STATE OF THE UK'S WOODS AND TREES

Trees and woods in a changing world – a summary for England

WOODLAND TRUST

Summary report

June 2025

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Introduction

The UK's climate is changing: 2024 was the warmest year on record globally and the first year that was more than 1.5°C above pre-industrial levels. The Met Office outlook for 2025 suggests that it will be one of the three warmest years for global average temperature, along with 2024 and 2023.

Along with the changing climate, England is facing a nature crisis. England has experienced a significant loss of biodiversity over the last few decades and despite progress in ecosystem restoration and conservation programmes, biodiversity continues to decline.

The UK has set ambitious targets to address climate change and nature loss through the Paris Agreement and the Global Biodiversity Framework, and although knowledge of how to do this is comprehensive, the support needed is not there.

Trees and woods are a vital part of the solution; sensitive management supports woodland biodiversity and appropriate tree planting can increase carbon capture. However, climate change and biodiversity loss also threaten woodlands by undermining their ecological functioning, making them more vulnerable, and eroding their ability to deliver the many benefits they provide. Action to increase forest resilience against these threats is more urgent than ever.

State of the UK's Woods and Trees 2021 report collated disparate sources of data to produce the first report detailing the state of the UK's native woodlands. This second report updates their current state, the threats they face and what can be done to address them and halt species declines.

It is a pivotal time for action – only five years away from 2030, the year in which many targets are due to be reached. These include the legal target to halt the decline in species and to protect 30% of land and sea for nature by 2030. In early 2025 the Climate Change Committee (CCC) published its Seventh Carbon Budget, updating its advice to the UK Government on the measures needed to reach net zero greenhouse gas emissions.

This summary report contains data included in State of the UK's Woods and Trees 2025, on the extent, condition, threats to and value of England's woods, as well as looking at solutions. Its purpose is to drive positive change for native woods by identifying key threats and clearly lays out what needs to happen to improve their condition and secure their future.

Key results

Extent and condition

Most woodlands in England are not in good condition, although woodland extent has shown a modest increase since the last State of Woods and Trees report.

England contains a considerable number of ancient and veteran trees and a significant portion of the UK's temperate rainforest, but these habitats need better protection and management. England also displays significant regional variation in urban tree canopy cover.

People and wildlife

Across England woodland biodiversity continues to decline, and although positive signs can be seen for certain species, woodland management to benefit woodland biodiversity is needed. Nature is beneficial for people's mental and

physical wellbeing, and people in England value access to nature. However, as with urban tree canopy cover, access to beneficial woodland biodiversity is not distributed equally.

Threats

Woodlands in England continue to face threats including introduced pests and pathogens, pollution, extreme weather and herbivore impacts from deer and grey squirrels. These threats all have the potential to threaten conservation objectives, but a lack of incentives for woodland management and a skills gap in the conservation sector limit the action that is needed.

What's happening?

Current planting rates are off track to meet the targets set by the Climate Change Committee, and increased planting rates are needed.

Agroforestry, woodland management, restoration of plantation on ancient woodland sites and natural flood management schemes offer opportunities to meet nature recovery, climate emergency adaptation and tree cover targets, while benefiting people and communities.

Policy asks

To **enhance and protect existing woods and trees**, the government should:

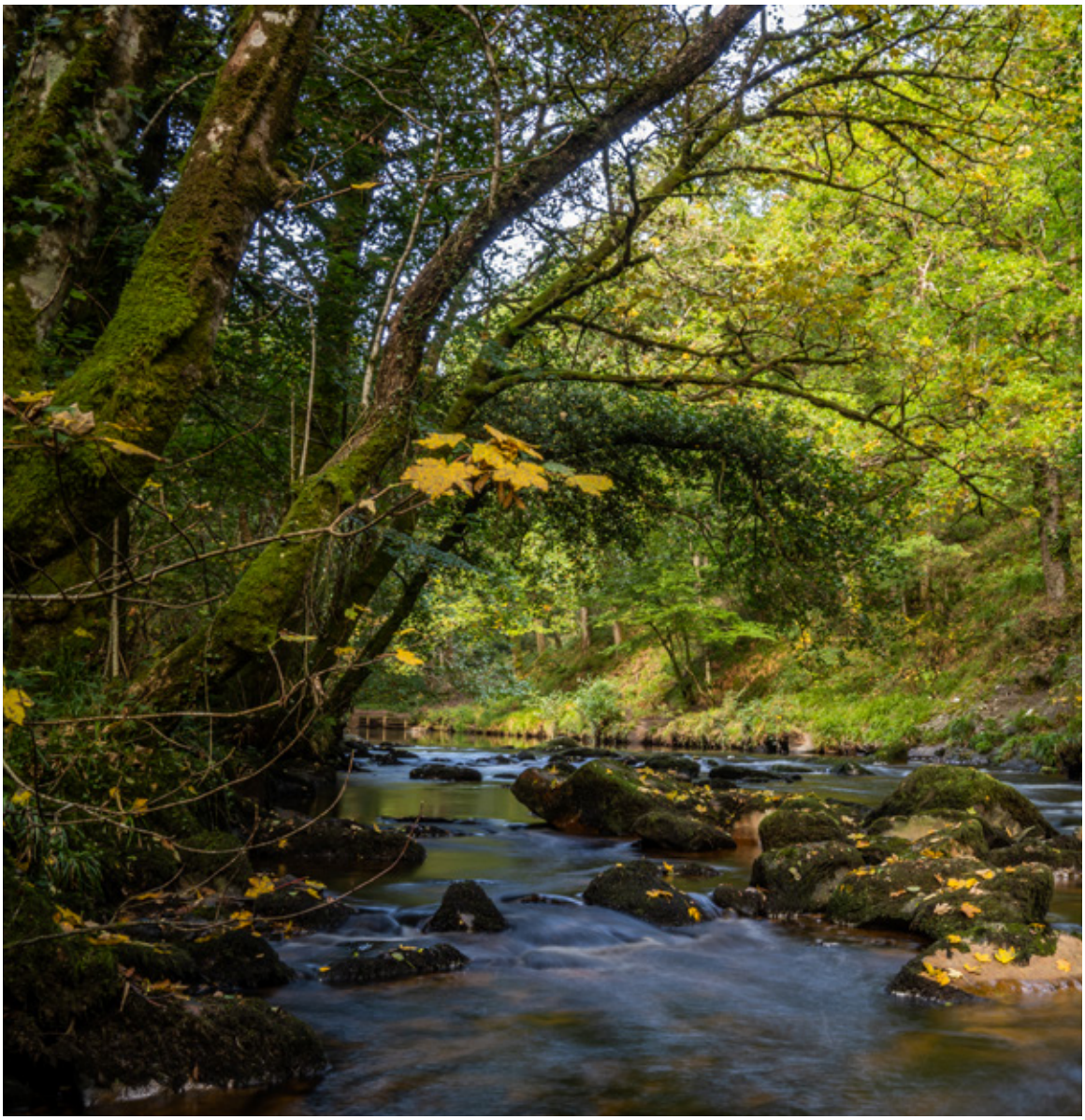
1. Ensure there is no further loss of semi-natural woodland habitats and species.
2. Manage woods for nature.
3. Launch a national rescue plan for ancient woodland.
4. Protect woods from nitrogen pollution.

To **expand and connect woodland and tree cover**, the government should:

1. Increase canopy cover for climate and nature.
2. Commit to a major upscaling of agroforestry.
3. Develop and launch a new strategic approach for deer management.
4. Pave a way for self-sufficiency in tree supply.
5. Create nature-rich, accessible woods and trees where they are currently lacking.

To **improve the evidence**, the government should:

1. Improve the methodologies used to assess woodland carbon.
2. Monitor loss of woodland tree cover to get accurate figures for woodland creation.



BEN LEE/WTML

1. Extent and condition of woods and trees

Extent

To ensure England's woods can withstand and adapt to the threats and challenges they face, alongside protection and restoration of existing woodlands, expansion and creation of new woodlands is vital. Increasing the cover of woodlands adds to resilience by providing greater buffering to threats and corridors and larger areas where species can thrive. Increasing woodland cover requires a comprehensive understanding of where England's woods currently are; woodland cover statistics allow for analysis of woodland cover over time. *State of the UK's Woods and Trees 2021* (*SoWT 2021*) showed that woodland covered 13.2% (3.2 million hectares) of the UK's land surface. This was split roughly equally between native and non-native species, with ancient woodland making up 2.5% of the UK's land area. An update on these figures relevant to England is provided using data from the National Forest Inventory (NFI):

- There has been a slight increase in canopy cover in the UK since *SoWT 2021*, with woodland now covering 13.5% of the UK. Woodland area in England has shown a modest increase since 2020 and now covers 10.3% of the land. The total area of woodland in the UK in 2024 was estimated to be 3.28 million hectares. Of this total, around 1.34 million hectares is in England.
- Ancient woodland totals 609,990ha of the UK, covering 2.5% of the land area. 364,200ha is in England, covering 2.8% of the land area of the country and of this, 149,164ha is plantation on ancient woodland sites (PAWS), covering 1.14% of the country.
- In 2019, the Ancient Woodland Inventory (AWI) update project began. The inventory is due to be complete in 2026.
- As of May 2025, over 10,000ha of newly identified ancient woodland has been added to the updated AWI. This includes woodlands >0.25ha, wood pasture and parkland. This is from just nine of the counties so by the time the whole country has been updated, a significantly higher figure is expected.
- In England, Forest Research has also recently mapped the distribution of trees above three metres and a 5m^2 area outside of woodland, including small woods, groups of trees and lone trees, revealing that they make up 30% of the nation's tree cover.

Condition

Having woodlands in good condition is vital as they provide habitats for wildlife and are more likely to be able to provide ecosystem services and to be resilient and able to adapt to future changes in climate.

SoWT 2021 reported Forest Research NFI's woodland ecological condition data that shows that most of Britain's native woodlands are currently not in good ecological condition, with the majority of woodlands falling into an intermediate condition category. Understanding what this means for practical management in order to improve condition requires looking at the individual attributes that make up condition. Using this attribute data, the NFI for England shows:

- Only 9% of native woodland area in England is in favourable condition, 90% is in intermediate condition, and 0.5% is in unfavourable condition.
- Many attributes contribute to woodlands falling into unfavourable or intermediate condition, although some contribute more than others. Fragmentation of woods, and the low levels of older and veteran trees in particular, are principal reasons for woods failing to meet favourable condition. For example, 99% of native woodland area in England is in unfavourable condition for the presence of veteran trees.
- 79% of native woodland area is in unfavourable condition for levels of deadwood, while 38% is in unfavourable condition for herbivore damage and 25% is in unfavourable condition for woodland size.
- 10% of native woodland area is in unfavourable condition for invasive species, and 2% is in unfavourable condition for pests and diseases.
- However, some woodland attributes show more positive signs: 86% of native woodland area is in favourable condition for 'nativeness' of canopy, 68% is in favourable condition for the number of native species within their canopy and 59% is in favourable condition for vertical canopy structure.

- Although woodland management is undertaken on a single woodland scale following an assessment of threats and condition, understanding these attributes will provide the best chance at achieving large-scale woodland recovery at a landscape scale.

Ancient and veteran trees

Ancient and veteran trees have an extraordinary ability to capture hearts and minds. They are valuable custodians of cultural heritage and disproportionately important for biodiversity compared to younger trees, offering niches for a range of species which aren't found anywhere else. The UK's oldest and most special trees include internationally renowned collections of ancient and other veteran trees, as well as trees termed heritage trees.

- The Ancient Tree Inventory (ATI) is a data set of records of ancient, veteran and other notable trees in the UK. As of August 2024, 233,201 ATI records of ancient, veteran and notable trees have been verified in the UK, with the vast majority of recorded trees (192,702) existing within England (83%), although it is important to note that the ATI is not a complete data set.
- Recent research has suggested there may be 8-10 times more ancient and veteran trees in England than suggested by the current number of verified trees recorded in the ATI. Important sites for ancient and veteran trees include Epping Forest and Burnham Beeches, which contain high numbers of beech trees, the second most frequently recorded species on the ATI. Many sites with ancient and veteran trees suffer from a problem known as the generation gap, where there is a large age gap between the current cohort of ancient and veteran trees and the ancients and veterans of the futures. Sherwood Forest is a good example, where there is an age gap of several centuries between the oldest trees and the next generation. Microhabitat creation and securing future veteran trees is vital.

ANITA NICHOLSON/WTML

Temperate rainforest

Temperate rainforests are globally rare habitats that occur in regions across the temperate zone where there are high levels of rainfall and oceanicity. High humidity and low temperature fluctuations create conditions that are suitable for the growth of specialised plants and fungi, bryophytes, ferns and lichens, and are characterised by a layer of epiphytes growing on and within the canopies of trees. They are unique and culturally significant woodlands, and some areas of England provide suitable conditions for temperate rainforest to thrive.

- South West England holds a significant portion of the UK's temperate rainforest zone.
- There is 878km^2 of existing woodland of rainforest potential in SW England (59km^2 is hyper oceanic, 819km^2 is oceanic), 26% of which is mapped as ancient woodland. However, the oceanic zone that could potentially support temperate rainforest covers almost 40% of SW England (9,597km^2).
- In South West England only 15% of temperate rainforest is legally protected by statutory designation (SSSI).
- Condition assessments of temperate rainforest in South West England are limited by the availability of consistent and up-to-date condition data. However, three independent sources of condition assessment suggest that the majority of temperate rainforest sites are in poor/unfavourable condition. Of the legally protected woodland with temperate rainforest potential in the South West, 55% are classified by Natural England as being in an unfavourable condition.
- It is estimated that 28.6% of the oceanic climate zone (or 11.5% of South West land area) and 51% of the hyper-oceanic climate zone (0.02% of South West land area) is highly suitable for temperate rainforest restoration and/or expansion. The Woodland Trust and South West Temperate Rainforest Alliance want to triple the area of temperate rainforest in the region by 2050.

Urban tree cover

The 'urban forest' provides vital ecosystem services such as shading, cooling and supporting physical and mental wellbeing. The urban forest provides most people's primary form of contact with trees and woods, but despite the vital importance of the urban forest, information about levels of urban tree canopy cover (UTCC) across the UK is relatively scarce.

- Significant variation in UTCC exists at every administrative level in the UK, but UTCC figures for UK cities are well below the European average.
- The average UTCC across the UK was 19.3% with a figure of 19.5% for England. The region with the highest UTCC was South East England, at 25.5%, with North East England having the joint-lowest UTCC level across the UK with 15.2%. At a city level Portsmouth displayed the lowest UTCC, while neighbourhoods in Greater London displayed the greatest overall range in UTCC, ranging from 0-70%. At individual electoral ward and local authority level, significant variation exists, although South East England featured the highest level of UTCC across the UK at both administrative levels. Eastern England and the North Midlands featured four of the five electoral wards with the lowest UTCC, while local authorities in London, eastern and northeastern England comprise four of the five local authorities across the UK with the lowest UTCC.

BEN LEE/WTML

- The importance of urban trees and green space for restoring nature to urban cities is recognised by government in the recently published Green Infrastructure Framework to guide local policy-making, including a Standard for Urban Nature Recovery. This requires the locally determined expansion of nature-focused green infrastructure and restoration of urban wildlife-rich habitat. Government is also expected to re-affirm the Environmental Improvement Plan commitment that everyone should live within 15 minutes of good quality green space, a commitment which must be backed with measures to overcome both physical and socioeconomic barriers, while ambitious planting targets are also widespread at a city level across the UK and in Europe; for example London's Environmental Strategy goal of expanding UTCC by 10% by 2050.

As the data above highlights, urban woods and trees are not distributed equally. The Woodland Trust has developed the Tree Equity Score and tool to highlight this disparity and help local planners and communities address it. As of November 2023, nearly 30,000 neighbourhoods in England have been given a Tree Equity Score, which ranges from 0 to 100. Approximately 80% of neighbourhoods covered by Tree Equity Score in England have inadequate tree cover. Using the Tree Equity Score and tool, expansion can be targeted in areas which need it most and where the benefit will be greatest.

PHILIP FORMBY/WTML

2. People and wildlife

Access and wellbeing

There is evidence that spending time in nature can decrease the risk and burden of poor health and elevate people's wellbeing, leading to considerable savings to the health system. Publicly accessible natural spaces are therefore vital infrastructure for supporting the health and wellbeing of the population. Data shows that:

- The public generally agree being in nature makes them happy. Woodlands are in the top three most visited type of natural spaces in England and are an important habitat type when it comes to delivering wellbeing benefits.
- While it is difficult to distinguish exactly which characteristics of greenspace are most beneficial for mental health, participants in a study in England favoured variety and complexity in the woodland environment and suggested broadleaved woodlands were generally preferred to conifer plantations.
- The People and Nature Survey for England shows that fresh air, physical exercise, mental health and wellbeing are cited as reasons for visiting woods throughout the year.
- Greenspace also provides significant financial benefits. It's estimated for England in 2019, visits by the public to natural environments facilitated enough physical activity to prevent between £70 million – £150 million in avoided healthcare and societal costs of ill health. The annual mental health benefits associated with visits to England's woodlands were estimated to be £141 million per year (at 2020 prices). The annual valuation of overall health benefits from recreation in woodlands was estimated at £859 million in 2022.
- Over 5,000 people representing a diverse cross-section of the public from across England, Wales, Scotland and Northern Ireland were surveyed online. Overall, people reported experiencing positive wellbeing in response to biodiversity within a woodland local to them, with an average score of 61.7 out of 100 (where values above 50 represent positive wellbeing in response to biodiversity).
- Using this data, the University of Kent has mapped the distribution of woodland species known to possess wellbeing effect traits. The maps indicate the richness of these wellbeing effect traits across England is not distributed equally, with a negative association between species richness and socioeconomic deprivation reported.

Biodiversity

Biodiversity is both worthy of protection in and of itself and essential for woodland resilience in a changing world, but the results from the Bunce survey and indicator data for a wide range of woodland species reveal that woodland biodiversity is continuing to decline.

- At a UK level, many of the woodland-associated species experiencing ongoing declines are those which require open spaces and diverse vegetation structure within woodlands to thrive, and this trend is consistent with the general reported trends of canopy closure. Additional drivers affecting the composition of woodland flora include eutrophication, tree disease and deer browsing, while a warming climate is also favouring certain species.

PETER DENCH/WTML

- England's woodland specialist bird index was 51% lower in 2022 than in 1970, while the woodland generalist index was 10% lower. No bat specific data was available for England, but generic mammal indices include signs of recovering bat populations, in keeping with trends in other UK countries.
- In order to protect woodland species, large-scale creation, restoration and protection of woodland is required. However, there is currently no evidence that the Government is on track to meet its crucial 30 x 30 target which stipulates that 30% of England's land and sea should be protected and managed for nature by 2030.

Carbon

- Woods and trees play a significant role in the carbon cycle and the UK's climate change mitigation and net zero strategy. Existing woodlands store carbon in both tree biomass and in forest soils. Protecting and strengthening the stability of these carbon stocks needs to be prioritised as declining condition, pests and diseases and the impacts of climate change may lead to significant losses of carbon. The total carbon stock of UK forests is about one billion tonnes of carbon (1095 Mt C), while total carbon stock of forests in England is 0.4 billion tonnes (400 Mt C). The carbon stock of living trees within ancient and long-established woodland is set to double over the next 100 years.
- Recent LiDAR assessments of native trees suggest traditional methodologies may be underestimating the carbon stock of the above ground biomass of semi-natural native broadleaf woodland by nearly 80%.
- The timing of woodland creation matters, due to the slow initial rates of carbon sequestration as trees grow. At a UK level, it's estimated that if creation targets had been met between 2020-2021 and 2023-2024, an additional 8.5 million tonnes of carbon dioxide (Mt CO2e) would have been removed by 2050.
- Planting rates are significantly off track in meeting the required woodland creation targets to achieve the CCC's net zero pathway. While further analysis is needed to allow for a greater understanding of the role of woods and trees in carbon sequestration in England, the CCC's seventh carbon budget advice includes recommendations for planting new diverse woodlands to increase UK woodland cover area from 13% to 16% by 2040 and 19% by 2050. This would require tree planting rates to more than double to 37,000ha pa by 2030.


EDWARD PARKER/WTML

3. Threats to native woodland in England

Introduced pests and pathogens

Introduced pests and pathogens ('pests') have the capacity to cause widespread impacts on and losses of trees, as witnessed with Dutch elm disease and ash dieback. *SoWT 2021* reported a significant rise in the incidence of serious pest introductions since 1990.

- The UK currently hosts 121 introduced pests of native tree species and every native tree species in the UK has the potential to host an introduced pest.
- Since *SoWT 2021*, two more serious pests of trees have been found in England. This includes *Phytophthora pluvialis* which was first found in Cornwall in 2021, and plane lace bug first found in London in 2024.
- International trade of live plants and plant products is a key driver of pest and pathogen introductions, especially alongside climate change, which is predicted to aid pest arrival and/or establishment in the future. Climate events which may cause increased stress in trees are also likely to increase host susceptibility to pests. These include hotter, drier weather causing drought, which may be particularly important for southern England.
- Treatment of pests has implications for management and planting objectives. For example, treating *Phytophthora ramorum* following the receipt of a Statutory Plant Health Notice in England is costly and greatly impacts conservation efforts such as PAWS restoration, as clear felling is often prescribed as the appropriate treatment. Over the past four years, England planted 0.06% of its land area with trees but also received Statutory Plant Health Notices for an equivalent of half that area at 0.03%.

- Continued treatment of pests which have become established is extremely costly, with the annual cost of managing just six pests across the UK estimated to be around £920 million, or £575 million in England.

Deer

At lower densities deer perform important ecological functions, however, unsustainable deer population levels prevent tree regeneration and therefore threaten the future of woodlands. High deer densities can also negatively affect woodland structure and ground flora species richness, and the abundance of birds, small mammals and invertebrates. Across the UK, deer populations are increasing, with many woodlands now hosting unsustainable population levels.

- Six deer species are present in the wild in England (two native species, one naturalised species and three invasive species). High populations of any of these species have the potential to be ecologically damaging, and several studies undertaken in England illustrate how this can be the case.
- Several studies in England illustrate the negative effects high levels of deer herbivory can have on woodland bird and small mammal species requiring dense understories, woodland ground flora and overall woodland structure.
- While no UK-wide datasets on deer population dynamics exist, on Woodland Trust sites high numbers of deer are being recorded, and generally high impact scores on woodland vegetation. Without significant investment and intervention across the sector, woodland structure and ecology is being, and will be, adversely impacted. There are also concerns for human and deer wellbeing such as increased risk of traffic collisions, dog attacks and transmission of Lyme disease.
- As deer are dynamic and move throughout the landscape, coordinated management at above the single woodland scale is now needed. A recent study undertaken in eastern England provides evidence that increasing culling area can reduce the impacts of multiple deer species, with benefits extending up to a 100km management radius.

Pollution

Pollution is an under estimated threat to woodland integrity and a driver of systemic change, acting on every level from soil chemistry to species dynamics. Woodlands in the UK have not evolved to cope with the levels of pollution they are currently exposed to. The fragmented nature and large edge area of UK woodlands heightens their susceptibility to environmental pollution, and pollution will also play a major role in moderating the response of UK woodlands to the effects of climate change.

- Despite gradual reductions in exceedance, critical loads for excess acid and nutrient N are still widely exceeded across UK woodland habitats, with hotspot regions in agricultural intensive regions such as the Welsh Borders and East Anglia. The area of coniferous or broadleaved woodland with excess acidity is decreasing across every country of the UK, but there has been little change in the extent of nutrient N deposition across common woodland types on a UK-wide or regional basis since 2003.
- In 2019-2021, the annual atmospheric concentration of NH3 exceeded a critical level for risks of impacts on sensitive lichens and bryophytes across most of England, and a critical level for impacts on sensitive vascular plants in agriculturally intensive regions of England.

- Furthermore, in 2019, exceedance of the critical level for broadleaf trees for O3 is estimated to have caused an average 7.4% loss in biomass increment for mixed broadleaf and 7.5% for beech woodland habitat in England. Herbicide drift also negatively affects woodland plant species and may be a long-term stressor for woodland in agriculturally intensive regions of England, while the effects of other pollutants such as particulate matter and material from fly tipping are less well understood.

Grey squirrels

- Grey squirrels can cause extensive damage to trees by stripping off the outer bark and ingesting the underlying phloem tissue, and can affect woodland creation and management goals and woodland condition and resilience. The NFI shows evidence of bark stripping damage in woodlands within England (16% of randomly selected one hectare woodland squares with damage). Due to limitations in the NFI's sampling approach, these percentages are likely to be an underestimate.
- South East and South West England experience the highest frequency and severity of damage. In 49% of NFI sections surveyed in the South East of England, the majority of trees that showed signs of bark stripping are likely to die due to the severity of damage. At a UK level, the estimated direct cost of grey squirrels is £40.6 million. The majority of these costs were attributed to England (£32 million). Grey squirrels pose a probable economic loss to the forestry industry of approximately £37 million a year in England and Wales according to the Royal Forestry Society.
- As a result of competition with grey squirrels for resource, which is exacerbated and mediated by disease dynamics, red squirrels are now reduced to fragmented populations within England.

Extreme weather

With the changing climate an increased frequency and intensity of extreme weather events including fires, storms, drought and floods is expected. These events are expected to impact trees and woods, and planning is needed to ensure woods are resilient.

- The UK Climate Projections 2018 show that the projected climate change trends over land for the 21st century show increased chance of warmer, wetter winters and hotter, drier summers, as well as increases in the frequency and intensity of extreme weather events. These events are expected to impact native trees and woods and planning is needed to make woods more resilient.
- No long-term datasets on effects of extreme weather exist to show if these events are currently increasing with climate change at a UK or England level. There is also no England specific data available which indicates how susceptible English woodlands may be to climate change and extreme weather. However, the latest UK climate projections show that the risk of wildfire could double with a 2°C global temperature increase and quadruple under a 4°C temperature increase.
- Between 2009-2021, fire and rescue services attended more than 360,000 wildfires in England, with an average of over 30,000 incidents per year. Over 79,000 hectares of land was burnt, and the majority of wildfires in woodland were in broadleaved woodland. Between 2009-10 and 2016-17 woodland and

JOEL GOODMAN/WTML

forest fires accounted for less than 5% of the land area burnt in England. The vast majority of wildfires in the UK occur in areas with low shrub vegetation (e.g. lowland and upland heath).

- Weather phenomena other than fire also pose a significant threat to woods and trees. Forest Research assessed the impact of storms in Great Britain in 2022 and showed almost 12,750 hectares of tree loss, with approximately 3,350 hectares of damage recorded in England. The majority of the damage was as a result of Storm Arwen, in November 2021. The overall damage was found to be relatively modest, equating to around 0.2% of England's tree cover. Over 90% of trees that are lost in storms will be replanted, meaning only a small per cent of forest is actually lost in the long term where it is not possible to restock. However, where storms damage ancient and veteran trees, replacement will not be possible.

- There is limited evidence available regarding the threat extreme weather poses to woods and trees in England, at present and in the future. As such, further research, explicitly aiming to determine the effect of extreme weather on English woodlands, is required.

Funding and skills gaps

The benefits woodlands provide in terms of biodiversity, recreation, ecosystem services, health and wellbeing, and increasing resilience to climate change are delivered much more effectively when woodlands are appropriately managed. Reviewing the current grant schemes shows that while support for creation of new woodlands is widely available, management and restoration of existing woodlands does not receive the same level of funding. A skills gap in the sector and lack of training and development opportunities is also evident.

- The funding landscape for trees and woods in England is currently complicated by the fact that many schemes are being revised or on hold, although schemes for woodland creation, management, restocking and agroforestry are currently or soon to be available.
- Recent research has shown there is a significant gap between the number of people needed to meet planting targets and the number of people joining the sector, with a 63 – 86% increase on 2017 workforce levels needed in England and Wales by 2030. Defra's England Trees Action Plan (ETAP) acknowledges the skills shortage but there has been little funding for training in recent years.
- The Forestry Skills Forums have long been highlighting these challenges, for example, in the Forestry Skills Study of 2017 in England and Wales. However, very little has improved in recent years. The Institute for Chartered Foresters is currently working with key forestry organisations in England to produce a 10-year plan for the development of the right skills to support current and anticipated needs.

Provenance

Trees and shrubs face considerable challenges in adapting to the impacts of climate change. Their long lifespans equate to slow rates of population change and consequently of evolutionary processes, so climate projections of generally wetter winters, drier summers and higher frequency of extreme events have raised the question of whether UK native species can adapt naturally to these new conditions.

- While adaptive or transformative woodland management practices, such as assisted gene flow and assisted migration may play a role in mitigating the impacts of climate change, the evidence shows that for native woodlands with conservation objectives management, practices that support or enhance natural processes like regeneration and enable trees to harness their evolutionary potential to adapt to climate change should be prioritised.

4. What's happening?

Creation

Across the UK, there are ambitious targets to increase the extent of native woods and trees to tackle the climate and nature crises. While woodland extent is increasing, the rate of expansion has slowed in recent years, with only a 1% increase in canopy cover over the last two decades.

In order to meet net zero and nature recovery targets, it is vital that the underlying reasons for this lack of progress are addressed and creation delivers wider benefits including to biodiversity. Existing quantity targets need to be buttressed with measures of quality including the percentage of native woodland cover, connectivity and expansion of existing woodland through buffering, and use of natural regeneration, colonisation and direct seeding. Evidence suggests that providing 'stepping stones' and improving the 'permeability' of habitat matrices are usually more important than providing physical corridors through which nature can disperse.

- In England, the Government has set a legal target to increase tree canopy cover from 14.5% to 16.5% between 2023 and 2050. While establishment rates remain significantly below that required to meet such a target, average rates of woodland creation have increased in every country over the past five years (2020-2024) compared to the previous reported (2016-2020). The UK achieved an average of 14,896ha per year, with this breaking down to an average of 2,866ha/year in England.
- Land-use change has often been treated as either a biophysical (land suitability) or economic issue, being seen as a predictable and rational process, rather than the social (or negotiation) process between groups of people with different values that it often is. Incorporating social and cultural values into woodland creation plans should be considered from the start of any project.
- Research has identified a comprehensive land use strategy as the most important policy to prioritise in terms of delivering land-use transitions. Although operating in Scotland, this is still under development in England.

JUDITH PARRY/WTML

Agroforestry

Because over 70% of the UK land surface is under agriculture, increasing wooded habitats on farmland – integrated into viable farm businesses – offers a way to significantly increase tree cover. Agroforestry – farming with trees – is an essential tool to help deliver UK biodiversity and net zero objectives on a landscape scale, whilst improving economic resilience and food security into the future.

Agroforestry is demonstrated to enhance a range of provisioning, supporting, regulatory and cultural ecosystem services. Agroforestry can offer a 'win-win' in many scenarios, enhancing biodiversity and allowing farming to mitigate and adapt to the effects of climate change, whilst maintaining or enhancing productivity and income. But major disincentives remain to the wide uptake of agroforestry by farmers, particularly a lack of financial support and technical knowledge. Greater clarity and integration of evidence in Government policy is also needed.

In addition to potential yield benefits, agroforestry systems can be designed so that their primary objective is to deliver a range of services both for the farm that will enhance business resilience and productivity alongside habitat creation, carbon sequestration and mitigation of air and water pollution:

TIM SCRIVENER/AWTML

Management

The ecological, economic and social benefits of bringing woodlands back into appropriate management cannot be ignored. Woodlands in good condition as a result of planned and active management are likely to make the greatest contribution to ecosystem service provision and be more resilient to external threats.

The number and extent of UK woodlands under management is hard to ascertain due to a lack of data. Figures for certified woodland areas are often used as an indicator of sustainable forest management, though this doesn't reveal anything about the type of management being undertaken.

- In 2024, the total area of certified woodland in the UK was 1.44 million hectares (44% of the total UK woodland area). This is 23% in England. However, it is important to note that these figures relate to all woodland, and the majority of certified woodlands may be productive conifer forests. Woodland that is not certified may also be managed sustainably.
- Bringing woodland into sustainable management has benefits for biodiversity, economic productivity and carbon emissions. For example, the UK is the second largest importer of timber globally and the UK Confederation of Forest Industries estimated that England and Scotland imported 32,000 tons of firewood in the first nine months of 2017. However, just 8,000ha of additional managed broadleaf woodland could provide the 32,000 tonnes of homegrown firewood, reducing the need for imports.
- The Royal Forestry Society has recently reported that most unmanaged woodland is broadleaved and in private ownership, and estimated that the area of unmanaged woodland that could feasibly be brought back into proactive management (physically and economically) is up to 200,000ha in England. However, government grants have become increasingly unattractive, restrictive and unfavourable to support sustainable woodland management.
- Often landowners may wish to carry out management but do not know what is required or how to achieve it. A study in England found that 37% of woodland owners could be defined as "aspiring managers". These are managers who are newer to woodland ownership but require support and guidance on getting started. Access to advice from professionals and thorough guidance on woodland management is essential. Grants which include some support for advice provision do exist, but more support in this area is likely to be beneficial.
- The multitude of benefits that can be gained from managing woodlands appropriately requires support and incentives that allow landowners to realise and achieve these benefits.

Ancient woodland restoration

Ancient woodlands are some of England's richest and most diverse terrestrial habitats and support a quarter of the UK's priority species for conservation. These woodlands have a long, uninterrupted presence (continuity) and so are often associated with high biodiversity. They are irreplaceable and cannot be recreated once lost. They are also significant carbon stores and hold immense cultural and historical value.

Ancient woodland is rare, making up around 2.8% of the total land cover of England. This is because ancient woodlands have faced a barrage of historic and

current threats, such as historic planting of monocultures over the sites (plantations on ancient woodland sites or PAWS), development, pests and diseases, invasive species, surrounding intensive land-use and climate change. In addition to fragmenting them and reducing their extent, these threats have also affected their condition, subsequent resilience to these threats, and ability to provide services.

- The need to restore is more urgent than ever as this is a unique point in time. Most PAWS are now at, or beyond, the age for commercial felling and their future decided. This future could be clear-felling and replacing with another non-native conifer plantation or beginning the process of restoration to help improve their condition and ecological functioning. Restoring PAWS with site native trees and shrubs will help to restore the ecological functioning of these habitats and allow biodiversity to increase. In England there are currently 149,164ha of PAWS, comprising 1.14% of total land cover.

- The England Keepers of Time policy has an objective to 'restore or gradually restore the majority of plantations on ancient woodland sites to native woodland by 2030'. It is positive to have specific mention of PAWS restoration in policy, but it is important to note that while restoration may begin by 2030, these woods will not be successfully restored for decades.
- There is public funding available for PAWS restoration in England, however, the amount of PAWS restoration that is being funded via government grants has declined over time with only one hectare reported in 2022-23 and six hectares in 2023-24.
- It is not just plantations that threaten ancient woodlands. Introduced non-native species like rhododendron (*Rhododendron ponticum*) have become extremely invasive. Rhododendron presents a particularly formidable challenge, but novel methods of mapping the species are currently in development. A project funded by the Forestry Commission's Forest Innovation Fund makes use of cutting-edge advances in remote sensing techniques and explores how these can be used to provide a comprehensive, all-encompassing snapshot of rhododendron in key landscape areas which could be repeated periodically. These maps, in collaboration with others, can be used to strategically plan long-term rhododendron control to make the best use of resources and time.

Natural flood management

The latest climate projections from the Met Office predict that the UK will experience warmer, wetter winters and hotter, drier summers over the coming century, alongside increases in the frequency and intensity of extreme weather events. This is predicted to increase flood risk across the UK as has been evident in the frequency of flood events over the previous decade.

Woodland creation (catchments, cross-slope, floodplain, and riparian) can be an effective natural flood management intervention which can help to provide significant flood regulation services to downstream communities alongside carbon sequestration, nature recovery and other ecosystem service objectives.

- There has been significant investment in delivering and monitoring NFM in England. Between 2017 and 2021, DEFRA funded 60 projects across a £15 million NFM pilot programme. In 2023, Defra and the Environment Agency provided a further £25 million to 40 additional projects as part of a wider target of delivering 260 NFM projects between 2021-2027. It is estimated that the pilot programme reduced the risk of flooding to ~15,000 homes. It's estimated that spending on flood and coastal erosion risk management in England increased from £777 million in 2018 to £1.063 billion in 2021.
- The modelled flood regulation benefits from the Woodland Trust's creation design at Snaigeholme reduced peak flow for a one in 10-year storm event by 5.1% and for a one in 50-year storm event by 5.3%. This was estimated to provide a flood regulation service worth £2 million or £12,300 per hectare of woodland, over a 100-year period. These results are likely underestimates of the project's total impact on reducing flood risk as this initial work only modelled the impact of woodland creation areas. Peatland restoration, river restoration and reprofiling, leaky dams and returning woody debris to water courses have the potential to considerably increase the flood regulation impact of the Woodland Trust's work at Snaigeholme.

REN LESLIE/WTML

5. Policy asks

Enhance and protect existing woods and trees

1. No further loss of semi-natural woodland habitats and species.

Protection, long-term management and monitoring is essential for nature recovery and a requirement for land to count towards the Government commitment to protect and manage 30% of land and sea for nature by 2030.

The Government should:

- Ensure no further loss of ancient woodlands by legally protecting these woodlands (i.e. designate as SSSIs).
- Manage more of our ancient woodland through better, more long-term incentives (e.g. woodland improvement grants, local nature recovery strategies, biodiversity net gain) and nature restoration targets.
- Where there are proposals or decisions that permit developments that damage nature, ensure better implementation of the protections afforded to ancient woodland in the National Planning Policy Framework and further strengthen protection for irreplaceable habitats in National Policy Statements.
- Agree a working definition and legally protect all remaining fragments of temperate rainforest (e.g. through other effective area-based conservation measures or SSSIs).
- Complete and then publish a map of 'long-established woodland' (woodlands that have been in situ since at least 1893) and ensure it has appropriate protection in the planning system).
- Introduce new legal protections for our most ancient and important trees and improve protections for trees through reform of the Tree Preservation Order (TPO) system.
- Introduce new planning policy and strengthen existing policies that actively discourage the loss of any woodlands, hedgerows, or native trees to developments.

2. Manage woods for nature.

Improving the condition of existing woodland is essential to deliver the species and habitats targets of the Environment Improvement Plan and the Government commitment to protect and manage 30% of land and sea for nature by 2030.

Defra should:

- Introduce a ringfenced grant for woodland management and improvement.
- Use the ELM scheme to support and encourage land managers to bring woodlands into good ecological condition.
- Launch a woodland nature-recovery funding package over five years comprising a Woodland Nature Resilience Fund for landscape-scale projects which will tackle the key drivers of biodiversity loss for wooded habitats and associated species.

3. A national rescue plan for ancient woodland.

Approximately 40% of the remaining ancient woodland in England is damaged by timber plantations (sites known as plantation on ancient woodland sites). Preventing the loss of and restoring these irreplaceable ancient woodlands is an essential step for nature recovery.

The Government should:

- **Launch a national rescue plan for ancient woodlands:** A dedicated recovery plan to deliver existing Government targets, with new resources, partnerships and measurable outcomes is critical to save privately owned ancient woodland damaged by historic timber plantations.
- **Fairly resource those taking action:** Make it easier for private landowners who own and manage our remaining vanishing ancient woodland to access grant support that pays the true cost of recovering them and delivering Government targets.
- **Modernise felling licences:** Defra should introduce a modernised felling licencing system for forestry operations which supports more sensitive felling, replanting and protection of the irreplaceable remains of ancient woodland.

4. Protect woods from nitrogen pollution.

Nitrogen pollution negatively affects woodland condition, with many of our most sensitive habitats, including ancient woodland, having evolved with lower nutrient levels than those experienced today. Nitrogen deposition supports the growth of nitrogen tolerant species, that out-compete more specialist plants and bryophytes, leading to a change in the overall ecology of the woodland.

Intensive livestock units are a significant source of ammonia pollution affecting ancient woodland. The National Planning Policy Framework requires that developments do not lead to any deterioration of irreplaceable habitats, such as ancient woodland, but many planning policies still allow developments with process contributions that would lead to negative impacts. With the majority of woodlands in England experiencing high levels of nitrogen deposition, the Government should commit to take action to reduce nitrogen pollution by:

- Developing a nitrogen strategy that will deliver the Global Biodiversity Framework target of reducing excess nutrients lost to the environment by 50% by 2050.
- Provide support to land managers to reduce agricultural nitrogen emissions, including advice and training on the impact of ammonia on sensitive habitats and how to mitigate this.
- Extend environmental permitting regulations to include dairy and reduce the thresholds for when environmental permits are required for pig and poultry units.

Local planning authorities should:

- Ensure planning policies consider the cumulative impact of intensive livestock units on ammonia levels when considering planning applications.
- Review process contribution thresholds applied to nitrogen and ammonia emissions to ensure that new developments do not have a process contribution of more than 1% of the critical level of ammonia.

JILL JENNINGS/WTML

Expand and connect woodland and tree cover

5. Increase canopy cover for climate and nature.

Despite political commitments and clear evidence on desirability, targets to increase tree canopy cover are routinely missed. The overall quantity and quality of expansion must be scaled up so they deliver for climate and nature, storing carbon, supporting adaptation and facilitating nature recovery in line with the Environment Improvement Plan species and habitat targets.

The government should:

- Encourage more private landowners to plant trees with quality advice and grant support, and give certainty to the sector by confirming programmes such as the England Woodland Creation Offer will be maintained over the medium term.
- Take a strategic approach to increasing tree cover, supporting partnerships with the Woodland Trust, Community Forests and others on landscape scale projects such as the Northern Forest.
- Monitor and report both the quantity and quality of canopy-cover expansion including short, medium and long-term targets for increases in priority species.

6. The government should commit to a major upscaling of agroforestry, with advice and support for farmers embedded into long-term agri-environment schemes.

Agroforestry can help deliver on our climate and nature objectives and support resilient food production. Both Defra's development of a Land Use Framework (LUF) and the Climate Change Committee's (CCC) Seventh Carbon Budget have included agroforestry prominently as a tool for meeting national land-use policy objectives at an England and UK level. CCC and LUF are also clear that the direct benefit to farmers and local communities from wide scale uptake of agroforestry is climate adaption.

Defra should ensure delivery of wide-scale agroforestry by:

- Setting targets in the Environmental Improvement Plan to convert 10% of arable land to silvoarable and 30% of pasture to silvopasture.
- Providing access to essential good quality agroforestry advice.

- Committing to long-term agri-environment support for agroforestry, to include:
  - continued support for developing an agroforestry plan
  - grant support for establishing agroforestry schemes to include long-term maintenance agreements of 10 years and capital grant support for trees and protection.

7. A new strategic approach for deer management.

Deer damage is a fundamental barrier to delivery. Sustainable deer management needs to become integral to land management to meet the Environment Act and Environment Improvement Plan targets for woodland species and habitats.

- Defra and the Forestry Commission should ensure that the England Deer Strategy leads the way in deer management, clearly defining how both incentives and penalties will drive sustainable deer management across landscapes.
- The strategy should also identify priority areas where deer management is fundamental for maintaining tree cover and prioritise landscape scale deer management incentives in these areas.

8. Pave a way for self-sufficiency in tree supply.

Imported tree pests and pathogens result in direct losses of trees that could make government tree cover targets impossible to achieve. Boosting domestic production of trees is fundamental for biosecurity, but also offers benefits as a green growth sector, providing rural jobs and benefiting rural economies.

- The government should develop an action plan for supporting the British tree production sector, which needs to be cross-nation, led by a team involving Defra, the Welsh Government and Scottish Government.
- Defra and the Forestry Commission need to help provide market confidence to tree nurseries through long-term commitment to grant schemes, consulting with the tree supply sector on any changes, and by contract growing trees.
- To support domestic production, the inclusion of UKISG as an option within the biosecure procurement requirement is essential, providing tree buyers with a clear way to support UK tree growers and avoid importation of further pests and pathogens.

9. Create nature-rich, accessible woods and trees where they are currently lacking.

Urban tree canopy cover in the UK is well below the European average and significant variation exists at every administrative level. The mental and physical health benefits from woods and trees are inequitable.

Local councils should:

- Adopt a tree equity approach to prioritise urban tree planting, helping to address low urban tree cover where it's needed most by ensuring that the benefits of trees reach the areas and communities with the greatest need.
- Declare nature emergency declarations which commit to producing an action plan, embedding it in plans and policy and protecting and managing 30% of land for nature by 2030.


MICHAEL HEFFERNAN/WTML

The government should:

- Develop a Wellness Woods for People Fund to purchase land to support the creation of a new generation of accessible, publicly owned, wildlife-rich woodland in locations where this is currently lacking.

Improve the evidence

10. Improve methodologies used to assess woodland carbon.

The methodologies used to assess the amount of carbon stored in trees and woods need updating to reflect the latest research. For example, recent LiDAR assessments of native trees suggest traditional methodologies may be underestimating the carbon stock of the above ground biomass of semi-natural native broadleaf woodland by nearly 80%.

The government should ensure the Woodland Carbon Code methodologies are updated to more accurately reflect the above and below ground carbon stocks found in native woodland.

11. Monitor loss of woodland tree cover to get accurate figures for woodland creation.

It makes good sense for the Environment Act target for trees to measure canopy cover. However, the only regularly published national data on changes to tree cover is hectares on new woodland. This misses the vital information on informal planting, natural colonisation and tree loss to development, disease and other threats.

The government must publish and maintain a publicly available mapped layer of trees and woods including:

- Progress towards 16.5% canopy cover.
- Existing woodland including ancient woodland, ancient and veteran trees, and long-established woodland.
- Trees outside woods including agroforestry, wood pasture and urban tree cover.
- Detail of where and when trees have been lost.

6. What is the Woodland Trust doing?

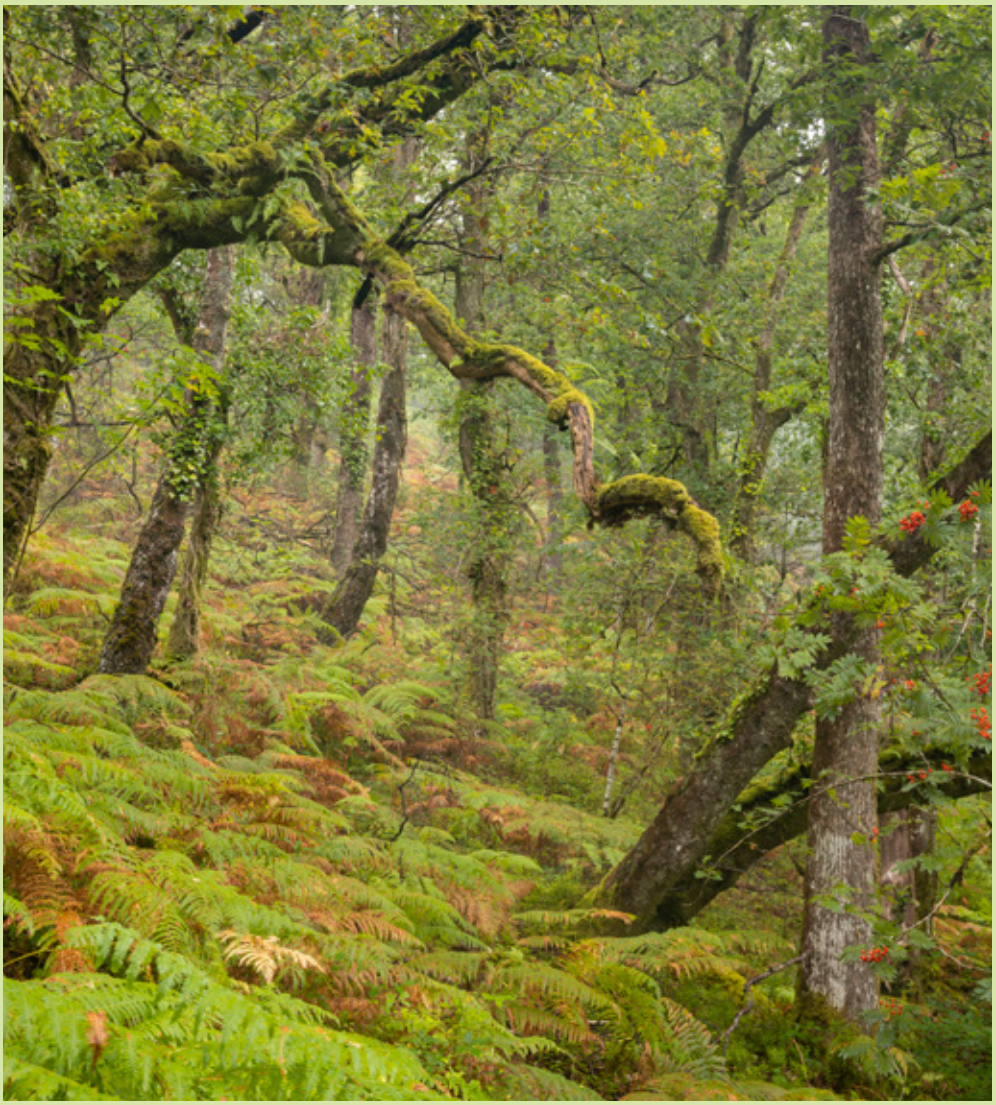
Case study: High Weald Deer Management Project

In practice, several examples now exist in which landscape-scale cooperation is being utilised. The recently completed High Weald Deer Management Project for example, led by the High Weald National Landscape Partnership with funding and support from the Woodland Trust and DEFRA, was set up with the aim to bring landowners and deer stalkers together to form local deer management groups in two target areas covering 230km^2 (Williams, 2024). Drone surveys funded by DEFRA's Farming in Protected Landscapes grant have allowed for estimations of the local deer population, which have revealed an average deer density of 20 to 25 deer per km^2, and up to 50 deer per km^2 in some areas. While payment was claimed for more fallow does in 2024 than in 2023, (20 landowners claimed for 324 does in 2023 compared to 30 landowners claiming for 617 does in 2024), these numbers appear unable to currently meet the 30% (8,766 deer) reduction in fallow deer numbers required to maintain a static population, or 40% (12,000) required to bring the population down to the desired density of <10 deer per km^2, highlighting the scale of the issue. The significant rise in landowners claiming and total number of deer culled is encouraging, however a reduction in deer numbers to the desired density will only be achievable with sustained and increased culling over at least 10 years. Additional partnerships exist which aim to highlight the importance of managing deer at a landscape level, such as the Deer Initiative, which aims to achieve and maintain a sustainable and healthy population of wild deer in England and Wales. Ultimately, the success of this endeavour will rely on the upscaling and prioritising of landscape-scale deer management (The Deer Initiative, 2024a).

NICK REED- BEALES

Case study: Building resilience project in the South West's temperate rainforest

Building Resilience in South West Woodlands was a Plantlife-led, National Lottery Heritage Fund project to raise awareness about the region's temperate rainforest and improve its management. The Woodland Trust was a partner on the project through East Dartmoor National Nature Reserve (NNR), which it manages in partnership with Natural England. East Dartmoor NNR was a priority site, demonstrating how woodland condition can be assessed, and management recommendations such as removing lichen-shading species like holly along ancient boundaries put into practice. The Woodland Trust is now leading the development of a South West Rainforest Alliance to bring together landowners and organisations to protect, restore and create more temperate rainforest.



ADAM BURTON/WTML

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