11 per cent of the earth’s surface, yet are estimated to store one third of the global terrestrial carbon stock.³⁹⁴ Harvesting of these forests for wood-based products releases carbon that has taken centuries to accumulate.³⁹⁵ BBC Panorama claimed that the region in which Drax had purchased logging licences was primary Canadian forest, although Drax disputed this classification.³⁹⁶ Asked whether sourcing wood pellets from this region was consistent with the evidence previously given by Jason Shipstone, Dr Alan Knight said that the British Columbian Government did not use the term ‘primary forest’, though they had established a “very robust system of classifying which forests need to be protected”.³⁹⁷

198. Professor Michael Norton, Environment Programme Director of the European Academies Science Advisory Council, acknowledged that British Columbia was fairly advanced in terms of forestry management but queried the sustainability of sourcing woody biomass from countries such as Belarus, Russia and Brazil.³⁹⁸ Dr Alan Knight told us that “We only buy in areas where we know deforestation is not happening and the forest regulations imposed by those Governments are very robust.”³⁹⁹ He added that Drax did not buy material from the countries with poor forest governance mentioned by Professor Norton.⁴⁰⁰ Drax’s own accounts indicate that in 2021 Drax Power Station sourced 192,930 tonnes of fibre from Brazil, 110,229 tonnes from Belarus and 33,829 tonnes from Russia, including low-grade roundwood from Brazil and Belarus.⁴⁰¹

199. Sourcing woody biomass from primary forests is not prohibited under the UK’s sustainability framework for woody biomass, although the management of the forest must ensure that harm to ecosystems and biodiversity is minimised.⁴⁰² Professor Patricia Thornley, director of the Energy and Bioproducts Research Institute at Aston University, explained that there might be reasons why primary forests were harvested, such as the management of pests and disease, or mitigation of the risk of forest fires.⁴⁰³ When asked whether his department would be considering the biodiversity implications of its energy

392 Environmental Audit Committee, [Technological innovations and climate change: negative emissions technologies](#), Oral evidence taken on 25 November 2021, HC 738, Q53

393 Food and Agricultural Organization of the United Nations (2022) [Global Forest Resources Assessment 2020](#)

394 Bradshaw, C., & Warkentin, I., ‘Global estimates of boreal forest carbon stocks and flux’, *Global Planetary Change*, vol 12 (2015), pp. 24–30.

395 van der Werf, G., Morton, D., DeFries, R. et al., ‘CO2 emissions from forest loss’, *Nature Geosci* vol 2 (2009), pp. 737–738

396 BBC News, ‘[Drax: UK power station owner cuts down primary forests in Canada](#)’, 3 October 2022 (accessed 13 July 2023); [Q55](#)

397 [Q55](#)

398 [Q71](#)

399 [Q68](#)

400 [Q81](#)

401 Drax Group plc, [Drax ESG Data Supplement 2021](#), p. 5

402 Department for Energy & Climate Change, [Woodfuel Advice Note](#), December 2014. In contrast, sourcing non-woody biomass (for example, energy crops) cannot be sourced from primary forest and land designated for protecting nature, and other sensitive habitats such as biodiverse grasslands.

403 [Q63](#)

policies, including BECCs, in addition to the GHG emissions, the Secretary of State for Energy Security and Net Zero agreed that biodiversity must not be harmed in pursuit of climate goals.⁴⁰⁴ Mr Shapps said that woody biomass should “never come from virgin forest” and should instead come from forest residues which “are being felled for other purposes, timber, paper, and so on, and nothing other than branches which are in poor condition”.⁴⁰⁵

Carbon emissions associated with bioenergy

200. There is debate around the extent to which biomass burnt without carbon capture and storage (unabated bioenergy generation) is a source of “low carbon” energy (although when operational, BECCS is expected to generate negative emissions). Burning wood emits more carbon dioxide than burning coal, per unit of energy produced, because wood has a lower energy density.⁴⁰⁶ However, proponents of bioenergy challenge the comparison between burning biomass and fossil fuels, arguing that unlike fossil fuels, the carbon emissions from bioenergy generation are reabsorbed by forest regrowth over the lifetime of a forest system.⁴⁰⁷ Nevertheless, Drax’s independent advisory board has recently advised that Drax should reassess its criteria for determining carbon neutrality and should move away from stating biomass is carbon neutral.⁴⁰⁸

201. Some NGOs⁴⁰⁹ and the European Academies’ Science Advisory Council (EASAC)⁴¹⁰ suggest that the timeframes for regrowth and combustion are mismatched, with an initial rise in carbon emissions, creating a ‘carbon debt’.⁴¹¹ EASAC say that burning stemwood is likely to increase atmospheric levels of carbon dioxide for a period of time that is “likely to exceed the decade or so remaining before the 1.5°C Paris Agreement target is reached”.⁴¹² Some experts have expressed concerns that the use of feedstocks with long carbon payback periods increases the risk of missing the net zero 2050 target or crossing significant climate

404 [Q363](#)

405 *Ibid.*

406 Ember, [UK biomass emits more CO2 than coal](#), October 2021; John D Sterman *et al.*, ‘[Does replacing coal with wood lower CO2 emissions? Dynamic lifecycle analysis of wood bioenergy](#)’, *Environmental Research Letters* vol. 13 (2018); Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#))

407 Supergen Bioenergy Hub ([DEF0051](#)); [Q74](#) [Professor Thornley]; [Letter from the Association of Renewable Energy and Clean Technology to the Business, Energy and Industrial Strategy Committee](#), 8 December 2022; Céline Boisvenue *et al.*, ‘[Managing forest carbon and landscape capacities](#)’, *Environmental Research Letters* vol. 17 no. 11 (2022); Cintas, O., Berndes, G., Cowie, A.L., Egnell, G., Holmström, H., Marland, G. and Ågren, G.I., ‘[Carbon balances of bioenergy systems using biomass from forests managed with long rotations: bridging the gap between stand and landscape assessments](#)’, *GCB Bioenergy* vol. 9 (2017), pp. 1238–1251

408 Drax plc, [Independent Advisory Board on Sustainable Biomass. H2 2022 update](#), 2022

409 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023; Royal Society for the Protection of Birds, Wildlife and Countryside Link, MCS Charitable Foundation, Soil Association ([DEF0038](#)); Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#)); 3Keel for RSPB, [Biomass for energy: A framework for assessing the sustainability of domestic feedstocks](#), May 2022; RSPB; Brack, D. *et al.*, [Greenhouse gas emissions from burning US-sourced woody biomass in the EU and UK](#) Chatham House, October 2021; Dr Daniel Quiggin (Senior Research Fellow at Chatham House) ([NETS0024](#))

410 European Academies’ Science Advisory Council (EASAC), [Forest bioenergy update: BECCS and its role in integrated assessment models](#), February 2022

411 The time taken to repay the carbon debt is known as a carbon payback period. Different biomass feedstocks (energy crops, agricultural residues, forestry and woody biomass and organic waste) have different carbon payback periods.

412 European Academies’ Science Advisory Council, [Forest bioenergy update: BECCS and its role in integrated assessment models](#), February 2022

tipping points, such as the collapse of the Greenland ice sheet.⁴¹³ Others dispute this and recommend a landscape-scale accounting method where emission changes are calculated across an entire landscape in GHG reporting.⁴¹⁴

202. To avoid double-counting of GHG emissions under the UNFCCC's carbon accounting protocol, biomass use is reported under the land use sector of national accounting frameworks rather than the energy sector. Emissions from biomass produced within the UK are therefore accounted for under the land use sector in national accounting frameworks, whereas combustion emissions from imported biomass, which comprises the vast majority of feedstocks used in the UK, are not included.⁴¹⁵ Consequently, unabated biomass energy generation does not contribute to the UK's carbon budget, and is eligible for green energy subsidies.

203. Understanding the carbon impacts of forest bioenergy systems requires a Life Cycle Analysis (LCA) approach: this considers the full supply chain emissions produced during harvesting, transportation, processing and combustion.⁴¹⁶ LCA of biomass feedstocks can give differing results with high levels of variability about emissions.⁴¹⁷ According to the Supergen Bioenergy Hub, LCA has demonstrated that forest bioenergy systems can achieve significant greenhouse gas savings compared to fossil fuel based systems, although emissions reductions are not guaranteed because the overall carbon impact is influenced by forest management and other factors along the supply chain.⁴¹⁸

204. Professor Patricia Thornley told us that “everything that we import into the UK that is counting against our green energy should have its carbon credentials examined and audited”.⁴¹⁹ Dr Alan Knight agreed, stating “Rather than just saying the rules allow us to classify as carbon neutral, we are more than comfortable with the notion that we need to do LCA on the forests in the regions we buy from. Our challenge is getting a methodology that people have confidence in and people to do that”.⁴²⁰

205. Asked to consider whether burning woody biomass contributed to increased carbon emissions, Dr Alan Knight observed that forest waste was often burnt in any case.⁴²¹ Professor Michael Norton said it was valid to regard sawmill residues as renewable energy, but was concerned that additional harvesting of forests was being driven by demand for bioenergy: he asked us to consider whether “genuine residues which would otherwise have no use” were being used or whether additional forest harvesting was taking place for bioenergy feedstock.⁴²²

413 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023

414 *Ibid.*

415 *Ibid.*

416 *Ibid.*, and Supergen Bioenergy Hub ([DEF0051](#))

417 *Ibid.*

418 Supergen Bioenergy Hub ([DEF0051](#))

419 [Q66](#)

420 [Q68](#)

421 [Q73](#)

422 [Q74](#)

206. In relation to concerns which we raised about the carbon emissions reduction potential of using woody biomass for unabated energy generation, the Secretary of State told us that the forthcoming Biomass Strategy would further address these issues in the context of the BECCS programme the Government wished to develop.⁴²³ Ashley Ibbett, Director General for Energy Infrastructure, Department for Energy Security and Net Zero, added that the Department “look[ed] very closely at sustainability at the forest level” and “t[ook] into account associated emissions in setting the sustainability criteria”.⁴²⁴

The UK’s governance framework for biomass feedstock sustainability

207. The CCC has recently reported that the Government’s Net Zero Strategy scenarios are likely to rely increasingly on imported biomass, which could increase pressure on global supply chains of forest biomass⁴²⁵ and leave less sustainable biomass resource available for decarbonisation elsewhere in the world.⁴²⁶ International supply chains pose additional challenges when it comes to ensuring sustainability and avoiding offshoring of impacts of bioenergy.⁴²⁷ According to the CCC, strengthened governance of biomass supply chain sustainability is needed⁴²⁸ as the global biomass market scales to manage the risks to sustainable low-carbon production.⁴²⁹

208. The UK’s governance framework for biomass is based on a set of criteria attached to subsidy schemes for bioenergy, based on the EU Renewable Energy Directive framework.⁴³⁰ For bioenergy generators to be eligible for UK Government support schemes such as Renewable Obligation Certificates, they must meet certain sustainability criteria when sourcing biomass.⁴³¹ These criteria include:

- **Land:** restrictions on the land from which biomass is sourced. This includes protections for biodiversity and the carbon stocks of forest, peatlands, and wetlands;
- **Greenhouse gas emissions:** thresholds for the life cycle emissions of the biomass;
- **Social criteria:** consideration of labour rights.⁴³²

423 Environmental Audit Committee, [Mapping the path to net zero](#), Oral evidence taken on 15 March 2023, HC 104, [Q370](#) [Rt Hon Grant Shapps MP]

424 *Ibid.*

425 Climate Change Committee, [Delivering a reliable decarbonised power system](#), March 2023

426 Climate Change Committee, [Progress in reducing emissions: 2022 Report to Parliament](#), June 2022

427 Supergen Bioenergy Hub ([DEF0051](#))

428 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018; Climate Change Committee, [Progress in reducing emissions: 2022 Report to Parliament](#), June 2022

429 Climate Change Committee, [Biomass in a low-carbon economy](#), (November 2018)

430 The relevant legislation is the Renewables Obligation Order 2015.

431 As well as the Renewable Heat Incentive (RHI), Contracts for Difference (CfD), Feed-in Tariff (FIT), and Renewable Transport Fuel Obligation (RTFO) schemes. Climate Change Committee, [Biomass in a low-carbon economy](#), (November 2018); Ofgem, [Biomass sustainability](#) (accessed 13 July 2023), and Association of Renewable Energy and Clean Technologies (REA) ([DEF0046](#))

432 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018; Ofgem, [Biomass sustainability](#) (accessed 13 July 2023)

Views on UK governance framework for biomass feedstock sustainability

209. The Government considers that the UK sustainability criteria for biomass use are some of the most stringent in the world.⁴³³ The Association of Renewable Energy and Clean Technology said that the UK's governance framework was "widely regarded as one of the most comprehensive frameworks globally".⁴³⁴ In its 2018 report on *Biomass in a Low Carbon Economy*, the CCC observed that the UK sustainability framework varied in terms of quality and coverage.⁴³⁵ It said that evidence suggested that the UK's bioenergy sustainability rules were helping to limit the sustainability risks, although there is some evidence of negative local impacts (e.g. air quality), intensive forestry management practices, and disagreement around the use of some feedstocks (e.g. low-grade wood and 'thinnings').⁴³⁶

210. There are concerns about aspects of the UK's governance of biomass feedstock sustainability. Firstly, the sustainability criteria for bioenergy feedstocks are tied to subsidy schemes and do not apply where use is not subsidised.⁴³⁷ Government support for biomass plants through Contracts for Difference and the Renewables Obligation is due to end in 2027, with other subsidies set to end in the early 2030s.⁴³⁸ As bioenergy demand increases and subsidies change over time, the CCC believes that this issue is likely to become more important.⁴³⁹

211. Secondly, to comply with the woody biomass land criteria, generators and participants must demonstrate that all their wood supplied is legal and that at least 70 per cent of all woodfuel meets the definition of 'legal and sustainable'.⁴⁴⁰ The remaining 30 per cent only needs to fulfil the legality criterion.⁴⁴¹ Given that the strength of laws and types of protection for forests vary internationally, instances where the legality criterion alone applies could allow wood fuel derived from unsustainable forestry practices overseas to be used in the UK.

212. In its Biomass Policy Statement, issued in November 2021, the former Department for Business, Energy and Industrial Strategy indicated that it was reviewing existing sustainability criteria and the current governance mechanisms across the transport, heat and energy sectors to understand any gaps, international and cross sectoral harmonisation opportunities, including options to incorporate sustainability criteria for biomass use in the wider economy, and to ensure the criteria for the sourcing of these feedstocks are in line with up-to-date scientific evidence and remain 'globally leading'.⁴⁴²

433 Department for Business, Energy & Industrial Strategy, [Biomass Policy Statement](#), November 2021

434 Association of Renewable Energy and Clean Technologies (REA) ([DEF0046](#))

435 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018

436 *Ibid.*, p. 10

437 *Ibid.*, p. 75

438 Business, Energy and Industrial Strategy Committee, [Decarbonisation of the power sector](#), Eleventh Report of Session 2022–23, HC 283; Climate Change Committee, [Delivering a reliable decarbonised power system](#), March 2023; Biomass UK ([DPS0057](#))

439 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018, p. 75

440 Department for Energy & Climate Change, [Woodfuel Advice Note](#), December 2014; Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#))

441 Department for Energy & Climate Change, [Woodfuel Advice Note](#), December 2014, Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#))

442 Department for Business, Energy & Industrial Strategy, [Biomass Policy Statement](#), November 2021

213. The Secretary of State for Energy Security and Net Zero, questioned on these issues in March 2023, wrote to us to indicate how the issue was being addressed through the preparation of the Biomass Strategy:

The strategy will set out a series of recommendations for enhancing the criteria to ensure these are in line with up-to-date scientific evidence and remain globally leading. This includes a recommendation to develop a common framework for biomass sustainability which would cover all biomass uses and could be applied in future subsidy schemes as well as in areas outside of subsidy schemes.⁴⁴³

214. Compliance with the land criteria can be proven by certification, through the use of Forest Stewardship Council (FSC) certificate scheme or the Programme for the Endorsement of Forest Certification (PEFC) certification scheme.⁴⁴⁴ Alternative schemes are accepted, including the Sustainable Biomass Program (SBP). The CCC says that the extent to which environmental and social impacts are managed varies amongst the approved certification routes, and often relies on local and national legislation in producer countries.⁴⁴⁵ Drax advocated the SBP, stating that the certification system enabled organisations operating in biomass markets to demonstrate compliance with existing sustainability requirements and provided an “off-the-shelf biomass sustainability standard” for emerging markets.⁴⁴⁶

215. A joint submission by several NGOs contended that certification schemes used to accredit bioenergy schemes in the UK were ineffective stating that the SBP standards had been developed entirely by industry, and did not require any site inspections to verify claims about forest management.⁴⁴⁷ We raised these concerns with the Secretary of State and his officials. Ashley Ibbett said that Ofgem had responsibility for auditing the sustainability of all the biomass used by biomass electricity generators.⁴⁴⁸ The Secretary of State undertook to examine into the efficacy of biomass sustainability certification as audited by Ofgem.⁴⁴⁹

216. While imported woody biomass continues to be a major bioenergy feedstock, it is important that biomass used in UK power generation, whether from the UK or overseas, is genuinely sustainably sourced in a way which minimises the impact on forest biodiversity and carbon stocks. The CCC has continually stressed that strengthened governance of bioenergy markets is needed domestically and internationally to manage the risks to sustainable low-carbon production as the global biomass market scales up.

217. The Biomass Strategy, which was promised by the end of 2022, must now be issued as soon as possible. We recommend that the Strategy take a risk-based approach to ensuring the sustainability of biomass use, managing risks on a domestic and a global scale. In preparing the Strategy we recommend that the Government consider the risks associated with life-cycle carbon emissions, land-use trade-offs, impacts on biodiversity

443 [Letter to the Chair from the Secretary of State for Energy Security and Net Zero](#), relating to the Committee's evidence session on 'Mapping the path to net zero' evidence session of 15 March 2023, dated 11 April 2023

444 Ofgem, [Renewables Obligation: Sustainability Criteria](#), April 2018

445 Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018

446 Drax Group ([DEF0044](#))

447 Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#))

448 [Q367](#)

449 Environmental Audit Committee, [Mapping the path to net zero](#), Oral evidence taken on 15 March 2023, HC 104, Q369 [Rt Hon Grant Shapps MP]

and ecosystem service provision, and competition with other uses of biomass, and consider the merits of establishing quotas for, or a moratorium on, the use of the highest risk feedstocks.

218. The amount of biomass used by the UK power sector should be constrained by the supply of low-carbon sustainable feedstocks, factoring in potential domestic supply and rising trends of bioenergy use globally. The Biomass Strategy should set out and quantify the potential of different biomass sources to deliver energy and explain how sufficient sustainability sourced biomass feedstocks will be found, from where, to meet demand required by BECCS, in line with net zero pathways.

219. The Government needs to manage risks associated with the sustainability of feedstock supply through its governance framework for biomass, which must be strengthened. Improvements should include:

- a) All biomass used for large-scale power generation in the UK should be required to adhere to the sustainability criteria set by the UK governance framework. The Government should include in its Biomass Strategy a thorough review of the subsidy regime for biomass.*
- b) The woody biomass land criteria should stipulate that generators and participants must demonstrate that all of their woody biomass supplied is 'legal and sustainable.'*
- c) As soon as robust life-cycle carbon assessment methodologies are available, biomass sustainability requirements should include the complete accounting of the life-cycle carbon emissions of using a source of woody biomass, from the carbon stored in the forest, through to the stack emissions.*

220. We echo and endorse the recommendation of the Business, Energy and Industrial Strategy Committee, in its recent report on Decarbonisation of the power sector, that the full lifecycle emissions from BECCS facilities in the UK should be made carbon neutral within a timeframe compatible with the UK's climate targets.

Sourcing forest biomass domestically

221. Imported wood pellets from forestry residues are currently the predominant bioenergy feedstock used in the UK,⁴⁵⁰ although energy crops are predicted to play an increasing important role in the future: the CCC's Balanced Net Zero Pathway scenario involves planting at least 30,000 hectares of energy crops each year by 2035, with 700,000 hectares planted by 2050.⁴⁵¹ The CCC recommends dedicated energy crops and forest residues as future sources of domestic biomass.⁴⁵² It has advised that the UK shift to using domestic supplies of biomass, rather than imports.⁴⁵³

450 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023; Department for Business, Energy & Industrial Strategy, [Digest of UK Energy Statistics \(DUKES\) 2022](#), July 2022.

451 Climate Change Committee, [The Sixth Carbon Budget - The UK's path to Net Zero](#), December 2020

452 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023; Climate Change Committee, [Biomass in a low-carbon economy](#), November 2018; Committee on Climate Change Committee, [The Sixth Carbon Budget - The UK's path to Net Zero](#), December 2020; Supergen Bioenergy Hub (DEF0051)

453 Climate Change Committee, [Delivering a reliable decarbonised power system](#), March 2023

Forestry energy crops

222. The Supergen Bioenergy Hub told us that the UK was projected to have significant domestic biomass resources to meet bioenergy demand and that this could be supplied from a diverse range of sources, including short rotation forestry (SRF, where trees are harvested after roughly 20 years) or short rotation coppice (SRC, where plants are cut back and then harvested roughly every 3 years) of fast-growing species like willow and poplar.⁴⁵⁴ SRF and SRC deployment are both low in the UK: Supergen Bioenergy Hub indicated that modelling showed each would be relied upon to meet growing biomass demand.⁴⁵⁵

223. Confor thought that SRF and SRC were “positive ways for farmers to diversify and increase their income through the supply of biomass for local production of energy”.⁴⁵⁶ REA suggested that landowners could be rewarded through Government subsidies to grow commercial short rotation forestry plantations, perennial energy crops or other energy crops on their land. The Woodland Trust did not support the use of Government subsidies for short rotation coppicing or short rotation forestry for biomass, as these practices were not thought to deliver significant public goods and frequently involved fast-growing, non-native trees.⁴⁵⁷ The Game and Wildlife Conservation Trust raised concerns that the proliferation of energy crops in short rotation coppicing could have environmental consequences as well as removing land from food production.⁴⁵⁸

Bringing woodlands into active management

224. Several contributors highlighted the potential role that greater active management of more existing and future forests in the UK could play in providing a source of woody biomass for bioenergy.⁴⁵⁹ 42 per cent of the UK’s forests are undermanaged⁴⁶⁰ and only 7 per cent of native woodlands (in Great Britain) are in good ecological condition.⁴⁶¹ Undermanagement can have a negative impact on the resilience and the biodiversity they contain, as well as the productiveness of woodlands.⁴⁶² In both the ETAP and the EIP the Government recognises that existing trees and woodlands need better management.⁴⁶³

225. The practice of silvicultural thinning,⁴⁶⁴ which aims to reduce the density of trees in a stand, can improve the quality and growth of the remaining trees and produce a saleable product. Thinning can also achieve other objectives such as altering the species composition of a stand, improving the health of the remaining trees.⁴⁶⁵ Both the RSPB and the Institute of Chartered Foresters cautioned that while accredited thinning practices

454 Supergen Bioenergy Hub ([DEF0051](#))

455 *Ibid.*

456 Confor - Confederation of Forest Industries UK ([DEF0045](#))

457 Woodland Trust ([DEF0040](#))

458 Game & Wildlife Conservation Trust ([DEF0021](#))

459 Institute of Chartered Foresters ([DEF0039](#)); Confor - Confederation of Forest Industries UK ([DEF0045](#)); Association of Renewable Energy and Clean Technologies (REA); ([DEF0046](#)), Scottish Woodlands Ltd ([DEF0047](#)); RSPB ([DEF0028](#))

460 Forestry Commission, [Key Performance Indicators Report for 2021–22](#), p. 18.

461 The Woodland Trust, [State of the UK’s Woods and Trees 2021](#), 2021, p. 55.

462 Department for Environment, Food and Rural Affairs ([DEF0049](#))

463 HM Government, [The England Trees Action Plan 2021–2024](#), May 2021

464 A proportion of stems is removed in order to give the best stems space and light to grow into a more valuable crop. This is usually carried out some time after canopy closure and may be repeated at intervals. A temporary reduction in standing volume will result. Forest Research, [Forestry Statistics 2022: Introduction, Glossary, Sources](#), September 2022.

465 Forestry Commission, [Thinning Practice - A Silvicultural Guide](#), January 2011

could be beneficial for silvicultural purposes and biodiversity, forests ought not to be overharvested to meet bioenergy demands. The RSPB warned that while silvicultural thinning might be suitable for small-scale bioenergy use, the market should not be distorted by subsidy to encourage this end-use over others such as leaving biomass in the forest. The Institute of Chartered Foresters and Defra stressed the importance of leaving forest residues *in situ* to maintain soil carbon stock and long-term nutrient sustainability.⁴⁶⁶

Land use trade-offs associated with biomass feedstocks in the UK

226. Under the Balanced Net Zero pathway in the CCC's Sixth Carbon Budget, up to 700,000 hectares of land (equivalent to 3 per cent of the UK's total land area, four times the size of Greater London) could be needed to grow enough energy crops to satisfy domestic demand for BECCS, alongside imported feedstocks.⁴⁶⁷ Increasing the production of biomass feedstocks in the UK could lead to potential land-use trade-offs with agricultural production.⁴⁶⁸ To avoid this, biomass strategies usually rely on the expansion of biomass production onto so called 'marginal' land. This term is currently poorly defined, which can create challenges when assessing the availability of land.⁴⁶⁹ The CCC has identified a potential 1.4 million hectares of 'marginal' land in the UK that could be dedicated to perennial energy crops by 2050, though only half of this is involved in biomass production under their scenarios.⁴⁷⁰ Analysis for the CCC has suggested that some of this land might offer greater benefits for carbon sequestration and biodiversity if used for other purposes such as reforestation or habitat restoration.⁴⁷¹

227. As we have discussed earlier in this report, Defra is currently developing a land use framework. In 2022, the CCC recommended that the Government's Biomass Strategy needed to be part of a comprehensive land use strategy, including setting out how land would be released for UK biomass and forestry (e.g. through reduced livestock farming as a result of diet changes).⁴⁷² A joint-submission by several environmental NGOs recommended that policy to expand domestic production of biomass generation be considered as part of a robust land use framework which ought to account for meeting the whole range of land use challenges for food, nature and climate.⁴⁷³ In evidence to our examination of negative emissions technologies in the autumn of 2021, the then Department for Business, Energy and Industrial Strategy told us that the Government was taking a systematic and geographically-targeted approach which was considering the complex range of interacting social, economic, and demographic factors.⁴⁷⁴

466 Royal Society for the Protection of Birds, Wildlife and Countryside Link, MCS Charitable Foundation, Soil Association ([DEF0038](#)); Royal Forestry Society ([DEF0023](#))

467 Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#)); Climate Change Committee, [The Sixth Carbon Budget - The UK's path to Net Zero](#), December 2020.

468 Cut Carbon Not Forests, Biofuelwatch, Dogwood Alliance, Southern Environmental Law Center, Stand.earth, Natural Resources Defense Council ([DEF0013](#)); RSPB ([DEF0028](#)); Department for Business, Energy and Industrial Strategy ([NETS0010](#)); Intergovernmental Panel on Climate Change, 'Summary for Policymakers' in *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2022), pp. 3–33

469 Parliamentary Office of Science and Technology, [Biomass for UK Energy](#), POSTnote 690, January 2023

470 *Ibid.*, and Climate Change Committee, [The Sixth Carbon Budget - The UK's path to Net Zero](#), December 2020

471 *Ibid.*, and Whitaker, J., [Steps to scaling up UK sustainable bioenergy supply: A stakeholder workshop covered by the Centre, for Ecology, Hydrology and the Committee on Climate Change](#), July 2018

472 Climate Change Committee, [Progress in reducing emissions: 2022 Report to Parliament](#), June 2022

473 Royal Society for the Protection of Birds, Wildlife and Countryside Link, MCS Charitable Foundation, Soil Association ([DEF0038](#))

474 Department for Business, Energy and Industrial Strategy ([NETS0010](#))

228. As demand for biomass feedstock grows globally, sourcing more biomass domestically could increase the security of UK biomass supply. Provided that overharvesting is avoided, bringing a higher proportion of existing forests into active management could provide a source of woody biomass for bioenergy in the UK with added benefits for biodiversity and resilience.

229. *We recommend that the Government conduct an impact assessment of the effects on the delivery the UK's climate and biodiversity commitments of bringing a higher proportion of existing forests into active management.*

230. Short-rotation forestry and short-rotation coppice crops are currently little used, but demand for them is likely to increase. If they are considered to be significant and necessary bioenergy feedstock sources, their planting must be scaled up sustainably, in line with best forestry practices and limited to an appropriate area of land, so as to minimise competition with food crops.

231. *In the forthcoming Biomass Strategy and Land Use Strategy the Government must determine the capacity of the UK to supply bioenergy feedstock from its forest resources—including forest residues, short rotation forestry and coppicing—analysing the risks of drawing upon these resources and modelling land-use trade-offs, particularly in relation to security of food supply and in the context of the biodiversity crisis*

232. *We recommend that the Forestry Commission, as the Government's experts on forestry, work with Ofgem to share best forestry practice. The objective of this collaboration ought to be to ensure that, should demand for domestic wood biomass in energy markets increase, the regulatory framework for bioenergy feedstocks derived from forestry crops and silvicultural activities is developed in line with principles of sustainable forestry. The collaboration ought to be undertaken in full recognition of the need to deliver on the UK's commitments to halt and reverse biodiversity loss by 2030 under the Kunming-Montreal Global Diversity Framework, and on the Government's commitments and obligations under the Environment Act 2021.*

Conclusions and recommendations

Government targets and strategies for woodlands and timber

1. There are currently multiple overlapping strategies which purport to articulate the UK Government's ambitions, actions, and objectives for woodland creation. Stakeholders are concerned that it is unclear how the Government's policy objectives for forestry and the timber sector align with its land use and decarbonisation policies. Furthermore, it is not clear what will replace the England Trees Action Plan when it lapses in 2024 to give long term direction for Government's goals for woodlands. (Paragraph 36)
2. Although it has some references to the timber sector, the England Trees Action Plan, intended to be the 'strategic framework' for treescapes in England, did not comprehensively articulate a vision for timber production. It has not provided an adequate framework for the forestry sector. (Paragraph 37)
3. We therefore welcome Defra's engagement with the forestry, timber and construction sectors in relation to the industry-led National Wood Strategy and through the Timber in Construction working group. It is important that the proposed Timber in Construction Roadmap is published as soon as possible and provides clarity on how the growth of timber, and its use in domestic construction, will be encouraged. (Paragraph 38)
4. *To give the sector greater clarity, we recommend that future strategies for forestry should be fully integrated so as to establish a clear and holistic long-term vision for all woodland creation types. The Government should clearly set out how forestry in England will contribute to the delivery of its policy objectives for timber as well as for nature recovery and climate.* (Paragraph 39)
5. *We further recommend that the Timber in Construction roadmap should be closely related to, and developed in conjunction with, the Government's vision for the forestry sector as a whole. As we recommended in our recent report, Building to net zero: costing carbon in construction, this roadmap must address the afforestation commitments made in the England Trees Action Plan, and the need to demonstrate how timber supply in future decades will help to meet growing demand for timber construction products, in a comprehensive, integrated and strategic way.* (Paragraph 40)
6. Tree planting and woodland creation are vital for delivering many of the Government's environmental targets and commitments, as well as providing a domestic source of timber. We therefore support the tree planting targets set by the UK Government and welcome the commitments to increase woodland cover in England made in the Environmental Improvement Plan. (Paragraph 49)
7. We are concerned about the current rate of tree planting. In 2022–23, tree planting rates across the UK were at similar levels to the previous four years and remained below half the rate required to meet the overall target of 30,000 hectares per year by March 2025. At this rate it is extremely unlikely that current tree planting targets for England or the UK will be met. (Paragraph 50)

8. *We recommend that in its response to this report the Government provide an assessment of the progress of tree planting in (a) England and (b) the UK against the targets set by Ministers; set out its latest and most realistic estimate of the numbers of trees likely to have been planted by March 2025, and indicate whether it plans to adopt policies to accelerate the current rate of planting. (Paragraph 51)*
9. To ensure that the nation's woodlands help to deliver the Government's ambitions for nature, carbon storage and timber production, several stakeholders have called on the Government to apportion tree-planting targets in line with desired outcomes, to ensure that the right balance of outcomes is achieved from woodland creation. We agree. This initiative could also give the forestry sector and investors clearer direction as to the sort of woodlands which ought to be created under the policy. (Paragraph 52)
10. *In order to give the forestry sector greater clarity, we recommend that following the development of the Land Use Framework, the Government divide its overall tree planting targets into sub-categories for the types of woodland needed to achieve different goals. These targets should be underpinned by the clear, holistic long-term vision common to the timber and forestry sectors which we recommend above. (Paragraph 53)*

Delivery of tree planting

11. Forestry England has planted only 303 hectares against its target of 2,000 hectares of new planting between 2021 and 2026. Despite pursuing leasehold partnership arrangements, in recent years Forestry England has planted virtually no new woodlands on leasehold land. (Paragraph 63)
12. *Decisive action and a clear delivery plan are required for Forestry England to meet its target of planting 2,000 hectares of new woodland by 2026. We recommend that a plan be prepared by the end of October 2023 and published for transparency, to demonstrate to the public and the private sector that Forestry England is playing its part in meeting the national tree planting targets and in contributing to future timber supply. (Paragraph 64)*
13. The private sector is concerned about the implications of delays to Forestry England restocking on future timber supply. Forestry England is responsible for a significant proportion of domestic timber production and should be appropriately resourced to carry out timely restocking. (Paragraph 65)
14. *In addition to planting new woodland where possible and using good forestry practice to do so, we recommend that Ministers ensure that Forestry England has sufficient resources to restock cleared forest areas as soon as possible, to ensure that Forestry England at least maintains its contribution to future timber supply. (Paragraph 66)*
15. Central government is a major landowner. The Greening Government Commitments commit the Government to identify opportunities to contribute to nature recovery on the Government estate. Woodland creation can be a significant contributor to nature recovery. (Paragraph 70)

16. *We recommend that Ministers commission work to identify opportunities for woodland creation on the Government estate, to advance nature recovery further and increase timber production. (Paragraph 71)*
17. *Public annual reporting on progress towards the Greening Government Commitments apparently ceased in 2019–20. We recommend that annual reporting of this nature should be re-established as soon as possible, to give assurance to Parliament and the public that the Government is contributing to nature recovery to the fullest extent possible. (Paragraph 72)*
18. The Government is relying on third parties to plant the lion's share of the trees required to meet its tree planting targets and thus deliver timber production as well as a suite of climate and environmental objectives. It is therefore crucial that the Government is clear on what it requires prospective planters to do, and that it provides competitive and targeted incentives to encourage this. Given that the timber sector is a for-profit sector, it is appropriate that the England Woodland Creation Offer pays public money to incentivise the provision of public goods in the form of ecosystem services and nature restoration. We are nevertheless concerned that prospective planters seeking to plant productive woodlands are deterred from applying for the scheme because of a perception that it does not support productive forestry. The Government must therefore communicate as clearly as possible the fact that the England Woodland Creation Offer—the main grant to incentivise tree planting—can be used to support mixed forests which are commercially productive as well as benefiting nature recovery. (Paragraph 88)
19. *We recommend that in all its forestry and timber strategies the Government must ensure that it is clear to private landowners and the commercial forestry sector that grant schemes are intended to support planting for domestic timber production through the establishment of mixed woodlands planted to the UK Forestry Standard, as well as the establishment of majority native broadleaf woodlands. (Paragraph 89)*
20. To realise the benefits of tree planting, and to avoid detrimental outcomes, it is essential that the 'right tree in the right place' principle is followed. The 'presumption to plant' principle being developed by the Forestry Commission could be a useful tool to enable ecologically sensitive tree planting and faster approvals, and is likely to reduce the administrative burden entailed in woodland creation so as to encourage private landowners to apply for woodland creation grants. (Paragraph 95)
21. The reliance on the UK Forestry Standard to ensure the sustainability of planting in areas identified as 'low risk' could provide a proportionate risk-mitigation mechanism. For this to operate effectively it is important that Forestry England maintain its monitoring of the compliance of new woodland with the UKFS beyond the establishment stage. We discuss this issue in further detail below. (Paragraph 96)
22. *For transparency, we recommend that the Forestry Commission publish a summary of the analysis underpinning the 'presumption to plant' system when details of how the system will work are announced. (Paragraph 97)*

Sustainable timber production

23. Against a backdrop of increasing demand, the UK's softwood timber production is set to peak in the late 2030s before falling back to current levels in the 2040s. Given the UK's heavy reliance on timber imports and the potential negative impacts that increased UK and global demand could have on the planet's most ecologically sensitive and biodiverse forests, it is right that the UK should do more to meet a higher proportion of its timber consumption through domestically grown timber. It is unlikely that the UK will be able to fully supply all its timber needs domestically, especially against a backdrop of increasing demand and limited land availability. There is nevertheless scope to increase domestic timber production. (Paragraph 119)
24. *We recommend that the Government set a realistic long-term target for the amount of timber to be produced domestically. This target should be informed by:*
 - *the analysis being undertaken to produce Defra's Land Use Framework;*
 - *a comprehensive analysis of the commercial species which need to be planted, and over what area, and*
 - *the context of the global timber market, including a realistic assessment of the level of imports still required to meet both the quality and quantity requirements of the UK market.* (Paragraph 120)
25. *In tandem with this target, and in line with our earlier recommendations, we recommend that the Government determine the proportion of new woodland to be established under current targets which is to contribute to timber production.* (Paragraph 121)
26. Delivery of the Government's net zero and nature recovery targets depends on wide-scale woodland creation. The amount of CO₂ absorbed, the levels of biodiversity supported and other benefits or negative effects of woodland creation are all highly variable, depending on where and how woodland is established, the tree species present, site conditions and management. (Paragraph 140)
27. Planting more conifer trees is needed if domestic softwood production levels are to be maintained or increased. However, a policy to grow productive woodlands to achieve future timber supply and other benefits for nature and climate, are dependent on forests surviving in the medium to long term. Such policies should therefore be developed within an overall strategy which prioritises species diversity and resilience. (Paragraph 141)
28. New or restocked woodlands planted to the UK Forestry Standard (UKFS) will have lower yields of timber per area. The planting of predominantly broadleaf species in recent decades has reduced the future availability of softwood timber. To ensure the continued availability of softwoods from productive forestry, it is evident that rates of conifer planting compliant with UKFS ought to increase. But increased planting of conifers ought not to be undertaken at the expense of native broadleaf species, given the clear importance of the latter for biodiversity levels. (Paragraph 151)

29. Given the different advantages of different woodland types and species mixes for biodiversity, carbon storage and timber production, to ensure that the benefits of the nation's woodlands are fully realised, the total area of woodland managed to the UKFS must be increased. Significantly expanding the UK's woodland cover is necessary not only to compensate for predicted shortfalls in the supply of domestically-produced softwood timber, but also to enhance the resilience of the nation's woodlands to future pest, disease and climate challenges through increasing the diversity of trees planted. (Paragraph 152)
30. *We recommend that the project board with oversight of the current quinquennial review of the UK Forestry Standard ensure that the revised Standard not only contributes to beneficial outcomes for biodiversity and carbon storage but also supports productive forestry to the fullest extent compatible with climate and nature goals. This overall objective must be supported by the policy instruments available to the Forestry Commission in England and to Defra Ministers. The Commission and the UK Government should seek to work constructively with their counterparts in the devolved administrations and partner forestry agencies to ensure the overall growth of the forest estate managed to the UK Forestry Standard.* (Paragraph 153)
31. The UK Forestry Standard underpins regulation of the sustainability of the nation's forests and plays an important role in ensuring that renewed efforts to increase timber supply do not repeat the mistakes of the past. Yet the existence of the standard is not proof that the nation's forests are being managed sustainably. We are concerned by reports that compliance with this important standard is not being monitored throughout the lifetime of England's forests and reports that Forestry England lacks labour resource to carry out routine monitoring. Without regular monitoring, Forestry England cannot be sure that forests are being managed sustainably to the UKFS beyond the establishment phase. (Paragraph 162)
32. The Government aims to increase tree-cover expansion at rates not seen for decades in order to deliver a range of ecosystem service benefits. To ensure that these benefits are realised, and to deliver the Government's vision for increased woodland cover, Forestry England must be resourced appropriately so as to ensure that new woodland is compliant with the UKFS at establishment stage and throughout the lifetime of the woodland. (Paragraph 163)
33. *Given the importance of the UKFS in ensuring that forests are managed sustainably, we recommend that the Forestry Commission establish a programme for the routine monitoring of woodland to ensure that the standard is being adhered to beyond establishment, adopting new technology to aid this, where feasible to do so.* (Paragraph 164)
34. *We further recommend that the Forestry Commission urgently review the resources available to Forestry England so as to ensure that it has sufficient resources to ensure the compliance of woodlands with the UKFS.* (Paragraph 166)

Using domestically grown timber to contribute to reach net zero

35. We welcome the Government's aims to increase the uptake of timber in construction. The long-term use of timber in construction offers longer term carbon storage potential than other uses of harvested wood products and therefore has an important role to play in helping the UK to meet its net zero targets. (Paragraph 177)
36. It is important that domestically-grown timber resulting from the current drive to plant is available for use in construction as far as possible. While there is scope to use UK-grown timber for a wide variety of non-structural purposes, engineered solutions and potentially changes in construction practices are required to allow the use of domestically grown timber structurally. Engineered timber, for example cross-laminated timber, laminated veneer lumber and heat-treated timber, offer opportunities for domestically-grown timber to be used to create structural components and be utilised in construction. We welcome the Government's support for the development of innovative timber products. (Paragraph 178)
37. *To support the Government's commitments, we reiterate the recommendation made in chapter 1 that the Timber in Construction roadmap be published as soon as possible. The roadmap must comprehensively address the afforestation commitments made in the England Trees Action Plan and the need for timber construction products.* (Paragraph 179)
38. *For UK-grown timber to be used in construction, the Government needs to support the sawmilling sector to transition UK production towards producing a higher percentage of construction grade timber products and engineered timber. Action to support this transition should be specifically set out in the Timber in Construction roadmap.* (Paragraph 180)
39. *The Timber in Construction roadmap should consider how Government can incentivise changes in practice to allow the safe use of domestically grown timber in construction, including through the use of innovative engineered timber products.* (Paragraph 181)
40. Growing the market for hardwood in composite products—as an alternative to use for firewood—could utilise broadleaf resources in the UK, with the added benefit of incentivising more broadleaf woodlands to be brought into management. However, growing quality hardwoods remains difficult due to disease and pests, and undermanagement. (Paragraph 187)
41. *We recommend that, as part of the Timber in Construction Roadmap, the Government consider how the future UK market can be served by a greater proportion of domestically grown hardwoods (for example, through engineered timber products).* (Paragraph 188)
42. While imported woody biomass continues to be a major bioenergy feedstock, it is important that biomass used in UK power generation, whether from the UK or overseas, is genuinely sustainably sourced in a way which minimises the impact on forest biodiversity and carbon stocks. The CCC has continually stressed that strengthened governance of bioenergy markets is needed domestically and internationally to manage the risks to sustainable low-carbon production as the global biomass market scales up. (Paragraph 216)

43. *The Biomass Strategy, which was promised by the end of 2022, must now be issued as soon as possible. We recommend that the Strategy take a risk-based approach to ensuring the sustainability of biomass use, managing risks on a domestic and a global scale. In preparing the Strategy we recommend that the Government consider the risks associated with life-cycle carbon emissions, land-use trade-offs, impacts on biodiversity and ecosystem service provision, and competition with other uses of biomass, and consider the merits of establishing quotas for, or a moratorium on, the use of the highest risk feedstocks. (Paragraph 217)*
44. *The amount of biomass used by the UK power sector should be constrained by the supply of low-carbon sustainable feedstocks, factoring in potential domestic supply and rising trends of bioenergy use globally. The Biomass Strategy should set out and quantify the potential of different biomass sources to deliver energy and explain how sufficient sustainability sourced biomass feedstocks will be found, from where, to meet demand required by BECCS, in line with net zero pathways. (Paragraph 218)*
45. *The Government needs to manage risks associated with the sustainability of feedstock supply through its governance framework for biomass, which must be strengthened. Improvements should include:*
 - *All biomass used for large-scale power generation in the UK should be required to adhere to the sustainability criteria set by the UK governance framework. The Government should include in its Biomass Strategy a thorough review of the subsidy regime for biomass.*
 - *The woody biomass land criteria should stipulate that generators and participants must demonstrate that all of their woody biomass supplied is 'legal and sustainable.'*
 - *As soon as robust life-cycle carbon assessment methodologies are available, biomass sustainability requirements should include the complete accounting of the life-cycle carbon emissions of using a source of woody biomass, from the carbon stored in the forest, through to the stack emissions. (Paragraph 219)*
46. *We echo and endorse the recommendation of the Business, Energy and Industrial Strategy Committee, in its recent report on Decarbonisation of the power sector, that the full lifecycle emissions from BECCS facilities in the UK should be made carbon neutral within a timeframe compatible with the UK's climate targets. (Paragraph 220)*
47. *As demand for biomass feedstock grows globally, sourcing more biomass domestically could increase the security of UK biomass supply. Provided that overharvesting is avoided, bringing a higher proportion of existing forests into active management could provide a source of woody biomass for bioenergy in the UK with added benefits for biodiversity and resilience. (Paragraph 228)*
48. *We recommend that the Government conduct an impact assessment of the effects on the delivery the UK's climate and biodiversity commitments of bringing a higher proportion of existing forests into active management. (Paragraph 229)*

49. Short-rotation forestry and short-rotation coppice crops are currently little used, but demand for them is likely to increase. If they are considered to be significant and necessary bioenergy feedstock sources, their planting must be scaled up sustainably, in line with best forestry practices and limited to an appropriate area of land, so as to minimise competition with food crops. (Paragraph 230)
50. *In the forthcoming Biomass Strategy and Land Use Strategy the Government must determine the capacity of the UK to supply bioenergy feedstock from its forest resources—including forest residues, short rotation forestry and coppicing—analysing the risks of drawing upon these resources and modelling land-use trade-offs, particularly in relation to security of food supply and in the context of the biodiversity crisis* (Paragraph 231)
51. *We recommend that the Forestry Commission, as the Government's experts on forestry, work with Ofgem to share best forestry practice. The objective of this collaboration ought to be to ensure that, should demand for domestic wood biomass in energy markets increase, the regulatory framework for bioenergy feedstocks derived from forestry crops and silvicultural activities is developed in line with principles of sustainable forestry. The collaboration ought to be undertaken in full recognition of the need to deliver on the UK's commitments to halt and reverse biodiversity loss by 2030 under the Kunming-Montreal Global Diversity Framework, and on the Government's commitments and obligations under the Environment Act 2021.* (Paragraph 232)

Annex 1: Glossary of terms

'Forest' and 'woodland'

- According to Forest Research, in the United Kingdom, there is no formal definition of **forest**; the term is often used for large woodland areas (especially conifers) or for old Royal hunting preserves such as the New Forest or the Forest of Dean.
- **Forestry** is the science or practice of planting, managing, and caring for forests.
- A **woodland** is defined by Forestry Research as land under stands of trees with a canopy cover of at least 20 per cent or having the potential to achieve this, including integral open space, and including felled areas that are due to be restocked. Generally (including the UK) woodland is defined as having a minimum area of 0.5 hectares.

In Forestry Commission publications, areas meeting the above definition are referred to as forests and woodlands interchangeably, although international publications such as those by UN bodies, tend to refer to forests.

The terms 'woodland' and 'forest' are used interchangeably in this report.

Tree types

- **Broadleaves:** Trees that do not have needles or cones, such as oak, birch and beech. A few, such as alder, have cone-like structures for their seeds which are not true cones. **Hardwood** is the wood of broadleaved trees, such as oak, birch and beech; a term sometimes used for the broadleaved trees themselves.
- **Conifers:** Trees with needles and cones, such as spruce, pine and larch. **Softwood** is the wood of coniferous trees, such as spruce, pine and larch; a term sometimes used for the coniferous trees themselves.

Types of UK trees and woodlands

- **Ancient semi-natural woodlands** Woodland which has been in continuous existence since 1600 (1750 in Scotland).
- **Plantation on ancient woodland site (PAWS):** Planted forests of native or non-native tree species that have replaced the original 'natural' woods on sites with a long history of woodland cover.
- **Native woodlands:** can include both semi-natural and planted broadleaf trees. Native species are defined as those that have arrived and inhabited an area naturally, without deliberate assistance by man. For trees and shrubs in the United Kingdom usually taken to mean those present after post-glacial recolonisation and before historic times.
- **Non-native woodlands:** typically consist of mainly conifer species, often managed commercially (for timber).
- **Mixed woodlands:** contain both broadleaf and conifer species.
- **Semi-natural woodland:** Woodland with natural characteristics (predominantly native species of trees, ground plants and animals) where wood production is not a primary objective; this term is used rather than natural because the woodland may have originally been planted or have been managed for wood production in the past.

Source: Adapted from Forestry Research, [Forestry Statistics 2022](#): Introduction, Glossary and Sources; Forestry Commission factsheet, [The benefits of woodland creation. Woods for Nature](#), January 2023, and Forestry Commission, [UK Forestry Standard](#), Fourth Edition (2017).

Annex 2: Visit to Wrexham and Shropshire, 9 and 10 March 2023

The Committee visited forestry and timber concerns in Wrexham and in Shropshire on 9 and 10 March 2023 in connection with the visit. The itinerary and the Committee's principal interlocutors are set out below.

Thursday 9 March 2023

Maelor Forest Nurseries Ltd

Gavin Adkins ACMA, Managing Director, Tilhill Forestry Ltd and Maelor Forest Nurseries Ltd

Ben Goh, Commercial Manager

Dr Shelagh McCartan, Science R&D Manager

Forestry England

Adam Drew, Head of Recreation and Engagement, West Forest District

James Simpson, Director of Operations for Forestry and Land Management

Natural Resources Wales

Dominic Driver, Head of Land Stewardship

Friday 10 March 2023

Charles Ransford and Son Ltd

Craig Leitch, Purchasing Director

S J Roberts Construction/Lowfield Timber Frames

Tim Morris, Operations Director

James Roberts, Technical Co-ordinator

Formal minutes

Wednesday 12 July 2023

Members present

Philip Dunne, in the Chair

Ian Levy

Caroline Lucas

Cherilyn Mackrory

Cat Smith

Claudia Webbe

Sustainable timber and deforestation

The Committee deliberated.

Draft Report (*Seeing the wood for the trees: the contribution of the forestry and timber sectors to biodiversity and net zero goals*), proposed by the Chair, brought up and read.

Paragraphs 1 to 232 read and agreed to.

Summary agreed to.

Annexes agreed to.

Resolved, That the Report be the Fifth Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Adjournment

Adjourned till Wednesday 19 July at 1.00 pm.

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Wednesday 26 October 2022

Andrew Carpenter, Chief Executive, Structural Timber Association; **Stuart Goodall**, Chief Executive, Confederation of Forest Industries UK; **Nick Phillips**, Forestry Policy Lead, Woodland Trust; **Ian Tubby**, Head of Forest Services Policy and Advice Team, Forestry Commission

[Q1–48](#)

Dr Alan Knight, Group Director of Sustainability, Drax Group; **Professor Michael Norton**, Environment Programme Director, European Academies Science Advisory Council; **Professor Patricia Thornley**, Director of the Energy and Bioproducts Research Institute, Aston University

[Q49–56](#)

Wednesday 2 November 2022

Dr Alan Knight, Group Director of Sustainability, Drax Group; **Professor Michael Norton**, Environment Programme Director, European Academies Science Advisory Council; **Professor Patricia Thornley**, Director of the Energy and Bioproducts Research Institute, Aston University

[Q57–82](#)

Wednesday 9 November 2022

Sir Ian Cheshire, Chair, We Mean Business Coalition; **Alexandria Reid**, Senior Global Policy Adviser, Global Witness; **Michael Rice**, Lawyer, Forest-risk Commodities, Client Earth; **Dr Chris West**, Lead for Sustainable Consumption and Production group, Stockholm Environment Institute York

[Q83–114](#)

Wednesday 7 December 2022

Graham Clark, Senior Land Use Policy Adviser, Country Land and Business Association; **Ben Goh**, Commercial Manager, Maelor Forest Nurseries; **David Hopkins**, Chief Executive, Timber Development UK; **Justin Mumford**, Chartered forester and representative, Institute of Chartered Foresters

[Q115–153](#)

Professor David Coomes, Professor of Forest Ecology and Conservation, University of Cambridge; **Dr Mike Morecroft**, Principal Specialist, Climate Change, Natural England; **Dr Andrew Weatherall**, Principal Policy Officer for Woodlands and Forestry, Royal Society for the Protection of Birds (RSPB)

[Q154–196](#)

Wednesday 1 March 2023

Helen Bellfield, Policy Director, Global Canopy; **Danielle Carreira**, Head of Finance Sector Engagement, Tropical Forest Alliance, World Economic Forum; **Andrew Howard**, Global Head of Sustainable Investment, Schroders

[Q197–241](#)

Ligia Baracat, UK Policy and Advocacy Officer, Forest Peoples Programme; **Duncan Brack**, independent environmental policy analyst, n/a, Associate Fellow, Chatham House, Associate, Green Alliance; **Dr Constance McDermott**, Jackson Senior Fellow and Associate Professor, Land Use and Environmental Change, University of Oxford

[Q242–265](#)

Wednesday 29 March 2023

Trudy Harrison MP, Parliamentary Under-Secretary of State (Minister for Natural Environment and Land Use), Department for Environment, Food and Rural Affairs; **Sir William Worsley**, Chair, Forestry Commission

[Q266–338](#)

Trudy Harrison MP, Parliamentary Under-Secretary of State (Minister for Natural Environment and Land Use), Department for Environment, Food and Rural Affairs; **The Right Hon. the Lord Goldsmith of Richmond Park**, Minister of State (Overseas Territories, Commonwealth, Energy, Climate and Environment), Foreign, Commonwealth and Development Office; **Maggie Charnley**, Head, International Forests Unit, Department for Energy Security and Net Zero

[Q339–378](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

DEF numbers are generated by the evidence processing system and so may not be complete.

- 1 Agricultural Industries Confederation ([DEF0005](#))
- 2 Association of Renewable Energy and Clean Technologies (REA) ([DEF0046](#))
- 3 Atkinson, Mr David (Senior Forestry Manager, Edwin Thompson) ([DEF0004](#))
- 4 Catholic Agency for Overseas Development (CAFOD) ([DEF0030](#))
- 5 ClientEarth ([DEF0053](#))
- 6 Confor - Confederation of Forest Industries UK ([DEF0045](#))
- 7 Continuous Cover Forestry Group ([DEF0033](#))
- 8 Cut Carbon Not Forests; Biofuelwatch; Dogwood Alliance; Southern Environmental Law Center; Stand.earth; and Natural Resources Defense Council ([DEF0013](#))
- 9 Department for Environment, Food and Rural Affairs ([DEF0049](#))
- 10 Drax Group ([DEF0044](#))
- 11 Earthsight ([DEF0020](#))
- 12 Environmental Investigation Agency ([DEF0031](#))
- 13 FERN ([DEF0035](#))
- 14 FSC UK ([DEF0008](#))
- 15 Fairtrade Foundation ([DEF0010](#))
- 16 Fauna & Flora International ([DEF0015](#))
- 17 Forest Peoples Programme ([DEF0019](#))
- 18 Forestry Commission ([DEF0058](#))
- 19 Fraser, Dr. Alastair (Forest Policy and Economics Consultant, Self employed) ([DEF0003](#))
- 20 Friends of the Earth (England, Wales and Northern Ireland) ([DEF0022](#))
- 21 Game & Wildlife Conservation Trust ([DEF0021](#))
- 22 Global Canopy ([DEF0025](#))
- 23 Global Witness ([DEF0029](#))
- 24 Gresham House ([DEF0057](#))
- 25 Grown in Britain ([DEF0027](#))
- 26 Hazlin of Ludlow Ltd ([DEF0016](#))
- 27 Heald, Mr Andrew (Director , Andrew Heald Consulting Ltd) ([DEF0032](#))
- 28 Holub-Swindell, Mr S ([DEF0001](#))
- 29 Institute of Chartered Foresters ([DEF0039](#))
- 30 Lowfield Timber Frames ([DEF0056](#))
- 31 Mighty Earth ([DEF0037](#))
- 32 Mineral Products Association ([DEF0043](#))

- 33 Natural England ([DEF0052](#))
- 34 PEFC UK Ltd ([DEF0014](#))
- 35 RSPB ([DEF0028](#))
- 36 Ridley-Ellis, Dr Daniel (Associate Professor, Edinburgh Napier University) ([DEF0034](#))
- 37 Royal Forestry Society ([DEF0023](#))
- 38 Royal Society for the Protection of Birds; Wildlife and Countryside Link; MCS Charitable Foundation; and Soil Association ([DEF0038](#))
- 39 Schroders ([DEF0054](#))
- 40 Scottish Woodlands Ltd ([DEF0047](#))
- 41 Soil Association ([DEF0026](#))
- 42 Supergen Bioenergy Hub ([DEF0051](#))
- 43 The Food Foundation ([DEF0041](#))
- 44 Timber Development UK / Timber Trade Federation ([DEF0017](#))
- 45 Tony's Chocolonely ([DEF0055](#))
- 46 Vastern Timber ([DEF0024](#))
- 47 Woodknowledge Wales ([DEF0036](#))
- 48 WWF UK ([DEF0042](#))
- 49 West, Dr Chris (Senior Research Fellow, Stockholm Environment Institute, University of York) ([DEF0012](#))
- 50 Wood Panel Industries Federation ([DEF0007](#))
- 51 Woodland Trust ([DEF0040](#))
- 52 Zoological Society of London ([DEF0050](#))
- 53 Stillwell, Mr N (Storm Board LLP) ([DEF0002](#))

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the publications page of the Committee's website.

Session 2022–23

Number	Title	Reference
1st	Building to net zero: costing carbon in construction	HC 103
2nd	Pre-appointment hearing: Chair of the Environment Agency (Pre-appointment hearing)	HC 546
3rd	Recommendations on the Government's draft environmental principles policy statement	HC 380
4th	Accelerating the transition from fossil fuels and securing energy supplies	HC 109
1st Special	Water quality in rivers: Government Response to the Committee's Fourth Report of Session 2021–22	HC 164
2nd Special	Greening imports: a UK carbon border approach: Government Response to the Committee's Fifth Report of Session 2021–22	HC 371
3rd Special	Building to net zero: costing carbon in construction: Government Response to the Committee's First Report	HC 643
4th Special	Accelerating the transition from fossil fuels and securing energy supplies: Government and Regulator Response to the Committee's Fourth Report	HC 1221

Session 2021–22

Number	Title	Reference
1st	Biodiversity in the UK: bloom or bust?	HC 136
2nd	The UK's footprint on global biodiversity	HC 674
3rd	Green Jobs	HC 75
4th	Water quality in rivers	HC 74
5th	Greening imports: a UK carbon border approach	HC 737
1st Special Report	Energy efficiency of existing homes: Government Response to the Committee's Fourth Report of Session 2019–21	HC 135
2nd Special Report	Growing back better: putting nature and net zero at the heart of the economic recovery: Government and Bank of England Responses to the Committee's Third Report of Session 2019–21	HC 327
3rd Special Report	Biodiversity in the UK: bloom or bust?: Government Response to the Committee's First Report	HC 727

4th Special Report	Green Jobs: Government Response to the Committee's Third Report	HC 1010
5th Special Report	The UK's footprint on global biodiversity: Government Response to the Committee's Second Report	HC 1060

Session 2019–21

Number	Title	Reference
1st	Electronic Waste and the Circular Economy	HC 220
2nd	Pre-appointment hearing for the Chair-Designate of the Office for Environmental Protection (OEP)	HC 1042
3rd	Growing back better: putting nature and net zero at the heart of the economic recovery	HC 347
4th	Energy Efficiency of Existing Homes	HC 346
1st Special Report	Invasive species: Government Response to the Committee's First report of Session 2019	HC 332
2nd Special Report	Our Planet, Our Health: Government Response to the Committee's Twenty-First Report of Session 2017–19	HC 467
3rd Special Report	Electronic Waste and the Circular Economy: Government Response to the Committee's First Report	HC 1268