



Independent Panel on Forestry

FINAL REPORT

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Chairman's foreword

Chairing the Independent Panel on Forestry has taken me on a personal journey towards a realisation that, as a society, we have lost sight of the value of trees and woodlands.

The Panel's work over the last year has shown that our woodlands, managed sustainably, can offer solutions to some of the most pressing challenges facing society today.

Woodlands keep us healthy. They are places where people can get out in the fresh air and feel connected with nature, with history and with each other, away from the pressures of everyday life. They form a familiar yet special part of the English landscape. They create a stimulating outdoor classroom and playroom and allow children to connect with nature.

Woodlands also provide vital space for plants and wildlife, and help keep our air and water clean. By locking up carbon, trees can help slow the rate at which our climate is warming. They reduce the effects of a changing climate, by slowing and preventing floods, by providing shade in towns and in the countryside, and by providing corridors for wildlife.

Woodlands sustain livelihoods, support local businesses and contribute to the greening of our national economy.

And of course trees provide us with wood; a familiar material that it is easy to take for granted. It is a valuable, versatile and renewable raw material, which locks up carbon for the lifetime of the products it is turned into.

Put simply, the planting of trees and woods, their conservation and management are essential elements of our common life.

A treeless landscape affects the air we breathe, the water we drink, the food we eat, and the diversity of our wildlife, as carbon dioxide thickens the blanket of gases around the Earth.

We lecture the world on deforestation and its impact on climate change and biodiversity, but we need to lead by example if our words are to be taken seriously by other nations.

We should be unequivocal about how woodlands form some of the greatest assets of our natural capital.

We should be leading the world in showing how woodlands can help us slow the rate at which our climate is changing, and help us adapt to the changes that are already taking place.

We should be making the case for investment in our woodlands to tackle our public health crisis, and our ever-increasing disconnection from the natural world.

And we should be realising the untapped potential of existing and new woodlands to lessen our dependence on fossil fuels and other imported commodities.

And at the heart of this, we should be focused on creating the right conditions for thriving businesses centred on woodlands and wood products.

To say that our woodlands are vital is not an exaggeration.

The Panel welcomes this opportunity for the public to think again about the value of trees.

There is a huge opportunity for England's woodlands to drive a sustainable economic revival, to improve the health and well-being of the nation, and to provide better and more connected places for nature.

We need a new culture of thinking and action around wood and woodlands, and a new way of valuing and managing the natural and social capital of our woodland resource, alongside the timber they contain.

As a Panel we have a vision of a more wooded landscape and more woods closer to where people live. There is a place for urban trees, wooded parklands and hedgerows as much as for conifer plantations and small scattered woodlands within a broader landscape.

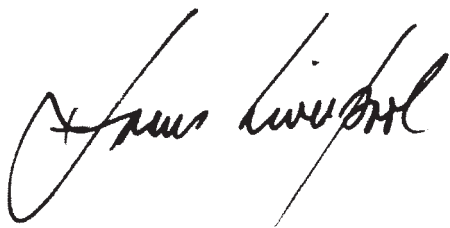
And getting a far greater number of woods, both new and existing ones, managed sustainably is essential.

Government, woodland owners, the forestry sector, non-Government organisations, communities and the public all have a role to play.

We want the publication of this report to enable the public debate to continue about the future of England's woods and forests, and the social, environmental and economic opportunities that they can deliver.

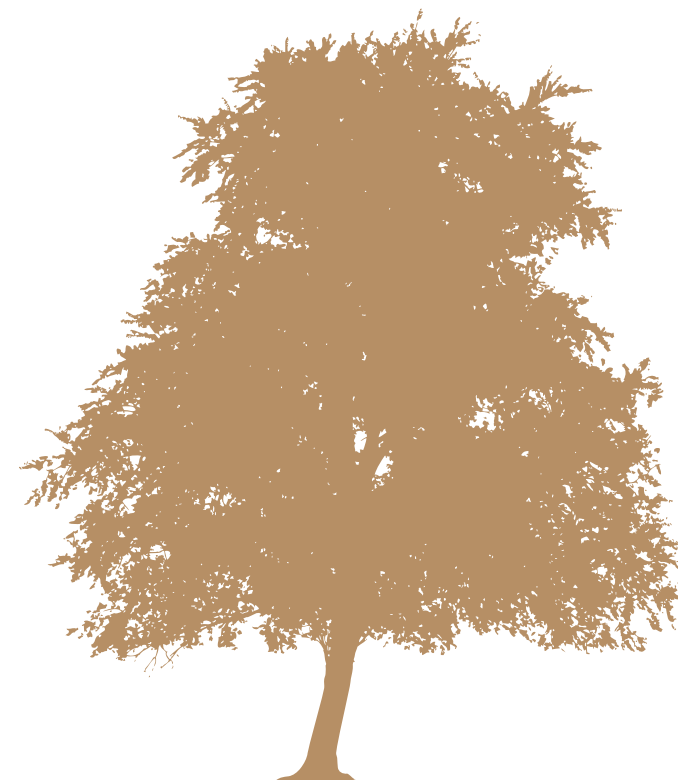
Our forests and woods are nature's playground for the adventurous, museum for the curious, hospital for the stressed, cathedral for the spiritual, and a livelihood for the entrepreneur. They are a microcosm of the cycle of life in which each and every part is dependent on the other; forests and woods are the benefactor of all, purifying the air that we breathe and distilling the water of life.

In short, trees are for life.

A handwritten signature in black ink, reading "James Jones". The signature is fluid and cursive, with a large initial 'J' and a long, sweeping underline.

The Right Reverend Bishop James Jones, the Bishop of Liverpool.

July 2012



A. Executive summary

Valuing England's trees, woods and forests

The Government proposals in 2011 to change the way the public forest estate might be managed led to a public outcry which underlined the importance of woodlands in the day-to-day lives of very many people. More widely it showed that our trees, woods and forests are hugely undervalued. The value of the benefits they provide to people, nature and the economy has not been recognised in public policy, and successive Governments have simply not seen them as a priority for public investment.

But our woodlands are an essential part of our natural capital: a unique natural asset that delivers many public benefits. Like any asset, woodlands need investment to sustain these benefits for the long term. But much of their value, to society and nature in particular, does not lend itself to simple expression in pounds and pence. The recent National Ecosystem Assessment set out to tackle this. It trod new ground in showing where we have systematically undervalued, and therefore neglected the ways in which we depend on our natural environment and how, as a result, we are eroding rather than sustaining the natural capital we all rely on.

We can see the effects of this in our woodlands today. Only half of our woodland and forests are in sustainable management, some of our most valuable wildlife is in decline, less woodland is being created and the threats from climate change, pests and diseases are increasing. As a society, we need to respond to this with urgency.

The National Ecosystem Assessment reinforced the message that we need to account for all the benefits of our woodlands, including the timber income. Woodlands provide space and corridors for wildlife and help keep our air and water clean. They provide shade, stabilise our soils and can slow and prevent floods. They lock up carbon and can help us adapt to living in a changing climate. They support thousands of businesses, jobs and livelihoods. And spending time in them helps keep us

physically and mentally healthy. These benefits, of which there are many more, are collectively known as ecosystem services.

We urgently need a valuation of our woodlands that takes full account of all these benefits. Then the case for increased public investment in our woods and forests, and for developing markets for these wider services, will be clear and compelling. The National Ecosystem Assessment provides the tools needed to start this work, which we see as a priority for Government.

In our report we urge society as a whole to value woodlands for the full range of benefits they bring. We call on Government to pioneer a new approach to valuing and rewarding the management, improvement and expansion of the woodland ecosystems for all the benefits they provide to people, nature and the green economy.

A woodland culture for the 21st century

As a Panel, we see a vibrant future for England's forests and woods. We see them as a contributor to a sustainable economic revival. Increasing our use of wood as a low carbon fuel and as a renewable raw material will help us to move to a more sustainable green economy. Our woodlands are also places for appropriate tourism and recreation, that enhances their natural capital. We see them playing a key role in the restoration of our ecosystems and the expansion of important natural habitats to allow for the recovery of England's depleted wildlife resource. And we see them improving the well-being and health of the nation by giving more people access to nature, and more opportunities for outdoor activity and recreation.

We want to see a new woodland culture in which woodlands and wood as a material and fuel are highly valued and sought after. To achieve this requires people to think and behave differently, such that woodlands and wood products are used and appreciated in everyday life. It means

getting more woods into sustainable management. This will require investment to motivate woodland owners to do things differently, and also to develop supply chains for woodfuel and timber in more parts of the country. It means planting more trees and woods, in both urban and rural landscapes, and motivating public and private landowners to make this happen. The policy challenge is to get the right incentives, infrastructure and support in place; and for both new and existing woodlands to be managed in the right way, for the long term.

Trees and woods: good for people

As a Panel, we want many more opportunities for more people to enjoy the health and well-being benefits of woodlands. This means incentivising the opening up of existing woodlands, and creating new ones accessible to the public. Where there is a need to be met, investment will be required to make this attractive to woodland owners, for example to support open access or pathways. The public forest estate, with its many and varied recreation and leisure opportunities, is an exemplar of woodland access in England, and should be sustained into the future.

In our report, we call on Government and other woodland owners to give as many people as possible ready access to trees and woodlands for health and well-being benefits – this means planting more trees and woodlands closer to people and incentivising more access to existing woodlands.

Trees and woods: good for nature

England's wildlife network and ecosystems urgently need to be protected and restored. Some of the nation's most iconic wildlife depends on woods, trees and forests but evidence demonstrates real decline in this wildlife, and in the extent of ancient woodland. We need to provide a more resilient and robust ecological network to safeguard their future, as described in the "Making Space for Nature" report, published by the Lawton Review. This means improving the condition of existing woodlands through sustainable management, expanding woodland cover, and restoring our most precious ancient woodlands and heathlands from plantation forestry. Expanding tree cover with appropriate species better

able to cope with a changing climate will be vital if we are to sustain the ecosystem services required by future generations. Action taken now to increase the resilience of our woodland resource will help reduce the future costs of dealing with the effects of climate change.

In our report we call on Government to ensure that land-use creates a coherent and resilient ecological network at a landscape scale, by integrating policy and delivery mechanisms for woods, trees and forests in line with the principles in the "Making Space for Nature" report, published by the Lawton Review.

As part of this, we want to see woodland cover expanded from 10% to 15% of England's land area by 2060, and the area of woodland managed to the UK Forestry Standard increased from around 50% to 80% of the total, over about the next ten years.

Trees and woods: good for the green economy

We want woods and forests to help us move towards a green economy in which economic growth and the health of our natural resources sustain each other, and markets, business and Government better reflect the value of nature. With only 20% of our timber needs met by UK production there is a big opportunity for the forestry sector to deliver more of what the domestic market needs from our own woodlands – and to drive a revival of a woodland culture in England. Timber from under-managed woodlands could make an important contribution to meeting this need. Rising timber prices could lead to more woodlands being actively managed. The newly productive woodlands will generate new jobs and businesses, and a better skilled workforce, as well as achieving a wide range of public benefits.

In our report, we urge Government, woodland owners and businesses to seize the opportunity provided by woodlands to grow our green economy, by strengthening the supply chain, and promoting the use of wood more widely across our society and economy. These and other actions should be set out in a Wood Industry Action Plan.

Investment in small and medium businesses including saw mills, furniture and creative industries, through Local Enterprise Partnerships, among others, will be instrumental in creating jobs and new skills in the rural economy. One estimate is that up to 7,000 direct jobs could be created with targeted support for the sector; many of them in our most deprived rural areas. Targeted intervention by Government is needed to stimulate growth in this part of the economy, to help promote wood as a renewable, low carbon product of choice for our buildings, homes and everyday lives.

Making the vision a reality – the role of our national forestry organisations

To deliver the ambitions in our report, we need sustainable and resilient public forest organisations that will exemplify the natural capital approach to managing our natural environment. They will have a mandate to catalyse the management and expansion of England's woodlands for the benefit of the nation.

Driving a change in woodland culture in England

With 82% of our woods lying outside the public forest estate, and with the majority of these delivering less than they could for people, nature, and the economy, we see an urgent need for the existing roles offered by Forest Services, which currently sits within the Forestry Commission, to be significantly developed.

An organisation evolved from Forest Services will be a champion and advocate for trees, woods and forests, driving a change in woodland culture inside and outside the public forest estate. It will provide information and expert advice to England's woodland owners, regulate them appropriately, and motivate them to do things differently on their land. It will deliver Government policy and work in partnership with other organisations and forestry professionals to deliver a flexible and efficient service. It will inspire people and organisations to use wood as a product. Investment in this organisation will help revitalise a green woodland economy and ensure that woodland creation and management delivers the widest set of benefits to society.

In our report, we recommend Forest Services should evolve to become a public body with duties, powers and functions to champion, protect and increase benefits from trees, woodlands and forests that are good for people, good for nature and good for the green economy.

Sustaining and enhancing our national forests

The public forest estate offers a different set of opportunities from other woodlands. While it comprises only 18% of the woodland area in England, it represents well over one third of the woodland area in active management and offers the single best opportunity for habitat recovery and restoration on a landscape scale. Alongside this, it provides around 60% of the softwood timber sold in England, and over 40% of the woodland access available across the entire country. It is rich in history and cultural significance.

We believe there is a continuing role for the public forest estate in England, and that the public forest estate should be managed by a new public forest management organisation evolved from Forest Enterprise England, which currently sits within the Forestry Commission. The organisation will have a new statutory purpose to sustain and build the social, natural and economic value of the estate for the long term, for the benefit of the nation.

Within the statutory purpose it will have new freedoms to be entrepreneurial, raise capital and retain revenues to re-invest in the estate, and to take the long-term decisions needed to manage the estate sustainably. The new organisation will work independently of Government. It should be financially secure through each decade, with any Government funding clearly linked to the delivery of public benefits.

In our report, we propose that the public forest estate should remain in public ownership, and be defined in statute as land held in trust for the nation. A Charter should be created for the English public forest estate, to be renewed every ten years. The Charter should specify the public benefit mission and statutory duties, and should be delivered through a group of Guardians, or Trustees, who will be accountable to Parliament. The Guardians will oversee the new public forest management organisation evolved from Forest Enterprise England.

The net annual cost of running the public forest estate to the public purse is currently only around £20 million, equivalent to 90 pence per household each year. The annual returns on this investment have been estimated at £400 million in terms of benefits to people, nature and the economy. Yet this still does not reflect some of the benefits it provides, such as peoples' ability to connect with nature or the preservation of historic customs and traditions. We fully believe that if these benefits were accounted for on a natural capital balance sheet then there would be no question over continued investment by Government. In the meantime sufficient funding must be made available to avoid the sale of woods and forests simply to enable the annual balancing of the books, which has occurred in recent years. This reduces the value of the public asset, and is unsustainable.

A cross-border capability for cross-border issues

The pressures on our trees, woods and forests are increasing. The incidence of pests and diseases is increasing year-on-year, and as our climate changes this threat will continue to grow. We believe it is important that the Government continues to work with the Scottish and Welsh Governments, and as appropriate with the Northern Ireland Executive, on cross-border issues including research, plant health, forestry standards and statistics, and to support the role of the UK as a leader in forestry on the international stage.

In our report, we urge Government to ensure that the new organisational landscape makes specific provision for international and cross-border arrangements, working closely with the devolved Parliaments on sustainable multi-benefit forestry implementation, research and in the international arena.

Making sure we're on track

We urge Government, following its response to this report, to report annually to Parliament on its progress in meeting the recommendations offered by this Panel.



B. Introduction

The Independent Panel on Forestry was created in March 2011 following a fierce public debate over the future of the public forest estate. In our Progress Report, published in December 2011, we were clear that we see a continuing role for a public forest estate, on a national scale, in England.

But this, our final report to Government, covers a great deal more than the public forest estate. Our Panel was asked by the Government to provide advice on the future direction of forestry and woodland policy in England¹, including the 82% of woodlands that lie outside the public forest estate, as well as the 18% that lie within it. We were asked to consider how to increase the number of trees and woodlands across England, and how to increase the level of public benefits that both new and existing woodlands deliver to society on a number of fronts. These include public access and recreation; protecting our existing wildlife and woodland habitats, as well as restoring what we have lost; helping us adapt to a changing climate and slowing the rate of climate change; and actions to support a sustainable and diverse timber industry. We were also asked to consider the role that civil society, and our national public forestry organisations, should play in making this happen.

This report sets out a new approach to the development, management, and governance of England's forests and woodlands, in both public and private ownership. Over the last year, we have looked at them with a fresh perspective that has been enriched by the views of many contributors. We were delighted that over 42,000 people responded to our call for views, at the start of our work as a Panel in 2011. More than 60 national organisations were represented at the stakeholder event we held in London earlier this year. During the ten visits we made around the country, we met many individuals, charity and community groups, all sharing a passion for their local woodlands. And we are grateful for the input of many other individuals and organisations, whether through workshops, meetings or commissioned studies. In forming our recommendations to Government, we have drawn on their knowledge and expertise².

Our work over the last year has reinforced our view that investment in England's trees, woods and forests is an investment in our future that will repay its value many times over. There is widespread agreement across communities, organisations and political parties that woodlands are important places. So we shouldn't be satisfied with the status quo, and can't afford to be complacent.

This report describes a vibrant future for forestry and woodlands in England; and maps out the steps to make it happen.

England's trees, woods and forests: some facts and figures

Only 10% of England's land area, around 1.3 million hectares, is covered by woodlands or forests. Over 89 million³ non-woodland trees contribute further to the 'woodiness' of our urban and rural landscapes. Average woodland cover in the European Union is 37%⁴. The density and type of woodland vary considerably across the country (Figure 2). The high density of woodland in south-east England includes large numbers of small broadleaved woods, whereas the large forests in the North of England and in Norfolk are predominantly coniferous. Typically very few places are without at least a scatter of small woods or trees.

In England, 66% of the woodland area is composed of broadleaved trees such as oak, ash, birch, and beech, while 34% is made up of conifers such as pines, spruce, larches and firs⁵. Much of this woodland has been planted or naturally established on open ground in the last century, but just under a third⁶, covering 2.6% of the country, is ancient woodland; this has been identified as the highest priority for nature conservation.

Figure 1: Percentage ownership of forests by different types of owner⁷

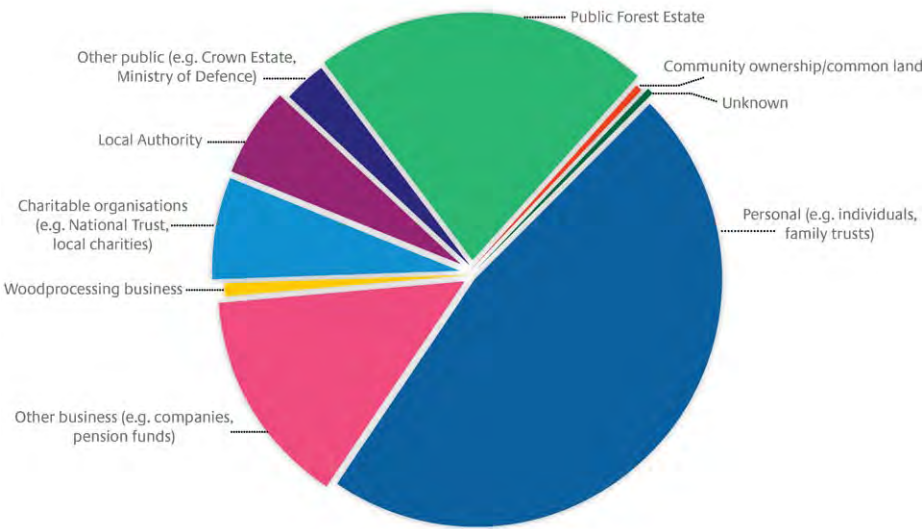
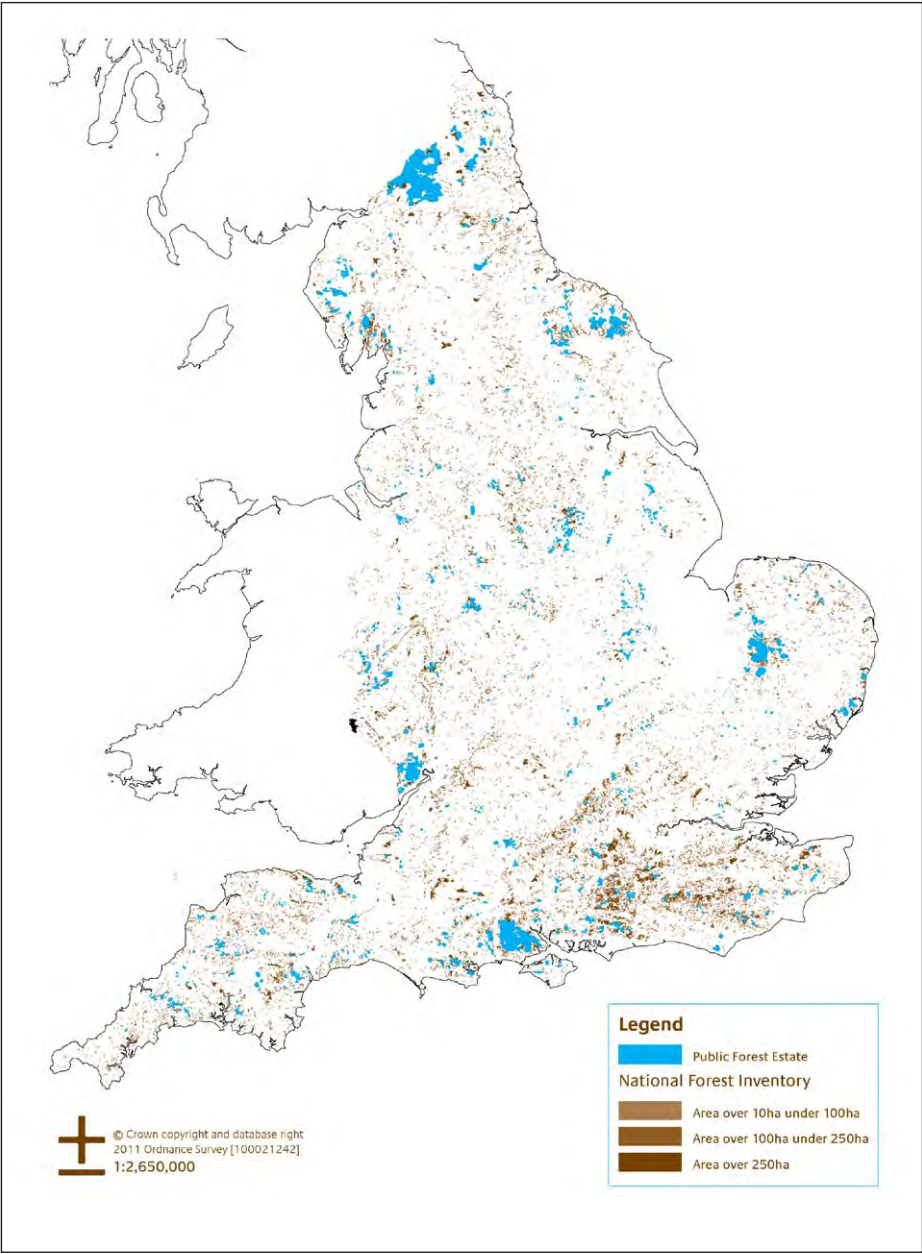


Figure 2: Distribution of woodland in England, showing also the Public Forest Estate



A woodland culture for the 21st century



C. A woodland culture for the 21st century

Aspiration

England's wooded landscapes seem familiar and timeless and it is all too easy to take them for granted. It is clear to us that England's trees, woods and forests represent a vast and underused national resource. With investment and action, we believe they can enhance the natural, social and economic wealth of our nation and provide solutions to some of the most pressing challenges facing society today. Wood and woodlands have the potential to be as relevant to our lives in the 21st century as they have been in the past.

We need a transformational change of culture around wood and woodlands, and their usefulness to society. In practical terms, this means Government, landowners, communities and the public engaging with woodlands and wood products in new ways. A key step is finding new ways of valuing our trees, woods and forests.

New ways of valuing our woodlands

Our woodlands are part of the mosaic of ecosystems that underpin the environmental benefits on which we all depend – the very essentials of life. The value of natural products like timber can be measured, and to an extent, is reflected in the price we pay for them. However, there are many other important benefits that are not currently bought and sold. These include things such as clean air, clean water, access for recreation, our cultural heritage, our species diversity and the natural processes that regulate our climate and cycle nutrients. We tend to take these ecosystem services for granted and fail to recognise that the cost of providing them by other means could be vast. The ecosystems approach explicitly recognises this issue, and the National Ecosystem Assessment⁸, published by the UK Government in 2011, set out to explore it more systematically and in greater detail than ever before.

As a Panel, we welcome this new framework and urge Government to build on it.

Our recommendations

Recommendation: We urge society as a whole to value woodlands for the full range of benefits they bring. We call on Government to pioneer a new approach to valuing and rewarding the management, improvement and expansion of the woodland ecosystems for all the benefits they provide to people, nature and the green economy.

Recommendation: Government as a priority needs to adopt policies, and encourage new markets, which reflect the value of the ecosystem services provided by woodland. These include carbon storage, flood protection, biodiversity and habitat provision, and wider ecosystem services. In doing so, it should build on advice from the Natural Capital Committee⁹.

We believe that there is potential for new markets to emerge, to deliver innovative forms of finance to reward woodland owners for delivering public benefits, and we have seen that there is interest in such mechanisms¹⁰. We recognise that many of these markets are conceptual or at an early stage of development¹¹. The market for woodland carbon is growing, but even here, is not yet working effectively: the price that owners receive doesn't reflect the full benefits¹². Most owners are still unaware of the Woodland Carbon Code.^{13, 14}

We want to harness the potential for such markets, and in the future ensure attractive trading and investment opportunities that go beyond existing boundaries to businesses that have not traditionally been involved in the forestry sector. We would welcome the Ecosystem Market Task Force¹⁵ exploring this, using forestry as an exemplar for the development of pragmatic ecosystem market solutions.

There is still much to do to embrace the ecosystems approach in our woodlands. Government should continue to frame and evaluate its policies in ecosystem terms, taking account of their impact on social and natural capital, alongside traditional economic costs and benefits. The public forest estate in particular represents a vast national bank of natural, social and economic capital, which needs to be sustained for the long term. To achieve this, it needs to be managed using a balance sheet that takes full account of all the benefits it delivers. This will help highlight where investment should be targeted, and help resolve difficult management decisions.

Meanwhile, the majority of unmanaged woodlands are to be found in the 82% of woodlands outside the public forest estate. These offer perhaps the biggest opportunity to increase these benefits by ensuring a much higher proportion of them are managed appropriately, as part of meeting their owner's objectives (Figure 3). We cover woodland management in more depth later in the report.

Our vision of a woodland culture

Our vision of a woodland culture is an exciting future within our reach. We saw evidence of what it means culturally, environmentally and economically on some of our visits, for example in the Forest of Dean and the New Forest, where people engage with woodland in many different ways. With a rejuvenated wood supply chain (which we cover later in this report) we believe landowners will want to enhance their land with trees and woods. Woodland owners will understand the benefits of managing their woodlands and will be motivated to do things differently. And people will understand and value the changing characteristics of productive woodlands.

Wood will become the product of choice for people and businesses, and long-term, attractive, careers in all parts of the wood supply chain will become commonplace. Public investment will create the right support and conditions for these changes to take hold and flourish. The return on this investment will take many forms: new private investment; more jobs and a better skilled forestry workforce; more timber brought to market, helping our transition to a low-carbon economy; better public health and improved well-being; bigger, better and more joined up habitats for wildlife; and landscapes that will help us cope better with a changing climate (Figure 4).

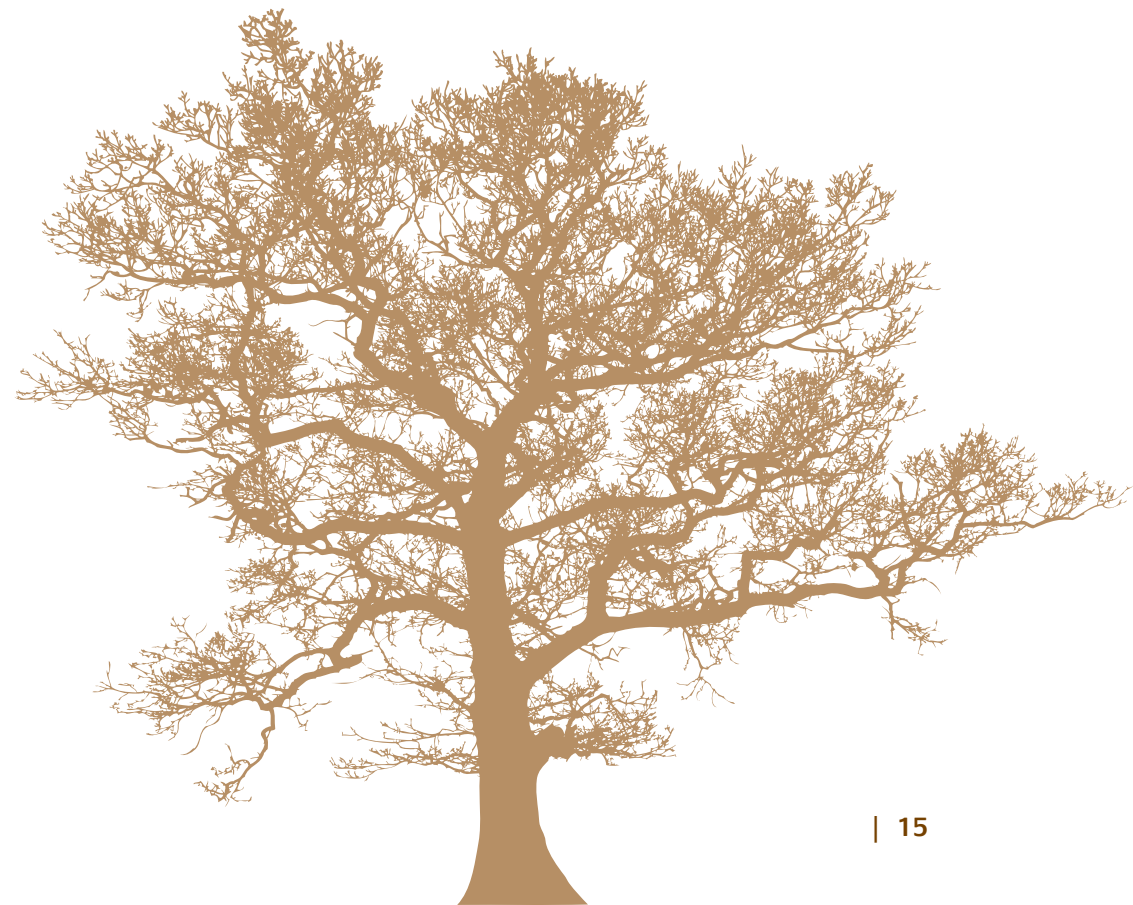


Figure 3: The range of activities carried out as part of managing woodlands to meet their owner's objectives

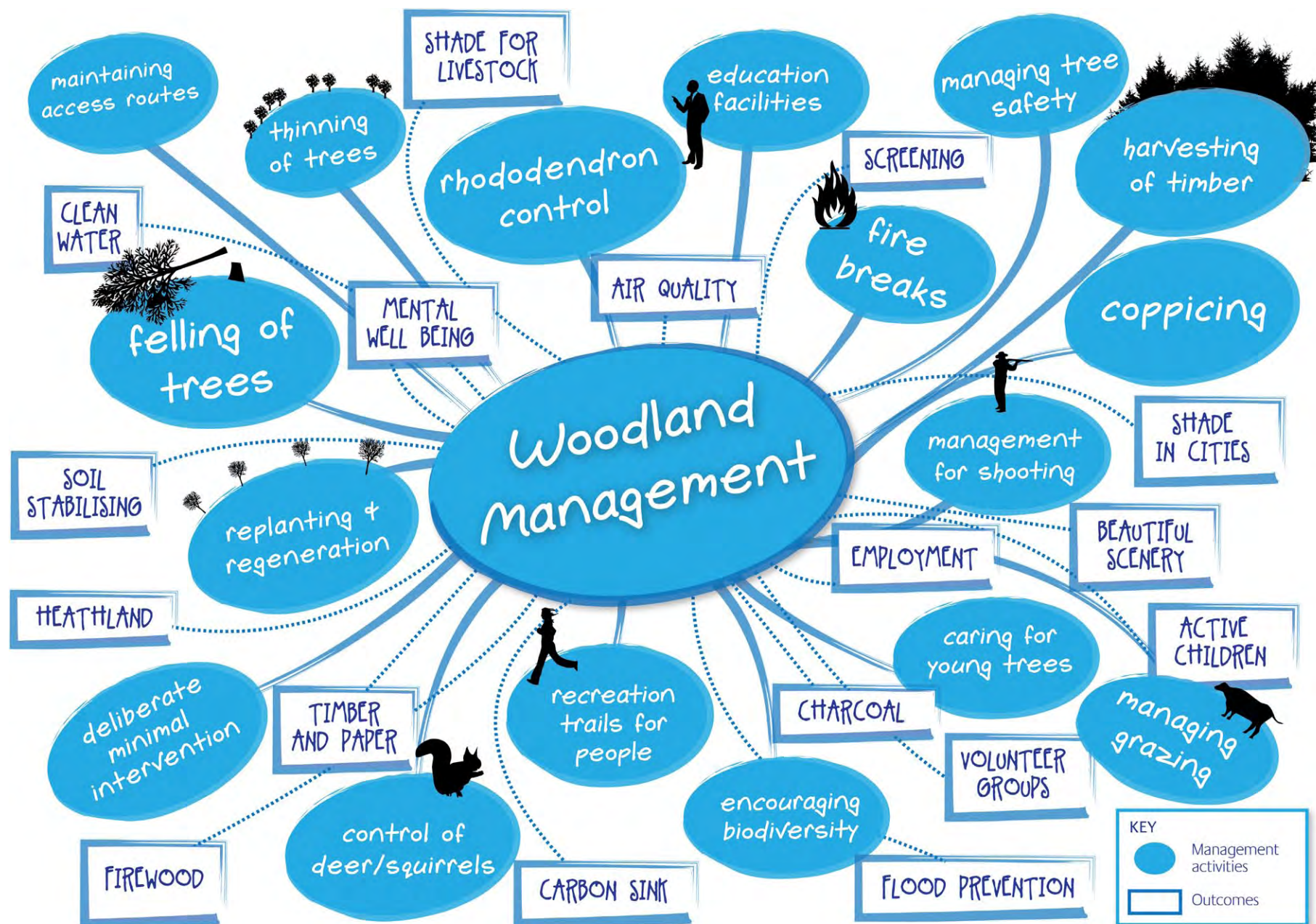
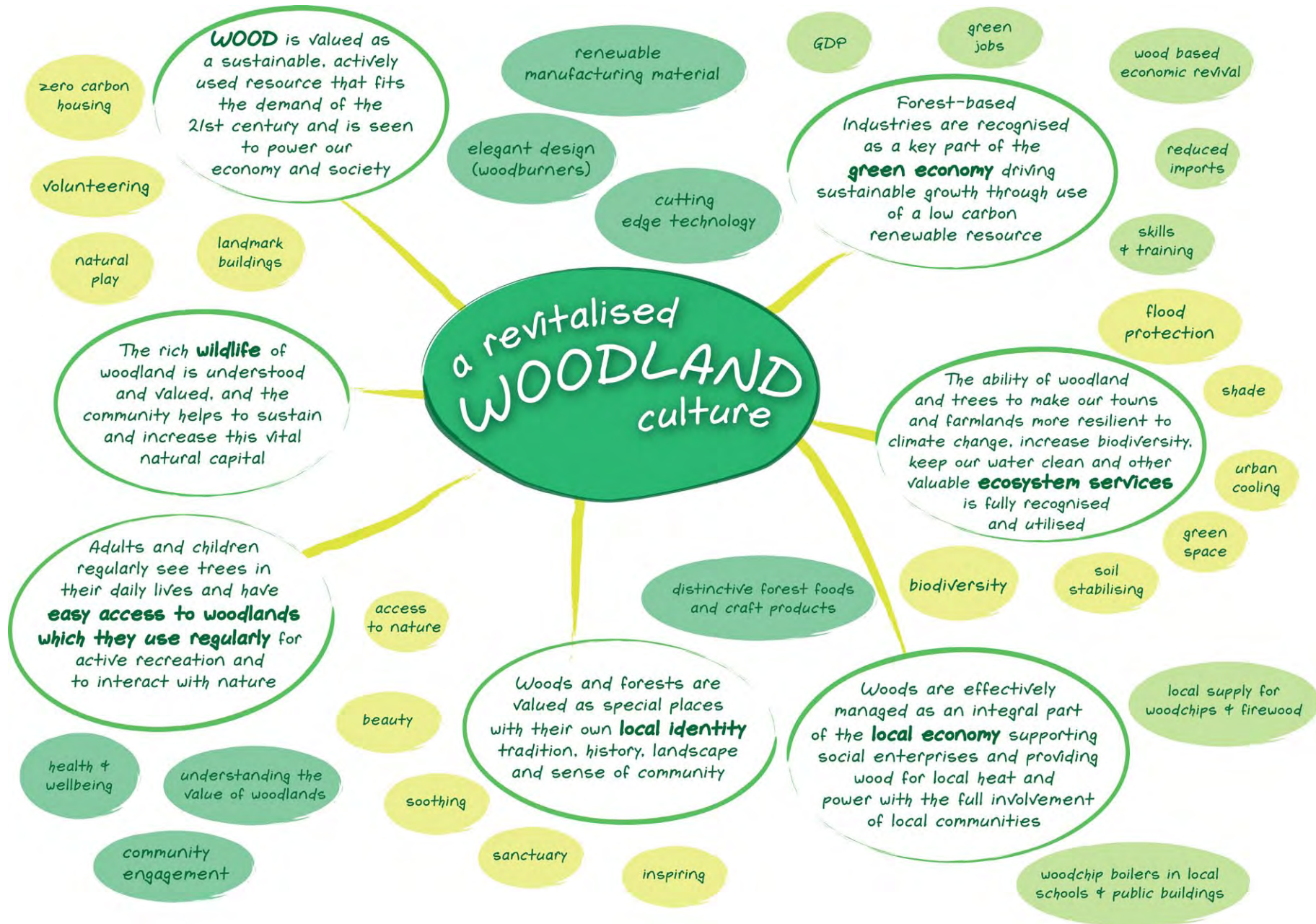


Figure 4: Some of the many elements and outcomes of a revitalised woodland culture



To make this happen, it is clear that we need a radically different approach to engage the managers of England's woodlands. A survey undertaken on behalf of our Panel showed that different landowners have different motivations and objectives for their woodlands, including environmental benefits, personal pleasure, timber production and landscape conservation¹⁶. Consequently, woodland owners will respond differently to incentives. Some will require direct financial support; others will prefer practical help; while others will be looking for new business opportunities. But many woodland owners are simply not engaged at all with Government or the wider forestry sector. This needs to change, and our public forestry organisations should be charged with encouraging this.

Importantly, for these changes to be sustained for the long term, woodland owners need to generate income from the public benefits they deliver. This income can be generated from traditional markets and payments for ecosystem services. Government needs to create the right conditions for these markets to flourish. Until this happens, we need Government policy to explicitly recognise the public value delivered by all our woodlands, both on and off the public forest estate, and for investment decisions to take full account of them.

We know that both new and existing markets are unlikely to deliver the full range of public benefits we require, at the right level and in the right places. Therefore public investment will be needed, particularly while these markets develop. Where appropriate, this investment should be provided at local level. Getting the best value from both public and private sector investment is crucial. To support this we need tools such as competitive contracts and auctions for ecosystem service payments, and for biodiversity offsets to continue.

The following sections of the report set out the policy changes that will deliver our vision. We then set out the characteristics of the new public bodies that will be tasked with driving these changes forward.

Together, these are the essential steps we believe are necessary to unlock the huge potential of England's woodland resource, and to put it on the right footing for the next 100 years and beyond.



C1. Trees and woods: Good for people

Aspiration

As a Panel, we want as many people as possible, wherever they live, to enjoy access to woods nearby. Working with woodland owners we want to increase the quantity and quality of access to privately owned woodlands, where communities identify need, through a combination of paths and open access. We want communities, including people of all ages to have the opportunity to be more engaged with their local woods and forests, whether as visitors, volunteers, managers or even owners. We also need more local woods.

Woods and forests are great places to enjoy watching wildlife, walking, riding bikes or horses, or simply playing among the trees. In the right place they are able to absorb activities such as shooting or military training, which can generate useful income for the owner. We know that spending time in and among trees and green space can improve our physical and mental health, the liveability of our towns and cities and our quality of life and social cohesion¹⁷. The message to emerge most strongly from the 42,000 responses to our call for views was the personal value that people place on being able to visit and enjoy woodlands.

The quality of access to the public forest estate is unrivalled. Securing this access for the nation, for the long term, is a central part of our case for retaining a national public forest estate.



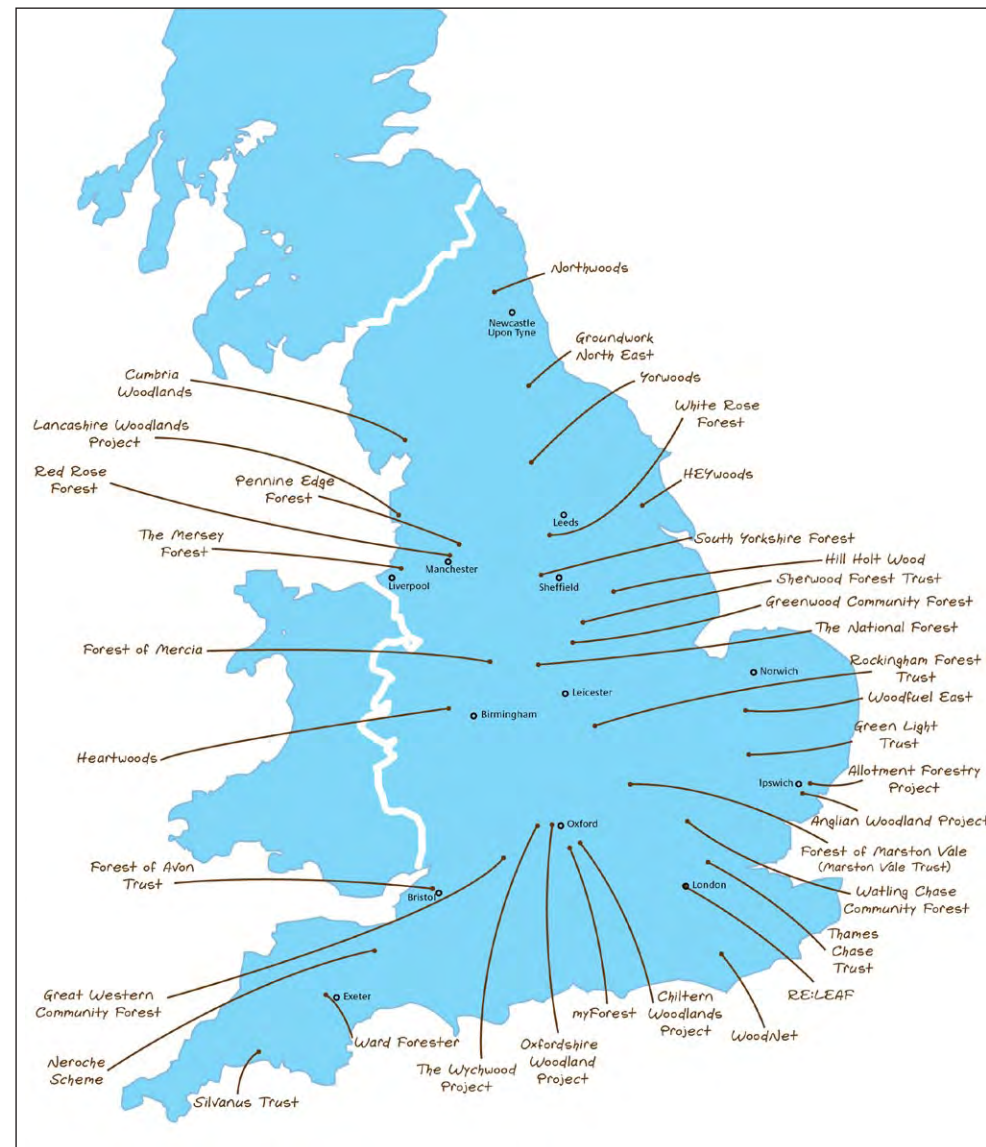
Evidence: health and well-being

The case for action to enable more people to benefit from a direct and active connection to nature, including trees and woodlands, is well established. We know that forming a connection with nature at a young age is fundamental to an appreciation of the importance of nature in later life, and a willingness to change behaviour as a result¹⁸. International evidence confirms that access to trees and the natural environment helps tackle mental ill-health¹⁹. It improves childhood fitness²⁰, and evidence shows that people living in areas with high levels of greenery are 40% less likely to be overweight or obese²¹. Yet, generation by generation we are spending less time with nature and reducing our capacity to benefit from, understand, respect and conserve our natural environment. We need to reverse these trends and enable more people, especially children, to have first-hand experience of the natural world through environmental education and creative outdoor play²².

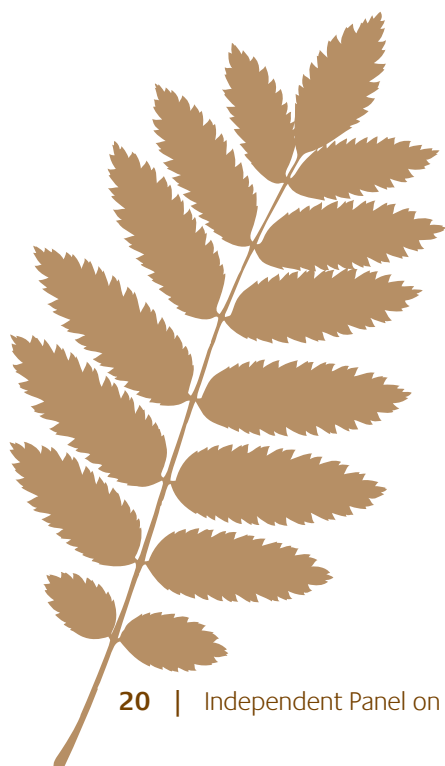
Alongside this, the work of the Spatial Planning and Health Group²³ shows that health and environmental inequalities are inexorably linked, and that poor environments contribute significantly to poor health and health inequalities. If every household in England were provided with good access to quality green space, an estimated £2.1 billion in healthcare costs could be saved²⁴. And the social costs of the impacts of air pollution are estimated at £16 billion per year in the UK²⁵.

We are encouraged by the new public health duty on NHS Health Commissioning Boards to tackle health inequalities²⁶. We expect this to lead to investment in local initiatives promoting access to nature and woodlands for mental well being and public health benefits. There are many examples to build on, such as “Walking the way to health”, where GPs prescribe access to nature as a way of increasing physical activity²⁷. Or the actions of Birmingham City Council and partners in placing the concept of an integrated urban forest at the heart of their plans for a more sustainable future for the city.

Figure 5: Woodland initiatives in England that are members of the Woodland Initiatives Network.



Map based on data supplied by The Small Woods Association.



Community engagement

Aspiration

We want communities, and people of all ages, to have the opportunity to be more engaged with their local trees, woods and forests. This requires the expertise of the people who work in woodlands, and the energy of community activity in local woodland initiatives, to be invested in and built up for the future.

Evidence

People engage with trees, woodlands and forests in many different ways. These range from simply knowing that they are part of the landscape, to using and being in them for recreation or other leisure activities, through to participating in decision making, management and ownership. However recent surveys show that most people enjoy spending time in woods as visitors, rather than in a more formal capacity²⁸. Other research tells us that trees, woods and forests play a greater part in people's lives elsewhere in Europe than in England²⁹. There are cultural reasons for this, but experience of trees and their products is easier in countries with significantly higher woodland cover³⁰.

There is a significant body of evidence from the work of the National Forest and initiatives across England, Scotland and Wales that community forestry, where trees and society are brought together, transforms people's lives. The benefits to people are manifold³¹, and the investment is paid back many times.

Woodland initiatives have a crucial role to play (Figure 5). Many exciting initiatives around England are helping people to connect to their local woodlands, generating woodland activity and contributing to the range of health and well-being benefits we describe above. These include the Mersey Forest's school grounds improvement project, "Friends" groups protecting and enhancing woods such as Chopwell Wood near Gateshead, and volunteer Tree Wardens countrywide. Schemes such as those at Hill Holt Wood, Lincolnshire are creating work placements for people facing barriers to employment. Others such as the Greenlight

Trust's Community Owned Wildspace programme support local communities to own and maintain woodlands and other wildspaces.

Expanding the use of "community supported agriculture"³² to build cultural connections between communities and local woodlands, their products and owners, could also help. We saw an inspirational example of this during our visit to Shropshire where communities and landowners are working together as Wyre Community Land Trust³³, to restore traditional orchards and small coppice woodlands, and make use of their products.

Our recommendations

Recommendation: The work of community groups and woodland initiatives should be supported by the evolved Forest Services organisation (see Section D) through grants and other support, and by the public forest estate management organisation engaging with local communities across its whole estate.

Recommendation: That Local Health and Wellbeing Boards implement their public health duties by investing in local access to nature and woodlands.

Recommendation: Government should produce an action plan to deliver the Natural Environment White Paper's recommendations on reconnecting people and nature. Education authorities and early learning centres should ensure every child has an element of woodland-based learning that will, for example, encourage woodland owners to create a partnership with a local school.



More access to woodlands for more people

Aspiration

We aspire to a future where every person has access to a wood or wooded area close to where they live, with informal access being the norm in both publicly and privately owned woodlands.

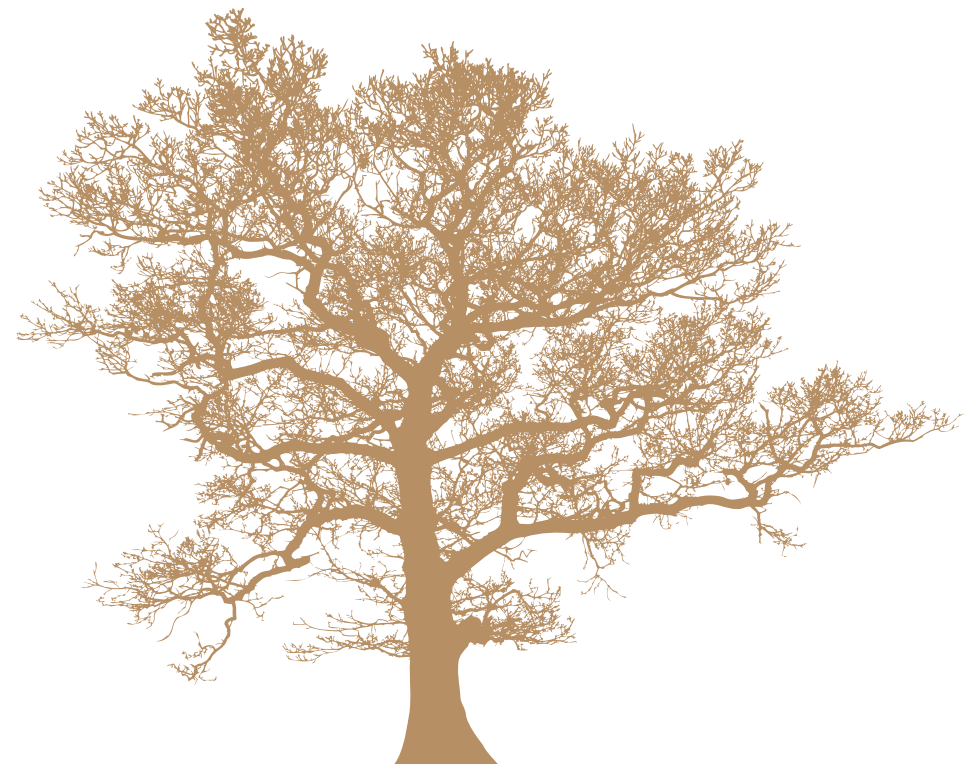
Evidence

Despite the current access to woodlands provided by public and private owners in England, a recent study shows that around 15% of the population have access to a wood over 2 hectares within 500m of their home, and 63% of people have access to a wood of at least 20 hectares within 4km³⁴. Work has already been done to identify the areas of greatest need: where there are no woods or no accessible woods, particularly close to the most deprived areas.

The 82% of woodland outside of the public forest estate is essential for securing a step change for public access and improve people's health and quality of life. A number of local authorities, private and third sector owners make excellent provision for public access, often in ways that directly respond to local need. We need to support others to follow their example. Of those that responded to the question in our survey of woodland owners, more than 30% would consider entering an agreement if they were incentivised to provide public access to their woods³⁵.

We welcome the recent "Paths for Communities"³⁶ scheme which aims to create new, permanent paths where local communities identify a need. We believe that there is scope within existing legislation, such as the Natural Environment and Rural Communities Act 2006, to enable other mechanisms to be developed swiftly. We also believe that innovative schemes should be developed to include longer access agreements or payments that lead to access in perpetuity³⁷.

We support the enhanced funding under the England Woodland Grant Scheme, directed to the most deprived areas of population and larger urban centres, which has led to 750,000 more people being able to access new or existing woodland in the last three years³⁸; and we would like it to be continued to create even more woodland access. The National Forest exemplifies how a long term, resourced and focused agenda can increase publicly accessible woodland in an area alongside other environmental and economic benefits (Figures 6 and 6.1).



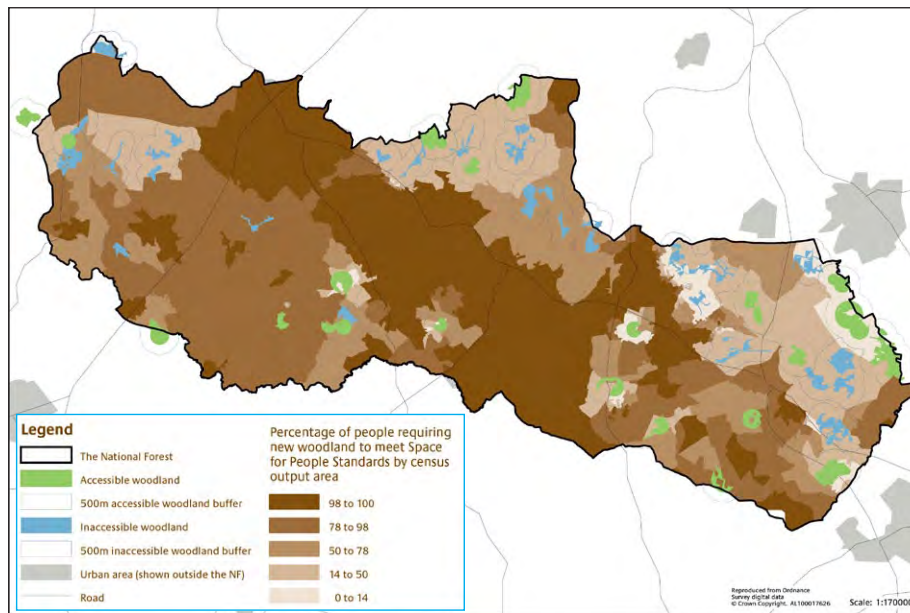


Figure 6: The National Forest and Space for People Standards 1995.

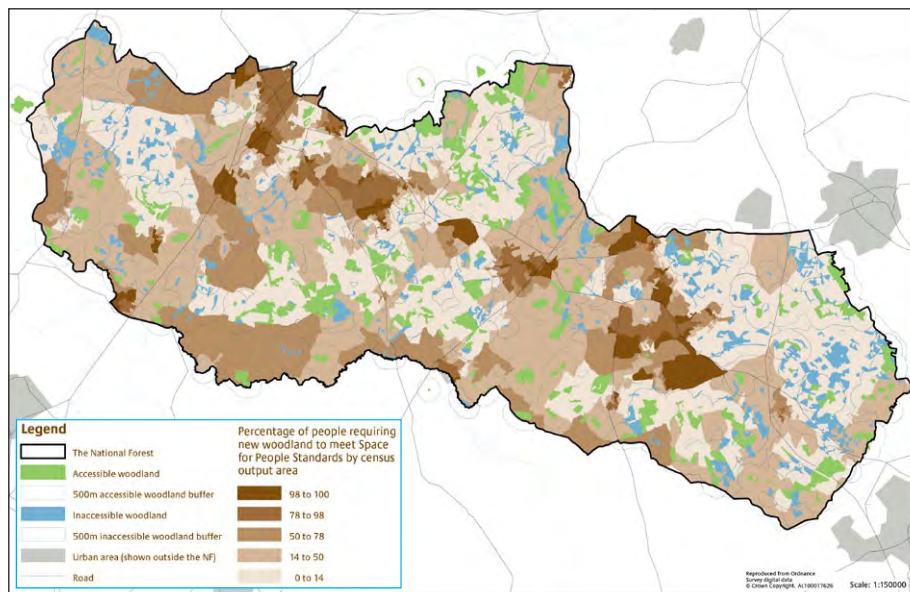


Figure 6.1: The National Forest and Space for People Standards 2009.

Maps based on analysis of Space for People data, compiled by the Woodland Trust.



Our recommendations

Recommendation: Government and other woodland owners to give as many people as possible ready access to trees and woodlands for health and well-being benefits – this means planting trees and woodlands closer to people and incentivising more access to existing woodlands.

Recommendation: Measurably increase the quantity and quality of access to public and privately owned woodlands, by incentivising provision through a combination of paths or open access, particularly where this delivers greatest public benefit; and by:

- Government seeking to increase significantly the population with access to a wood within close proximity of their home. Progress in meeting this ambition to be reported regularly, using the criteria in the Woodland Access Standard.
- Providing a single web gateway for information about access to woodlands open to public visits.

Access on the public forest estate

The public forest estate represents more than 40% of accessible woodland in England³⁹ despite representing only 18% of the total woodland area. However only a relatively small number of people can reach this easily and regularly.

Many people have told us that the Forestry Commission puts a lot of effort and investment into making it easier for them to visit their forests by providing well-maintained paths, car parks, cafes and other facilities. We agree that the current level and quality of access to the public forest estate is good and should be maintained for the long term. Ideally the estate should expand to enable more people to have access to it. We endorse current initiatives such as charging for car parking or

permits for activities as ways of generating funds to help support access provision. But we also recognise that this provision needs greater investment than such schemes will deliver over the long term, and that current arrangements do not allow for this.

We have seen how the acquisition of land close to urban populations by the public forest estate in the last decade has increased the number of people able to access woodland close to where they live. Principally, these acquisitions have used some form of public funding. We support the estate continuing to be dynamic in this way, especially where such benefits are unlikely to be delivered by other means. However we also encourage other means of securing more woodland cover close to people, for example through planning conditions and local authorities increasing tree cover on land they own, where appropriate.

We also wish to encourage and endorse a continuation of the permissive approach, adopted by the Forestry Commission, to allowing a range of activities on its land alongside other uses of the public forest estate. A number of woodland user groups have called for the Panel to make recommendations that lead to statutory provision for their activity on the public forest estate. The majority of the freehold public forest estate is already dedicated as Access Land under the Countryside Rights of Way Act 2000, giving walkers statutory rights. This is the foundation for the quiet recreation enjoyed by the majority of people. Beyond that, we believe the right approach is for decisions about accommodating other recreation and leisure activities to be taken locally, taking account of the circumstances of the place and other relevant factors.

Our recommendations in Section D aim to maintain and enhance good quality access for people to the public forest estate in England.

Trees in our neighbourhoods

Aspiration

We believe there should be more, and better maintained trees, close to where people live. This means more trees on urban streets, more trees in town parks, and tree “corridors” from the centre of towns and cities out to local woods and forests with good access. We want people to enjoy the health benefits of access to trees and woodlands, and we want our urban areas to have more natural shade and to be more resilient to climate change.

Evidence

Our rural and urban landscapes are endowed with a magnificent legacy of mature individual trees, that grace our hedgerows, towns and parks⁴⁰.

The sustainability of this legacy is under threat with tree stocks that are ageing and dwindling. Our neighbourhoods are benefitting today from actions taken in Victorian times, and we need action now to secure this legacy for the future. Local authorities must identify where trees are needed in their area and then resource tree planting, care and management.

Local tree strategies and opportunity mapping should be mandatory for local authorities. Programmes to replace ageing tree stocks should look to maximise their future resilience to climate change, alongside their biodiversity and aesthetic value. Often, this will mean replacing large trees with the same, rather than with more numerous but smaller ornamental cultivars of lower biodiversity and aesthetic value. Investment in professional arboricultural advice and expertise will be required.

Figure 7: A city view without trees and the same view with trees



Photographs supplied by Capita Symonds/Trees & Design Action Group.

The urban forest improves the quality of our towns and cities. The Mercer Index measures the quality of living for expatriates and benchmarks⁴¹ cities against 39 factors to do so. The quality of the urban environment, and in particular the prevalence of the green and natural environment, including trees, has been shown to greatly influence people's preferences in choosing one city over another for investment or as a place to live. Using the i-Tree Eco tool⁴² the local authority in Torbay, Devon⁴³ has assessed the extent, composition and size of their urban forest, revealing it to have a replacement value of £280 million and an ecosystem value of £1.7 billion per year, which is influencing decision making in that locality.

In Scotland, local authorities require tree planting through the planning process. We want to see the existing duties of local planning authorities in the Town and Country Planning Act 1990⁴⁴ regarding tree planting and conservation upheld and promoted. We are encouraged by the National Planning Policy Framework's (NPPF) recognition of the importance of "Green Infrastructure", of which trees are one of the most critical components. New Local Plans are the opportunity for communities to have more tree cover in their local area⁴⁵. More local authorities could follow the example of Sefton Borough⁴⁶ who are increasing their tree cover, and the Greater London Authority who have a target to increase tree cover from 20% today, to 25% by 2025, and a further 5% by 2050⁴⁷.

We have been impressed by the work of the Trees and Design Action Group⁴⁸ who seek to protect and promote the urban forest through publications such as "Trees in the Townscape"⁴⁹. This contains many examples of best practice. Programmes such as "Jubilee Woods", "The Big Tree Plant" and "London's ReLEAF" are making people more aware of the beauty and benefits of trees in their everyday environment. This all contributes to the woodland culture we want to see.

Community benefits could be significantly larger if local authorities were to work across boundaries so that the Community Infrastructure Levy from a number of developments could be pooled, to achieve improvements in tree cover across a landscape.

Our recommendations

Recommendation: Planning policy and practice should:

- Ensure woodland creation, tree planting and maintenance is part of the green space plan for new commercial and housing development.
- Integrate tree and woodland strategies into Local and Neighbourhood Plans.
- Encourage local authorities to look creatively, and across boundaries, at the use of S106 agreements, biodiversity off-sets and particularly the Community Infrastructure Levy. These levers could produce green space schemes, including trees and woodland, that make a significant difference to the landscape as a whole.
- Lead to more Local Plans encouraging woodland-based businesses, including those based on leisure and tourism, that are appropriate to their location and enhance natural capital.



C2. Trees and woods: Good for nature

Protecting, restoring and connecting our most valuable habitats for nature

Aspiration

Our vision is for a landscape where our inheritance of woodlands and trees is well protected, where there are opportunities for nature to thrive everywhere, and where the wildlife value of woodland and associated habitats is increasing. We want to see greater protection and continuing restoration of habitats identified as being of high priority, including ancient woodlands, heathlands, and other irreplaceable habitats as part of our country's contribution to halting international biodiversity

loss. We also need action to reconnect these habitats at a landscape scale, as recommended in the "Making Space for Nature"⁵⁰ report from the Lawton Review.

A central part of our vision is for more widespread sustainable woodland management, which will help improve habitats for local wildlife, alongside other benefits. The chance to improve woodland conditions for priority species⁵¹ and increase overall woodland biodiversity, through better management, is within our grasp. This can fit with a thriving, sustainable green woodland economy, aided by new, smartly regulated markets, advice and incentives.

Figure 8: Important woodland wildlife



Evidence

Woodlands make an important contribution to England's ecological network. As the National Ecosystem Assessment states: "woodlands provide the highest identified number of ecosystem services including regulating climate, air quality and water flows, providing timber and other wood products, as well as a range of cultural benefits." In a recent public survey asking people why they valued woodlands, wildlife was the most popular response⁵², and our own survey also highlighted the importance of biodiversity as an aim of woodland ownership⁵³.

However, many of England's woodland habitats are small, fragmented and undermanaged, which is putting our wildlife under pressure. Some of our best loved woodland birds, insects and plants are declining. One in six woodland flowers is now threatened with extinction, there has been a 56% decline in woodland butterflies, and a 70% decline in some specialist woodland birds. If we want species such as the lesser spotted woodpecker, pearl bordered fritillary and oxlip to become widespread once more, we urgently need a change in land management⁵⁴.

Woodlands have been utilised and valued by humankind throughout history for food, shelter and timber. In the past, woods were more actively coppiced, thinned and selectively felled, which created a rich and varied woodland landscape. This helped wildlife to flourish and sustained the woodlands themselves. There is evidence that links a lack of sustainable management and deer pressure, amongst other things, with the changing condition of our woodlands and the decline in wildlife⁵⁵.

Only half of our woodlands are in sustainable management⁵⁶. We need more woodlands to be managed appropriately, as recommended in the "Making Space for Nature" report, if we are to protect and enhance our woodland wildlife. The type of management should be determined locally, depending on type, the current state and location of the woodland, the potential wildlife present and the owner's objectives. Managed appropriately, timber production and activities such as shooting can lead to beneficial woodland management for nature, where the landowner manages the land effectively and provides good habitats for other species. What is clear is that wherever and whenever management takes place,

it must conform to the guidance in the UK Forestry Standard as a minimum.

At the same time, we need to take action to restore or improve management of large areas of England's ancient woodland, heathland and other irreplaceable habitats that were planted with trees under previous policies. For example, in England we have lost 99% of all fenland, 97% of our wildflower meadows and 80% of our lowland heathland⁵⁷ to other uses including development, agriculture and forestry. While regulations⁵⁸ are now in place to ensure adverse impacts of some past woodland planting policies are not repeated, we need to restore the habitats that were affected by them.

Restoring former areas of heath, meadow and ancient woodland that were converted to conifer plantation is one of the most economic, practical and effective ways to repair these rare and threatened habitats. The preserved seed bank, coupled with the quality of the soil under these plantations which has supported trees for decades, rather than being agricultural land subject to annual fertiliser inputs, provides us with a unique opportunity for habitat restoration. This is especially true as many first rotation tree crops come to their felling dates, and this coincides with the need for urgent action to help our most threatened wildlife to adapt to climate change. But time is of the essence as the viability of the native seed bank is declining⁵⁹.

The public forest estate contains some of our most valuable habitats and species, many of which are of international importance. The estate is a vast reservoir of untapped potential for nature, having some of the largest areas of ancient woodland and former heaths, grasslands and other open habitats, which were converted to timber plantations to meet previous policy commitments⁶⁰. Given the scale of the public forest estate, a refreshed commitment to restoring irreplaceable habitats, as plantations are harvested, represents an important opportunity.

Ancient woodlands are among our most important woodland wildlife habitats, growing on irreplaceable and undisturbed soils⁶¹ which is why it is so important to protect, manage and restore the little that remains.

We are losing ancient woodland in England⁶². The majority is not protected by statute for its biodiversity value⁶³. Site of Special Scientific Interest (SSSI) protection only applies to 15% of our ancient woodlands, and as a habitat it is under represented compared to others. The current internal review of SSSI designations by Natural England may improve this, but in the meantime some of our most precious woodlands remain vulnerable. We must take action to create a coherent and resilient ecological network if we are to meet the UK's national commitments in the revised England Biodiversity Strategy⁶⁴ and international⁶⁵ commitments to halt biodiversity loss by 2020, agreed with 190 countries in Nagoya, Japan.

We recognise that action to restore and enhance irreplaceable habitats from forests will have an economic impact in terms of timber income and habitat management costs. However, there is evidence that wildlife rich habitats, such as heathland, can bring local economic gains through tourism and job creation⁶⁶. And, our ambitious recommendations to expand woodlands should allow for economically productive woodlands to be planted in more appropriate areas. We cover woodland expansion in more detail in the following section.

Importantly, we believe we need a fundamental change in how the Common Agricultural Policy (CAP) is delivered, to achieve greater public benefits over the long term. CAP incentives need to deliver the fullest range of public benefits for people, nature and the economy.

Our recommendations

Recommendation: Government to ensure that land use creates a coherent and resilient ecological network at a landscape scale, by integrating policy and delivery mechanisms for woods, trees and forests in line with the principles set in the “Making Space for Nature” report.

Recommendation: Government funding through the Common Agricultural Policy (CAP) to ensure that incentives for woodland management and creation are integrated with agricultural incentives, to achieve improved ecosystem outcomes on a landscape scale. Alongside this refocusing of CAP (2013-2020), we urge that grant schemes, such as the England Woodland Grant Scheme funded through the Rural Development Programme for England, should continue to be available to incentivise woodland expansion and management and other outcomes that are good for people, nature and the economy.

Recommendation: Government, working in partnership with the forestry and land management sectors, should proactively offer every woodland owner advice on multi-benefit woodland management, prioritising woods greater than five hectares, with a view to increasing the area of woodland with a current UKFS compliant management plan, from around 50% to 80% of the total, over about the next ten years.

Recommendation: Government should reconfirm the policy approach set out in the Open Habitats Policy and Ancient Woodland Policy (Keepers of Time – A statement of policy for England's ancient and native woodland)⁶⁷. This should be supported through incentives to private woodland owners and a refreshed commitment to delivery on the public forest estate.

Recommendation: Planning policy and practice should:

- Reflect the value of ancient woodlands, trees of special interest, for example veteran trees, and other priority habitats in Local Plans, and refuse planning permission for developments that would have an adverse impact on them.
- Encourage local authorities to take professional forestry and arboricultural management advice where planning applications affect trees and woodlands.

Recommendation: Local Nature Partnerships and Local Enterprise Partnerships, working with Forest Services, should identify:

- and promote landscape scale initiatives for bigger and better connected habitats, with greater resilience to climate change;
- and promote opportunities for greater local access;
- and promote opportunities to expand the production of timber;
- trees and woods in need of better management, and areas which require woodland expansion to deliver ecosystem services;
- woodland habitats that warrant greater protection, and work with Natural England to secure these as Sites of Special Scientific Interest; and
- those parts of forests in need of restoration to nationally important habitats⁶⁸.

Recommendation: The National Forest Inventory to complement annual woodland planting statistics by recording actual progress towards net increase in woodland cover, and:

- include a report on extent of woodland habitats, including specifically ancient woodland, which should inform reviews of policy, such as SSSI designation.
- include a record of open habitat restoration from woodland.

Expanding woodland cover in England

Aspiration

We want to see a significant increase in forest and woodland cover in England, generating a range of public benefits. Our vision is of a landscape more richly endowed with trees, small woods, copses, hedges, larger woods and forests. Woodland habitats need to be extended, buffered and linked as recommended by the “Making Space for Nature” report. New woodlands will offer more opportunities for people to connect with nature, will improve public health and well-being, and will create more sustainable timber for use by society within a green economy.

Evidence

The report “Making Space for Nature” summarised the action needed to enhance the resilience and coherence of England’s ecological network as more, bigger, better and joined. Fragmentation of habitats is a problem we need to reverse. By expanding woodland cover, using tree species better suited to our future climate and wildlife needs, we will be able to increase the resilience of the wider woodland resource. We must ensure these are economically sustainable so they do not become the under-managed woodlands of the future. In time they will help nature to recover from past declines, help our woodlands adapt to future climate change, and produce timber products of use.

The Woodland Potential Calculator⁶⁹, which draws on information collated in National Character Area profiles⁷⁰, Ecological Site Classification⁷¹ and other environmental, social and economic data, can help target woodland expansion to achieve the right trees in the right place.

The work of the Woodland Carbon Task Force⁷² reveals that, in England, there are a small number of organisations which own significant areas of land where new woodland could be created. They include the public sector, such as local authorities, and charitable bodies, like the National Trust and the Church Commissioners. Partnership working with these organisations could be particularly effective. However, the bigger

challenge is to motivate farmers, small landowners and communities, who between them own a much larger amount of land, to embrace the role they can play in creating a more wooded landscape.

Analysis for the Panel reveals scope for planting on lower grade agricultural land, but also demonstrates that at current market prices, private returns from investment for a variety of scenarios, are insufficient to incentivise creation⁷³. The need for grant aid or other sources of viable income to encourage woodland creation was also emphasised in our survey results⁷⁴. Therefore, while there may be plenty of land with the potential for woodland creation in England, this work tells us that we need to convince existing landowners of the benefits of planting trees, and incentivise them to establish woodlands.

Success will depend on strong partnerships between public and private sector bodies and funding streams that recognise the full range of benefits of new woodlands, the different situations of landowners and the locations in which woodlands are being created. There are a range of locations where this has been successfully achieved, including the South West Forest, the National Forest and a number of the Community Forest areas, and there is much to learn from their experiences.

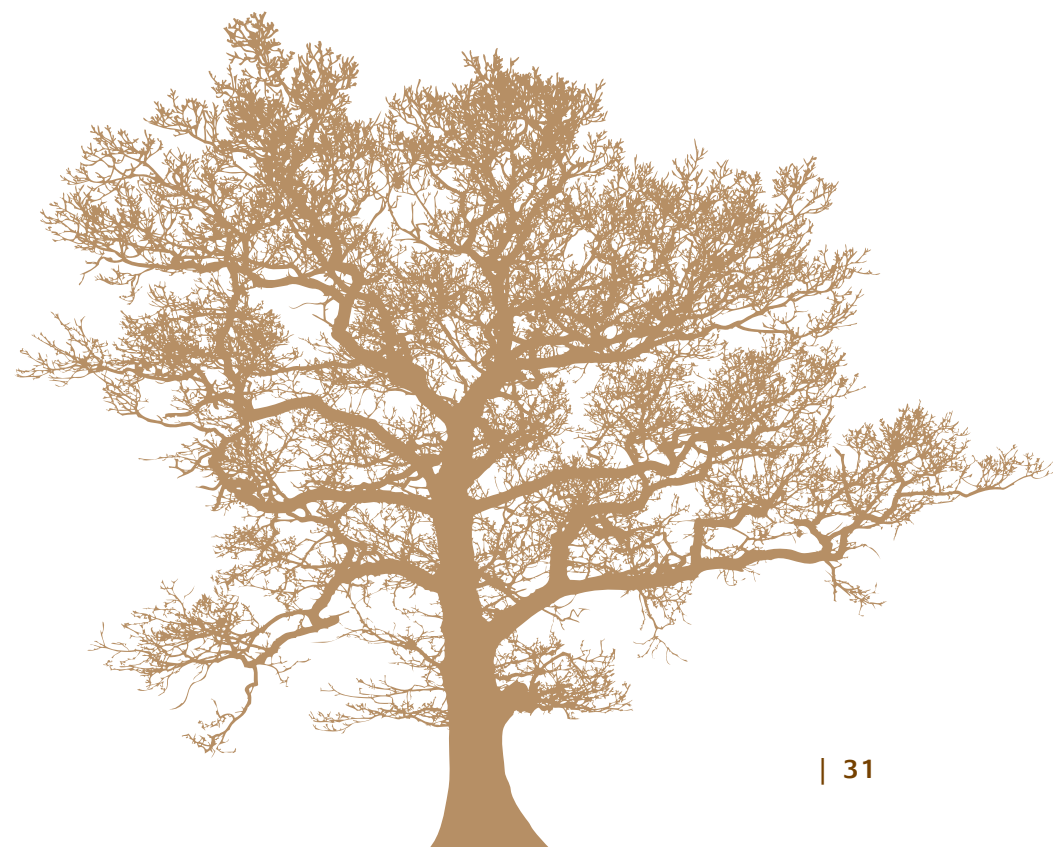
Preliminary analysis carried out for the Panel, based on a range of different woodland creation scenarios, shows that public benefits outweigh the estimated costs of woodland expansion, even though the financial returns to the landowner do not. Valuation of carbon was critical to the analysis. Sites close to people, and those that realise other specific public benefits, demonstrate the highest net present values⁷⁵.

Subsidies for competing land-uses, such as farming, influence the location of forestry, meaning land may not be used for its most valuable purpose and forests may be in sub-optimal locations⁷⁶. There are a number of grant schemes available to woodland owners and farmers with woods on their land. These provide grant support for landowners wanting to create new woodland and carry out sustainable woodland management, particularly where it protects and enhances the woodland's

environmental or social value. Research undertaken for the Panel suggests that in many cases the grants available are insufficient in themselves to cover the costs of converting land to forestry⁷⁷.

Our recommendations

Recommendation: Government to commit to an ambition to sustainably increase England's woodland cover from 10% to 15% by 2060, working with other landowners to create a more wooded landscape.



Trees and woodlands more resilient to climate change, pests and diseases

Aspiration

We want to see our wooded landscapes, in both rural and urban settings, being better protected from, and more resilient to future risks such as climate change, pests and diseases.

Evidence

One of the many benefits of woods and trees is their ability to help us respond to a changing climate⁷⁸, better enabling us to adapt to future temperature increases. We know that trees, in the right places, help us to adapt to climate change by reducing surface water flooding; reducing ambient temperature through direct shade and evapo-transpiration; and by reducing building heating and air-conditioning demands. A landscape with more trees will also help increase the resilience of our rural areas, by reducing soil erosion and soil moisture loss. Improving the condition of existing woodlands, and the creation of a more resilient ecological network of associated habitats, will help wildlife adapt to climate change and other pressures⁷⁹.

But our woods, the nature they contain and the businesses they support, also face risks from climate change. In fact, our woodlands are a lead indicator of the impacts of climate change, providing us with insight and impetus to take the action that may be needed to protect wider ecosystem services. The risks to English woodland from changing phenology⁸⁰, drought, increased incidence of pests and diseases, and increased fires, are considerable⁸¹. For example, modelling across the public forest estate suggests that if no action is taken to tackle diseases and pests, timber yields in England may decline by 35% by 2080 under a high CO₂ emissions scenario⁸². These risks will need to be managed if we are to ensure that the many benefits flowing from our woodlands are maintained into the future.

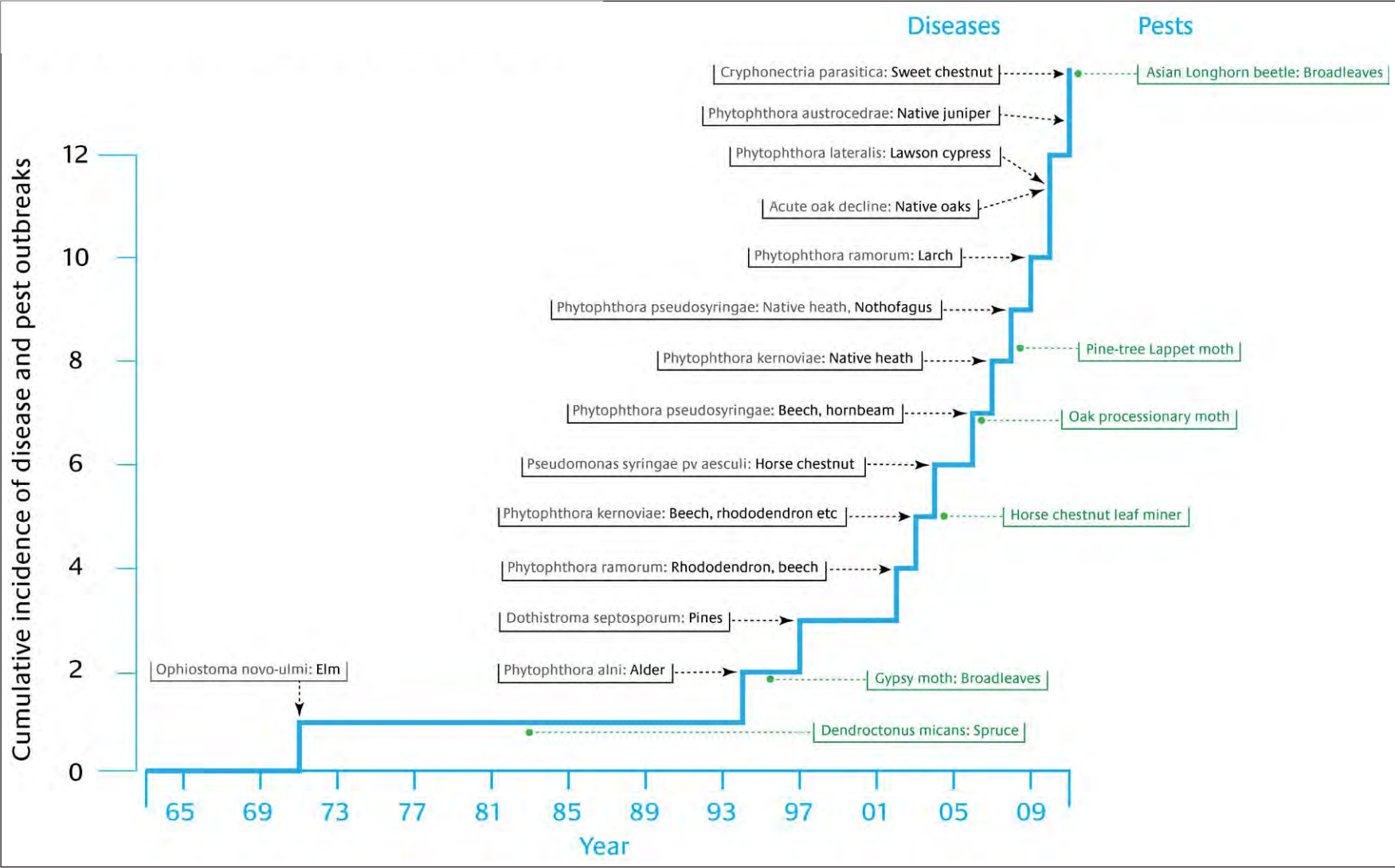
Proactive woodland management can help people, nature and businesses to adapt to climate change. Working at a landscape or catchment level is likely to deliver wider benefits than those limited to forest level⁸³.

Research will be essential to understand further the possible impacts of climate change, which tree species and of what provenance might be appropriate for our woodland expansion, and to improve our understanding of the effectiveness of any action taken⁸⁴. This will require co-ordinated action across the countryside from nurseries to landowners. The public forest estate can play a key role through its climate change action plan.

As well as the threat from climate change, our woodlands and their ecosystems are under threat from growing populations of deer⁸⁵ and grey squirrels⁸⁶, which damage or kill trees by browsing and bark stripping. In extreme cases deer can reduce the value of a woodland both economically and for wildlife, as saplings and young trees struggle to grow to maturity. The natural pattern of succession is affected and it becomes economically unviable to improve the condition of the woodland through sustainable management.

At the same time a large range of pests and diseases⁸⁷, many of which have arrived as a consequence of increasing trade in plants, are threatening our woodlands, forests and urban trees. In the last 12 months alone, the Forestry Commission in England has reported incidents including *Phytophthora ramorum*, *Phytophthora lateralis*, Acute Oak decline, red band needle blight, Oak Processionary moth and an infestation of Asian Longhorn beetle – together affecting thousands of hectares. In addition to the obvious threats to England's landscape and biodiversity, the costs to the economy are significant and growing. For example, the timber yield loss due to red band needle blight is currently valued at an estimated £695,000 per year in England⁸⁸, and in 2011 around \$33m funding underpinned the United States Animal and Plant Health Inspection Service's Asian Longhorn beetle eradication programme⁸⁹.

Figure 9: New tree disease and pest outbreaks UK



Based on data supplied by the Forestry Commission.

A Tree Health and Plant Biosecurity Action Plan⁹⁰ has been developed and Government funding in this area has increased but, as shown in Figure 9, so has the threat. One particular challenge is that many pathogens which threaten our species may be harmless in their home environment, and only become dangerous and visible when exposed to English flora and climatic conditions. New and appropriate funding for ongoing research into a range of new pests and pathogens is needed, that recognises the scale of the threat and the value of what is at risk. We need to develop adaptation solutions for our woodlands and forests so they become more resilient to such threats, and climate change.

Much of the knowledge and expertise underpinning this research is held within Government, in Forest Research (an agency of the Forestry Commission) and Food and Environment Research Agency (an agency of the Department for Environment, Food and Rural Affairs). Section D on organisational arrangements recommends a continuation of this important role.

Our recommendations

Recommendation: Government should speed up delivery of the Tree Health and Plant Biosecurity Action Plan by additional investment in research on tree and woodland diseases, resilience and biosecurity controls.



C3. Trees and woods: good for the green economy

Aspiration

England's woodlands and forests provide a wide variety of life-supporting and life-enhancing benefits to millions of people. We want to see a vibrant forestry and wood industry that contributes positively to England's economic growth and the transition to a green economy; that values natural capital; and that uses natural materials at a sustainable rate. We want to see our forestry and wood industry provide the economic stimulus to help regenerate our rural areas. We want to see thousands more jobs in sustainable woodland management and in all parts of the wood supply chain. This will include saw mills, pulp and paper manufacture, wood for fuel in stoves, wood for construction for building homes and offices, through to the creative industries making wood products for our lives and homes. We want to see a flourishing and commercially viable domestic forestry sector, which has the resources it needs to manage woods well. We want jobs in woodland management and the wood supply chain to be an attractive career choice. All this will only be possible if people feel better connected to wood and wood products, and choose to use them.

In the context of rising energy prices and growing global demand for resources, England's forests are a significantly under-exploited resource. Wood from England's forests has the potential to provide more low carbon material for construction and other goods, to be an alternative to fossil fuels, and to reduce our current dependency on imports. We want a renewed understanding of the potential for wood as a contemporary product, with new demand and market opportunities, and wood a material of choice for high-value and long-lasting products.

We also want to see local wood fuel much more widely used in rural communities, with rural public buildings and schools, and many more rural homes and businesses using wood-fuelled heating systems.

We want to see more woods appropriately managed to provide high quality timber for the domestic market, as well as providing benefits for people and nature. And we want to see more woodlands which have the scale and infrastructure to support viable forestry businesses, through the creation of commercially viable new forests, or targeted planting to expand and connect existing woods.

A regenerated wood industry can be an essential component of the UK's strategy for expanding markets for greener goods and services. Investment will be attracted when the market provides the right incentives for more woodland owners to engage and manage their woodlands.

We believe economic growth and protecting the natural environment can be mutually compatible goals. Strong evidence is emerging that shows a healthy environment is essential for economic growth, and the economic benefits of investing in biodiversity and ecosystems significantly outweigh the costs⁹¹.

Evidence: green economy

There is increasing evidence that the non-market values of ecosystem services from woodlands significantly exceed market values (e.g. from timber) but go largely unrewarded at present⁹². This needs to change if we want the growth in the economy to be truly "green". Markets that trade sustainably in natural goods and services are essential to growing a green economy and forestry is the epitome of this.

There is a strong case for moving the UK economy onto a greener footing. The Stern Review⁹³ definitively made the economic case for early action to tackle climate change. It showed that the cost for acting now is about 1% of GDP in 2050, compared with a cost of between 5% and 20% of GDP per annum if we fail to act early. The Government's Plan for Growth⁹⁴ makes clear that decarbonising the economy provides major

opportunities for UK businesses. As a renewable resource and a carbon sink, wood can play a small but important part in the green economy and decarbonisation agenda.

The global low-carbon market was worth more than £3.2 trillion in 2009/10 and is projected to reach £4 trillion by 2015 as economies around the world invest in low-carbon technologies across a broad range of sectors. The UK share of that market was more than £11.6 billion in 2009/10, with almost 910,000 jobs, but could be much larger⁹⁵.

Economic growth based on non-renewable sources is likely to be constrained by the cost of raw materials and high energy prices, which have increased by 63% since 2008/9. The UK is becoming increasingly dependent on imported fossil fuels – by 2020 we could be importing 45 to 60% of our oil and 70% or more of our gas. At the same time, global demand is likely to increase, leading to supply constraints and volatile prices⁹⁶. As a home-grown, renewable resource, wood should be playing an increasing part in this economic activity.

Evidence – wood and its supply chain

England's woods provide renewable low-carbon materials for products that people value highly, such as wooden beams and furniture. Wood is also the source material for everyday products such as paper and board. It is estimated that home-grown wood supports primary wood processing companies that contribute £500 million to England's economy each year⁹⁷.

Recent estimates, based on 2008 figures, suggest that the English forestry, wood-processing and paper industries directly contribute around £4.2 billion of gross value added (GVA) annually and employ around 110,000 people⁹⁸. For comparison, £4.2 billion GVA represents around 0.38% of England's GVA or about 40% more than the contribution of the mining and quarrying industries.

In the last 15 years, more than £1.6 billion has been invested in the UK wood industry and it is estimated that the value of this investment has displaced more than £1 billion in imports annually⁹⁹.

Public forest estate support for the sector

The public forest estate plays an important role in the timber market in England. In 2010 it was estimated to have accounted for around 60% of English softwood sales¹⁰⁰. Clearly, it has a big impact on timber supply to businesses and contractors that are dependent on home-grown timber. Forest Enterprise England (the part of the Forestry Commission that manages the public forest estate) establishes long-term contracts for supplying timber to wood-using businesses, to give them the confidence to invest. Only a few private sector woodland owners have the scale to do this, and most have not felt able to commit to such long-term contracts, as estates are often operated for a different set of economic benefits. Having less timber to sell, they often prefer the flexibility of selling timber when prices are high. Forest Enterprise England has, through continuing long-term contracts, enabled wood-using businesses to survive periods of weak supply, which in turn benefits all woodland owners and supports the ongoing provision of non-market benefits such as biodiversity and carbon sequestration.

Forest Enterprise England's influence in the timber market is limited by the fact that softwood prices are largely determined by world markets. However the requirement under HM Treasury rules to balance the books at the Forestry Commission each year has meant that public forest timber has been sold while prices are low, depressing the market still further. Forest Enterprise England has recently been given the capacity to retain funds across financial years, which is a helpful precedent for our organisational recommendations, which we cover in Section D.

The public forest estate's timber supplies are forecast to decline over time, as we outline in Section D, providing opportunities for private woodland owners to fill the gap in a significantly growing market. Maintaining a stable and increasing supply of domestic timber will require more woodland to be brought into management, as well as the creation of new productive forests to supply high quality domestic timber for the long term, as set out in Section C2. Such expansion of the timber supplies in England could also help reduce our current high reliance on imports.

Economic opportunities

Assessments of the future potential growth of the timber-related market are optimistic. A 2010 report on the scale of the potential for the wood fuel market in the UK suggested that the wood fuel supply chain could generate £1 billion GVA and 15,000 direct and indirect jobs by 2020¹⁰¹, if wood-burning boilers are manufactured in the UK.

Another study suggests England's forestry and wood processing sector could provide more than 7,000 new jobs in rural areas, through a combination of bringing more woodland under management, planting more trees and stimulating markets for wood¹⁰².

As the role of wood in the green economy develops, there are exciting opportunities for the private sector. In 2011 only 45% of total wood production came from the 82% of our woods that lie outside the public forest estate¹⁰³. It is also estimated that the private sector is only harvesting around 40% of its potentially available softwood¹⁰⁴. This would suggest that there is significant potential for the private sector to increase production. Demand for wood fuel has increased, and the sales of domestic wood-burning and multi-fuel stoves have more than doubled in the UK and Ireland since 2005¹⁰⁵. Such recent improvements in the economics of the wood supply chain are highly encouraging and should help woodland owners see the potential for investing in sustainable management of their own woods.

Whilst real timber prices are still considerably lower than their historical peak, in recent years prices have been rising: softwood sawlog prices have risen by around 17% (or 4% in real terms) over the last five years¹⁰⁶. This is being driven by an increase in the demand for wood for construction, fencing and fuel here in the UK. The quantity of softwood delivered directly for wood fuel is estimated to have increased by 62% in the UK between 2009 and 2010¹⁰⁷, and sawmills have gained a 40% share of the UK construction market¹⁰⁸, and more generally have benefited from growing global demand.

And yet, the UK remains one of the world's largest net importers of wood and wood-based products, with around 80% of wood used in the UK being imported¹⁰⁹.

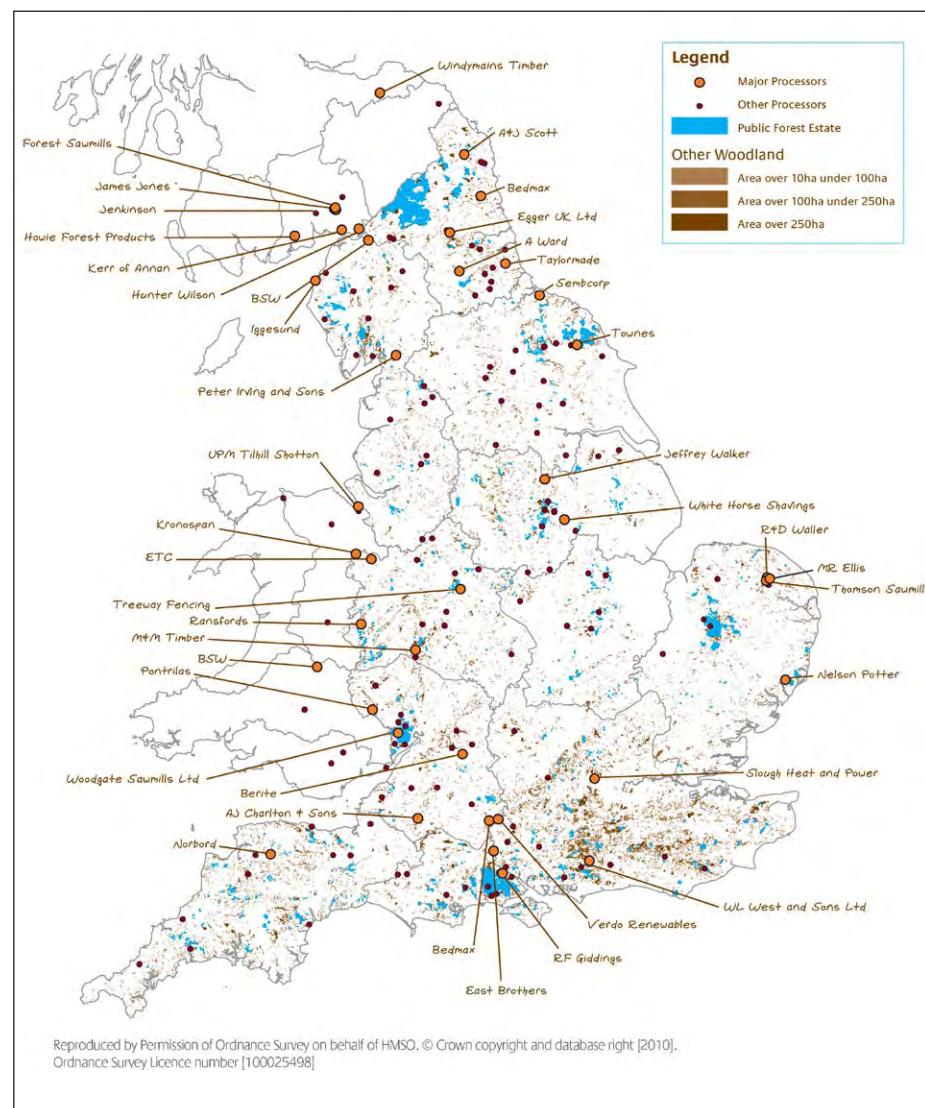
The increase in the value of and the positive outlook for UK timber is recent. However, the experience of woodland owners does not always reflect this and we are conscious that trends may reverse. Even where timber is produced for the market, we have heard that many woodland owners and managers rarely make a profit. Results from our survey showed that, for those that gave information about their financial position, only 15% considered their woodland profit-making as opposed to 37% that considered their woodland loss-making¹¹⁰. A continuing strong price for timber will encourage more woodland owners to sustainably manage their woodlands, delivering more timber and wider public benefits.

Although there are areas of the country where the supply chain for wood and timber is well-developed (see Figure 10), there are significant areas of woodland which have limited local markets for their timber. Many of our woods have been planted on steeper ground or on land with difficult access, and have limited infrastructure, and many more are too small for productive management to be viable. As a consequence, in many cases the costs of extracting and transporting timber from these woods means that they are not commercially viable at current prices.

Local woodfuel supply chains are beginning to be developed in some areas, but others lack connections between wood owners, and potential markets and infrastructure, such as wood chip storage facilities. In many cases more action is needed to bring more woodland into sustainable management, provide a route to market and increase demand through the installation of wood-fuelled heating systems. However, with each part of the process depending on the others, high levels of partnership working are needed to provide the confidence to invest.

This is a similar issue to that faced by the recycling industry, where Government intervention by the Waste and Resources Action Programme (WRAP) successfully supported key infrastructure development, such as a plastics plant, and provided loans to businesses, to transform the supply chain.

Figure 10: Timber processors



Based on data supplied by the Forestry Commission

Evidence: Rural employment and deprivation

Whilst the timber-based market is relatively small at a national scale, it may have an important role in local economies. The industry is dominated by small businesses, with 76% employing fewer than 10 workers¹¹; and over 40% of forestry economy jobs are located in rural areas¹². Recent analysis by Forest Services (the part of the Forestry Commission that currently delivers expertise, incentives and regulation) suggests that many of the most deprived rural areas in England have relatively high levels of private woodland cover¹³. A revitalised forestry industry will be well placed to create new jobs in areas where alternative employment opportunities are scarce.

Skills and opportunities

A revitalised forestry industry will not be achieved without ensuring an adequate and appropriately skilled workforce in the next decade. Skilled workers are urgently needed if the sector is to take advantage of green growth opportunities. Despite the positive outlook for foresters, businesses have difficulty recruiting appropriately skilled people¹⁴. The industry reports problems recruiting young people, managers with technical expertise, forest floor workers and machine operators. One of the barriers in tackling the skills issues is the lack of labour market information in England. The main problems are too few managers (usually HND or degree qualified), and too few forest workers with practical skills and experience from apprenticeships, or relevant vocational training. In addition, general business skills, quality control, technical skills and general land management skills are all in short supply, according to a report by England Forest Industry Partnership¹⁵.

There is a high level of self-employment in forestry – 44% of people are self-employed, compared to an average of 13% nationally¹¹⁶. As a result the level of training in the current workforce is low. This may discourage potential new entrants, who could perceive the sector as offering limited opportunities for development.

Productivity in forestry will increase as more jobs become available in the sector; current jobs are safeguarded, skill levels improve, profitability grows, and client bases are extended. The industry has recognised a skills gap and has developed the Forestry Skills Action Plan¹¹⁷ to address this, but support is required to engage the fragmented wood industry.

Recreation and tourism

Recreation, tourism and sport are also important sources of income for forest businesses. Opportunities range from small cafes, visitor centres and mountain bike hire, through to woodland campsites and sustainable holiday destinations. A study in 2003 found expenditure on forest-related day trips in England to be around £2 billion¹¹⁸. Shooting in woodlands is estimated to account for about 28,000 jobs in the UK with an approximate value of £640 million to the UK economy¹¹⁹. The contribution to local, and especially more rural economies, may be more significant than national statistics suggest. For example, it is estimated that the New Forest supports £400 million worth of tourist activity¹²⁰, the benefits of which are dispersed widely.

Our recommendations

Recommendation: We urge Government, woodland owners and businesses to seize the opportunity provided by woodlands to grow our green economy by strengthening the supply chain, and promoting the use of wood more widely across our society and economy. These and other actions should be set out in a Wood Industry Action Plan.

Recommendation: Government to ensure that development of the wood-based industries and technologies is a priority area for support by the Green Investment Bank, which will have £3 billion of capital to support investments that stimulate the green economy.

Recommendation: Local Enterprise Partnerships should work together to bid for funding support from the Regional Growth Fund, and other Government or EU funding sources, to invest in the wood industry supply chain. This would enable them to develop woodland enterprise zones in areas where there are opportunities for a revitalised woodland economy to help create jobs in rural areas.

Recommendation: Local Authorities should use their Local Plans to introduce a “Wood First” policy for construction projects to increase use of wood in buildings. They should also create a positive planning environment for sustainable wood and forestry businesses, as well as those based on woodland leisure and tourism, that should always enhance natural capital.



Trees and woods' role in climate change mitigation

Aspiration

We want the UK to play a leading role in developing incentive mechanisms that support multi-benefit tree planting for climate change mitigation. Such incentives would need to fully recognise the value of wood at all stages of its lifecycle.

Evidence

The carbon-friendly nature of wood products has been well analysed¹²¹ and we can broadly categorise a hierarchy of preferred wood use in relation to carbon (Figure 11). There is huge potential for using more wood. Its use in construction, for example, is much lower than in many other European countries¹²². A tonne of red brick requires four times the amount of energy to produce than sawn timber, whilst concrete is five times less carbon efficient, and steel 24 times. On average, using wood as an alternative to other materials for construction saves 0.9 tonnes of carbon dioxide per cubic metre¹²³. The UK timber industry has launched a "Wood First" campaign to encourage local authorities to develop planning policies which prefer the use of wood over less carbon-efficient building materials.

The evidence relating to forest carbon is complex: trying to predict the impacts of long-term climatic change, assessing carbon stocks versus flows and analysing the lifecycle impacts of wood products is not easy. But there are key findings that inform our recommendations.

Figure 11: Hierarchy of wood uses by carbon impact



Trees lock up carbon, acting as a carbon sink, and therefore effectively provide us with a “bank” of carbon. Currently England’s forest carbon sink compensates for less than 1% of total greenhouse gas emissions. Analysis has shown that woodland creation can be a cost-effective way of locking up carbon, so England’s forests could play a much greater role in meeting our future carbon targets. The benefits aren’t just whilst the trees are growing; carbon is also stored in wood products (furniture, particleboard and pallets) many of which have long lifespans. And, where the net carbon impact is positive, wood can substitute for alternative non-renewable fuel sources reducing our carbon impact as we burn the fuel. But there is an imperative to act now if forestry is to play its part¹²⁴.

Over the long term, maintaining production of managed UK conifer and broadleaf forests for wood and bioenergy which displaces non-wood products and fossil fuels, can result in lower total greenhouse gas emissions than leaving the wood unharvested. This can be true even with “neglected” broadleaf forests, where the stock of carbon locked up in trees is high. However, the right management choices need to be made to best deliver these carbon benefits¹²⁵.

Critically, as with all climate change mitigation action, woodland expansion and management must be undertaken using the principles of sustainable development. This means appropriate spatial planning, so that climate change mitigation action does not conflict with other environmental objectives, which together will form part of a low carbon and sustainable future for our natural environment.

The Woodland Carbon Task Force aims to help realise the potential of woodland in combating climate change and the Woodland Carbon Code has put in place a mechanism to capture the value of additional carbon sequestration. It is encouraging to see that there are around 60 registered projects around the UK¹²⁶ storing carbon. We endorse this work but want to go further to ensure that the carbon benefits of woods and trees are fully recognised and accounted for in decisions by both Government and private owners.

To ensure that England’s trees and woods, whether in public or private ownership, fulfil their role in climate change mitigation, we need to bolster the protection of the ecosystem services they provide. The value of these services to society needs to be fully reflected in public policy, but the value of the benefits must also be realisable by private owners, if it is to change behaviour and provide an impetus to woodland creation and management.

Forestry carbon markets are currently reliant on voluntary corporate social responsibility (CSR) investments by companies, although the recent announcement¹²⁷ of mandatory greenhouse gas emission reporting may help to broaden its scope. We need a shift towards a market mechanism that would be better integrated with international markets for carbon and to account for the benefits of wood throughout its lifecycle. We therefore welcome the EU proposals to develop forest carbon accounting methodologies¹²⁸ that take account of the broader carbon benefits when wood is used, for example, in furniture or buildings; and to consider the future integration of forest carbon into European targets.

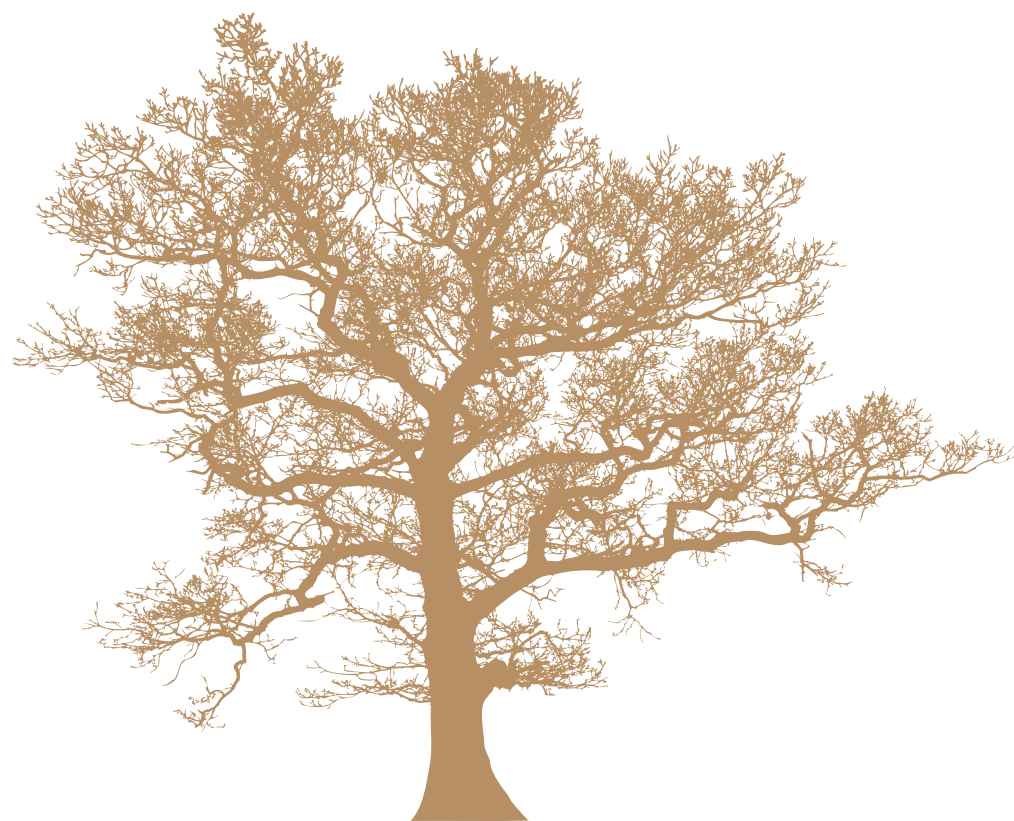


The recommendation below complements our proposals, discussed elsewhere, on increased woodland creation and management, the commitment to future research activity and increased use of forestry advisory and partnership services. Together these will be key to realising forestry's role in limiting the effects of climate change.

Carbon markets could offer good opportunities for financing the delivery of public benefits, but the current market price for forest carbon is insufficient to drive change.

Our recommendations

Recommendation: A policy approach to support the carbon price is needed. Government should establish a single recognised methodology to account for the full greenhouse gas benefits of using wood and timber products and permit its use as part of carbon accounting. Clear guidance should encourage the use of wood as a sustainable construction and manufacturing material.



Managing our woodland asset: the role of our public forestry organisations



D. Managing our woodland asset: the role of our public forestry organisations

This section covers the organisational arrangements needed to deliver our aspirations and vision outlined in the rest of this report. We recognise that leadership and support is critical for the huge opportunities in woodlands beyond the public forest estate to be realised. And we address how our vision for the public forest estate can be realised through a resilient, refreshed organisation that will focus on delivering the multiple public benefits from our woods and forests, over the long term.

An organisation to support a revived woodland culture

Aspiration

As we have outlined in Section C, our vision is for a major change in the way we view and value wood, trees and woodlands. We aspire to a woodland culture developing across England that values wood for all its benefits and fosters an understanding of the longstanding role of woodland management cycles. This culture and the resulting opportunities for landowners, together with the right policy, support and regulatory framework, can transform the landscape of woodland. Substantial benefits can be gained environmentally, socially and economically.

To enable this transformation, the evolved Forest Services (the part of the Forestry Commission that currently delivers expertise, incentives and regulation) needs to be on the front line. It will deliver Government policy, lead and champion the vision of revitalised multi-purpose woodlands delivering more for people, nature and the economy.

The evolved Forest Services will be one that recognises the traditions and skills we have inherited from the past, but that is driven by the needs and aspirations of today's society, and has a powerful vision for the future. It will do this in a way that is integrated with wider economic and environmental land management policy and delivery. It will use the ecosystem services framework to think and operate on a truly landscape scale, for instance in identifying new land for tree planting to reduce woodland fragmentation. It will champion the sustainable management and expansion of our woodland habitats. This new body will promote the multiple benefits of wood as a product, as well as stimulating partnerships and initiatives with land owners and businesses.

Evidence

Woodland owners we have met have spoken positively about the role of the current Forest Services organisation. The service is delivered by forestry specialists who apply their expertise to regulation of tree felling, implementation of the England Woodland Grant Scheme, and partnership working at local level to deliver forestry policy objectives. The fact that the same group of customer-focused people, with rounded knowledge and skills, provide all these functions appears to be effective and especially valued. But there are currently only 60 Woodland Officers active in the field, and 170 staff overall, so the service they provide is limited.

Forest Services also work closely with a variety of non Government organisations to help deliver environmental and social objectives. These partnerships help tackle important issues such as wildlife declines, access to woodlands, education and the provision of other benefits to society.

We have seen some great examples of successful woodland partnerships that are fostering woodland-based entrepreneurship. In the Wyre Forest we heard about the Heartwoods project, which is helping to build the local market for wood products and bringing woodlands across the West Midlands back into active management. And we also met the Wyre Forest Partnership which is developing the local wood fuel market and establishing Wyre as a brand for high quality woodland produce.

We also heard about the Cumbria Woodlands project which has been helping to create woodland businesses since 1991, creating high quality furniture and other products from local timber.

Forest Services and some Local Enterprise Partnerships work together in England's woodland areas to create jobs by developing markets for wood and wood thinnings, including low carbon wood fuel, and raising awareness of the benefits of woodland management. These local initiatives provide significant opportunities for realising the full value of woods and forests. However, there remain significant regional disparities in processing capacity and therefore markets for wood and wood products. We believe there are far greater opportunities to be exploited.

We believe that the current Forest Services is woefully under-resourced for the vital job ahead envisaged by the Panel. This leads the Panel to recommend a significant increase in resourcing over time, leading to an influential body with its own organisational persona.

A new organisation

The evolved Forest Services organisation will be delivering Government forestry policy and regulation. As we outline below, we believe it should be structured to focus largely on the non-public forest estate, but will also be the source of appropriate regulation, guidance and stimulus for the public forest estate. The evolved Forest Services organisation will champion sustainable multi-benefit forestry by aligning economic use with wider public benefits. It will play a key role in delivering the recommendations outlined in this report across ownership boundaries.

This crucial job needs to be done by a high profile organisation whose focus is on working with woodland owners and managers, wider

businesses and organisations, and stimulating a deep public interest in, and engagement with, wood and woodlands. We believe this profile will be best achieved by a body that is separate from the public forest estate, but working closely with it.

We also believe that while there would be benefits to incorporating the delivery of forestry policy into a wider landscape delivery body, given the specialist and technical nature of forestry issues, these would be less than they might appear, and would be outweighed by the benefits of a body focused on delivering the benefits from woodlands and forestry, in partnership with others working across the wider landscape.

A stronger organisation will require additional funding. Forest Services currently spends £20 million on protecting, improving and expanding England's woodland, excluding grant payments. Our recommendations for an evolved Forest Services require, as a first step, additional early investment to "pump-prime" the capacity of private and third sector woodland owners and businesses to grasp valuable opportunities now and going forward. This investment would make a step-change in the ability of private and third sector woodland owners to get the most from their woods, and in particular, to create and use the partnerships that could make woodland management profitable. We believe this investment will pay back in public benefit terms many times over.

Longer term investment costs will depend on a range of factors, many of which are unpredictable. However we believe a relatively small investment will have a significant and beneficial impact for England's woodlands. We estimate that increasing the amount of woodland in sustainable management from 50% to 80%, will require additional investment of £7 million per year between now and 2020, to set us on a trajectory towards achievement of this target, based on current costs. Part of this will be to fund new activities, such as market development and catalysing business partnerships. A similar amount is likely to be required on top of this for managing grant funding. Beyond 2020, the evolved Forest Services must continue to be resourced in proportion to its role in increasing the value of woods, forests and associated economies, and the need for advice and regulation¹²⁹.

We have not modelled the resource needed to support 15% woodland cover by 2060, as this could be achieved in a number of ways, for example, refocused agri-environment schemes, corporate social responsibility, philanthropy, investment by charities, and in the longer term, through carbon or ecosystem markets. On the basis of past experience, we emphasise that without significant new market opportunities, achieving our target of 15% woodland cover by 2060 is likely to require considerably greater investment than the woodland management target.

Organisational features

The purpose of the evolved Forest Services organisation will be to promote a woodland culture which will deliver enhanced public benefits through expansion and increased sustainable management of England's trees, woods and forests. Its functions will be to:

- a. Advise, facilitate and champion a woodland culture;
- b. Regulate and implement forestry standards;
- c. Develop and deliver incentives and other mechanisms to provide social, environmental and economic benefits from woodlands;
- d. Provide forestry expertise to Government;
- e. Promote wood as a product;
- f. Be an exemplar in delivery, and promote best practice.

Advise, facilitate and champion

We see an enhanced advisory role as key to delivering our vision. We know that there are many potential benefits from bringing more woodland into management but the relationship between different forms of management action and the resultant benefits to wider society is complex. This means that there is no single management regime that can be said to be 'best' for enhancing social, environmental and economic objectives¹³⁰. The need to account for both site-specific factors and the diverse aspirations of woodland owners means that advice will be a key element to increasing the overall woodland area under management.

The evolved Forest Services will therefore continue to work in partnership with the forestry and land management sectors, proactively offering every woodland owner access to initial advice from a

professional forester; (prioritising those with woods greater than five hectares in size) on sustainable multi-benefit woodland management. This should aim to increase the area of woodland with a UK Forestry Standard compliant management plan, from around 50% to 80% of the total, over about the next ten years.

Initial analysis undertaken for the Panel has emphasised the need for a greater understanding of the value of woodland management to society. The results indicate the potential for sizeable net social benefits from sites that deliver enhanced access near population centres and biodiversity on priority sites. The analysis also suggests that the costs of providing advice to inactive owners need not be large, and could be targeted towards those sites providing the greatest benefit to society¹³¹

The evolved Forest Services will work with the timber sector, local and national businesses and groups to facilitate the development of markets for wood and forest products. It will champion the sector and a revitalised woodland culture.

The evolved Forest Services will work in partnership with woodland businesses, landowners, charities, schools and community groups. It will bring different interests together, brokering and supporting new ventures to build social, natural and economic capital. It will promote sustainable management of our forest ecosystems by encouraging more planting, promoting wood as a product and advocating the benefits of bringing more woodland into sustainable management.

Regulate and implement forestry standards

Smartly implemented regulation has a key role to play in meeting international and national commitments on sustainable forestry, biodiversity conservation and the landscape scale changes we are proposing. This means reducing unnecessary burdens where possible whilst maintaining sufficient checks and balances to protect and grow the nation's natural capital and all the benefits we derive from it. The Forest Regulation Task Force made recommendations on this in their report to Government and this work is being taken forward.

As we make clear in Section C, wherever and whenever woodland management takes place, it must conform to the guidance in the UK Forestry Standard as a minimum, and Forest Services has a key role in ensuring this happens.

Develop and deliver incentives

As well as delivering grant programmes such as the England Woodland Grant Scheme, the new organisation will work with woodland owners to enhance local wood supply chains. It will identify and help develop opportunities for woodland owners to capture some of the value of the environmental services they can provide by means of new ecosystem services markets. In doing this it will work with other organisations such as those implementing agri-environment schemes.

In advance of new incentive structures for ecosystem services, this organisation should be promoting woodland expansion and sustainable management as a means of providing public benefits. It should be promoting carbon storage by businesses as part of their Corporate Social Responsibility activity.

Forestry expertise

The evolved Forest Services will use its knowledge and expertise to deliver comprehensive advice and forestry regulation to private and public woodland owners. It will work closely with other parts of Government, including other land management delivery bodies, so that farmers, in particular, receive joined-up advice. It will work with landowners and woodland initiatives to develop improved programmes of outreach and support and will devise and deliver targeted grant funding. The evolved Forest Services will have a key role in delivering our proposed target for increasing the proportion of sustainably managed woodlands from 50% to 80% over the next ten years, and woodland cover from 10% to 15% by 2060. It will work with landowners to promote sustainable woodland expansion and tree planting where it will be of greatest benefit, and to encourage appropriate management.

The evolved Forest Services will work with the forestry sector and other stakeholders to support the sustainable use of timber and its

by-products. It will promote wood and timber products as sustainable choices for local consumers, the building industry, local renewable energy, and new enterprises based on woodland products.

In all its activities, we expect the evolved Forest Services organisation to be an exemplar and to promote best practice throughout the wood supply chain.

In due course, as the woodland economy grows, the need for Government support should decrease. In the interim, the services provided by the organisation should be delivered in the most cost-effective way available. If better value can be achieved, through the private and third sectors, then this should be exploited where appropriate. In the short-term, however, this is likely to be additional to the focused activities of the evolved Forest Services organisation.

Our recommendations

Recommendation: Forest Services should evolve to become a public body with duties, powers and functions to champion, protect and increase benefits from trees, woodlands and forests that are good for people, good for nature and good for the green economy. Relevant duties currently placed on the Forestry Commission and its Commissioners should be maintained in the evolved Forest Services organisation.

Recommendation: In carrying out these roles, the evolved Forest Services will pioneer the Ecosystem Services approach. It will work with Government and its researchers as they value the full range of services our woodlands deliver. It will use this evidence to pull in and target resources to deliver the best social value from woodland creation and sustainable woodland management in England. It will work with Government, landowners and others to find new ways for owners to profit from the value their woodlands generate. Its activities will include working with other environmental bodies, organisations and businesses to enhance biodiversity and improve ecosystem services across landscapes.

International and UK-wide co-ordination of expertise and research

Across England, Scotland and Wales, Forestry Commission GB also undertakes research and gathers statistics relating to UK trees and woodlands. It is a source of international woodland and forestry expertise, is guardian of the UK Forestry Standard and it regulates to protect trees and woodland from pests and diseases.

These activities are hugely important to forestry in all three countries and equip the UK Government to participate in international negotiations and processes relevant to forestry, climate change and biodiversity. The UK Forestry Standard enables the UK Government and devolved administrations to meet their international, as well as domestic sustainable forestry commitments, flowing out of the Rio Earth Summit¹³².

As discussed above in Section C2, we know that the pressures on our trees, woods and forests are growing, with increased incidence of pests and disease bringing huge risks for our environment and the economy. Keeping our woodlands in good health and resilient to these and other pressures, such as air pollution and climate change, has to be a key priority – because otherwise we place at risk all the other benefits that flow from them. The scientific evidence to underpin public forestry policy and Government advice to woodland owners is currently provided by Forest Research, a body which serves Scotland, Wales and England, under the umbrella of Forestry Commission GB.

However, the GB level picture is evolving. The Welsh Government is consulting on the creation of a single body that will deal with natural resources in the round, and the Scottish Government is also considering its position. This provides further impetus to look at what capacity needs to be retained at GB level, and how these activities can be organised and delivered most effectively in the future.

We believe there should continue to be a cross-border forestry standard based on international best practice. There should continue to be oversight of plant health issues and research and knowledge transfer for sustainable multi-benefit forestry. There should also be oversight of international commitments at GB level. There should be capacity to provide technical advice and expert support, including inventory and statistics, to Ministers across the administrations, and to support the role of the UK as a leader in forestry on the international stage.

Recommendation: That the new organisational landscape should make specific provision for international and cross-border arrangements, working closely with the devolved Parliaments on sustainable multi-benefit forestry implementation, research and in the international arena.



Managing the public forest estate

Aspiration

We believe there is an important continuing role for a national public forest estate in England, to secure benefits for the nation, a role which will evolve to reflect changing aspirations and wider challenges like climate change. We have concluded that if the estate were to be split up or disposed of, England would lose unique and irreplaceable benefits for little or no financial gain, even in the short term. Therefore we believe the public forest estate must be retained in public ownership.

Historic evolution of the public forest estate

Since the Norman Conquest the State has been involved in protecting, creating and managing woodlands, and many of our best loved places are these Crown Forests such as the Forest of Dean and the New Forest. These forests demonstrate where trees, woods, forests and other habitats come together to provide great benefits. The Forestry Commission, England's current State forestry organisation, was established in 1919 to secure a supply of timber. However, in the 93 years since its creation, the use of those forests has evolved to reflect the social, environmental and economic changes during that time.

Today, through the public forest estate, Forest Enterprise England (the part of the Forestry Commission that manages the public forest estate) is the single largest provider of outdoor leisure and recreation in England; the single largest timber producer; and has within its gift the single largest opportunity for habitat restoration. The 42,000 responses to our call for views showed how much people value the large, accessible areas of countryside of the public forest estate.

We see further potential for the public forest estate to deliver more benefits. This means that the body's remit needs to empower it to deliver its full potential public value and for this to be reflected in its organisational framework. A new mandate must make explicit the public benefits to people, nature and the economy that the public forest estate delivers. Its finances must be sustainable.

Evolved organisational models for the public forest estate

Looking to the future, we have drawn from a wide variety of organisational models in considering how the public forest estate should be managed and how its relationship to Government should be defined. Investment in and management of forests requires a very long-term view and financial security, as actions taken now may only prove their worth in 50-100 years. There is a need to retain democratic accountability in managing an asset that is so valuable to our society and is subject to a wide range of competing needs. Taken together these factors mean that neither wholesale sell-off to the private sector, nor wholesale management by the charity sector, were attractive options.

Some of the models we have looked at have attractive elements that we have drawn on here, as they provide the accountability structure that will involve Government and stakeholders, but also the financial freedoms which we feel are necessary for the economic model to be sustainable.

The particular characteristics and objectives of the public forest estate will require a bespoke organisational model. Below, we define the characteristics of the public forest management organisation that we believe will give it the freedoms and incentives to invest and deliver multiple long-term benefits from the public forest estate.

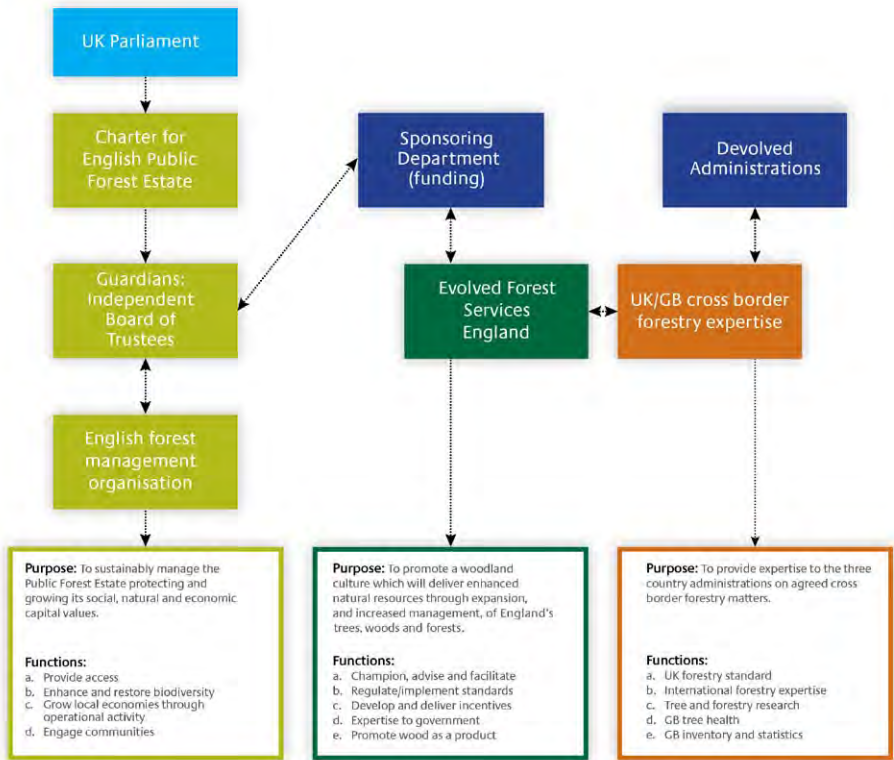
Our recommendations below also stem from the current difficulties of planning long term, with the annual balancing of the public forest estate accounts, that Government accounting rules have required up to now. This inability to carry over cash balances encourages short-term and often perverse decision making. Perhaps more seriously, it hampers the development of the long-term, strategic mindset that the organisation needs. Some progress has recently been made on this score, but this must be consolidated and extended as the organisation builds its reputation for financial management.

Similarly, the new model must remove the significant uncertainties created by the vagaries of Parliamentary cycles, with short-term funding cuts damaging a body that seeks a long-term investment perspective. Woodlands are assets that pass from one generation to the next. For England's national woodlands to flourish, policy and investment decisions need to be linked to woodland, rather than electoral, cycles.

Within this new framework the public forest management organisation should have financial freedoms, and a culture which engenders innovation and improvement, strong and visible outward local and national accountability mechanisms, and a transparent governance structure and decision-making processes.

In diagrammatic terms the governance of the new public forest management organisation would be as shown in Figure 12, which also illustrates the relationship between it and the proposed evolved Forest Service organisation and cross-border forestry expertise.

Figure 12: Proposed governance for England public forestry organisations and cross border relationships



The organisation should generate revenues and be given additional financial and commercial freedoms, in line with its core purpose. This could be achieved by giving the public body features such as Trading Funds¹³³, and legislation that allows the public body to borrow against its assets.

The public forest management organisation will be accountable to the nation for its use of public money, delivery of national and international commitments and to local communities for meeting their needs and aspirations. In developing the new public forest management organisation, stakeholders and community groups should be encouraged by Government to input their ideas, to embed national and local accountability into the fabric of the new organisation. It will work collaboratively with the evolved Forest Services offering partnerships and advice to the managers of woods and forests outside the public forest estate.

Overall, we believe that retaining public ownership of the public forest estate will best preserve and protect the long-term benefits for the nation. It needs freedom from short-term political interference to take a balanced and impartial view of the distribution of resources and benefits across the estate. We believe this makes a clear case for a public body, accountable to Parliament rather than Ministers, with a clear long-term Charter and funding.

However Government decides to construct the new body, our overriding concern is to ensure that maximum public benefit is gained through public ownership and accountability.

Our recommendations

Recommendation: We propose that the public forest estate should remain in public ownership and be defined in statute as land held in trust for the nation. A Charter should be created for the English public forest estate, to be renewed every ten years. The Charter should specify the public benefit mission and statutory duties. It should be delivered through a group of Guardians, or Trustees, who will be accountable to Parliament. The Guardians will oversee the new public forest management organisation evolved from Forest Enterprise England.

Recommendation: The new English public forest management organisation will have statutory duties, powers and functions, set by the legislation that creates the Charter. These will expand on those currently placed on the Forestry Commission and Commissioners. Its main purposes will be:

- a. To sustain and maximise the public value of the estate, in terms of wildlife, access, recreation, education and cultural heritage;
- b. To maximise the natural capital value and secure sustainable yields from the asset of the forest estate over the long term including by:
 - i. being an exemplar of sustainable woodland management including production of high quality timber;
 - ii. being an exemplar in conservation of wildlife¹³⁴, woodlands and associated habitats;
 - iii. being an exemplar in large-scale open habitat and ancient woodland restoration across the public forest estate;
 - iv. promoting quality access to woodlands for a wide range of activities consistent with the other purposes;
 - v. engaging communities in developing and achieving the estate's goals;

- vi. expanding the estate where this improves the capacity of the estate to deliver more public benefits, and in consultation with local people;
- vii. working in partnership with others to grow local woodland economies and act in circumstances of market failure where the benefits of doing so outweigh the costs.

Recommendation: The public forest management organisation should be explicitly tasked, and incentivised, to get as much value as possible from its assets, in order to invest even more in the public benefits they deliver. This should include the ability to buy and sell land where this serves those wider purposes. This should not be at the expense of its core purpose of sustaining and enhancing the public value of the estate. Any development project or land sale must fully justify any environmental or social risk or cost by enabling more valuable investments, for example by creating woodlands close to where people live. Decisions on major projects and land sales should have stakeholder consultation at their heart, and where judgements are finely balanced, the Guardians (led by their mandate), should be involved.

Recommendation: Within the ten year terms of its charter, the public forest management organisation will be run independently from Government. It will not be subject to Government direction except in matters where it delivers international obligations on behalf of Government, or in cases where Parliament feels the body is acting outside, or failing to deliver, its "mandate". It will be able to form partnerships and demonstrate good practice beyond its own estate. The Charter will need to be accompanied by a framework agreement to ensure clear accountabilities and responsibilities.

Recommendation: The financial accounts will be scrutinised by the National Audit Office (NAO) in the normal way. In addition, we recommend the Natural Capital Committee, or successor, advise the NAO on how to use the natural capital approach to judge whether the best management decisions and investments are being made to meet social, economic and environmental goals, and whether the natural capital is being grown sustainably. This will draw on the balance sheet of economic, social and environmental capital based on the comprehensive valuation we recommend.

Recommendation: The new public forest management organisation should enable stakeholder consultation on its annual corporate plan. At a local level the public forest management organisation should see consultation and partnership with friends' groups, charities, businesses and others as central to its way of working, benefiting from their experience and helping to draw in additional resources to support local projects. This could include community management and partnership agreements.

Financing the public forest estate: Value and opportunities for the future

We have seen that our woods and forests are a vast resource, delivering a large and varied set of economic, social and environmental benefits which, as a society and as reflected by successive Governments, we do not yet properly appreciate and value. To develop a sustainable economic model for the public forest estate, we urgently need to account for this value, to demonstrate properly what the public forest estate delivers, and what we lose if we fail to invest in it.

The scale of the public forest estate's value follows from its multiple and diverse benefits. However this diversity is also the reason why we underestimate the value, in particular by tending to focus on those benefits that are marketed, or at least are immediate and obvious, such as timber and benefits from recreation. To assess the financial and natural capital value of the estate, and the potential for different levels of investment, we need to set out the full range of ecosystem services and the resulting direct, indirect and long-term benefits.

We believe the public forest estate represents a golden opportunity to make low-cost investments now for priceless future rewards. We need to set out the potential for community engagement, recreation and exercise and the well evidenced benefits to physical and mental health that follow, with associated reductions in health service costs. Similarly, we need to value the opportunities to engage children and young people, including those at risk of offending, in woodland activities, and recognise the positive impact on life chances and crime and the associated cost reductions. We also need to take account of a range of environmental opportunities that could make significant contributions to the restoration of our ecosystems and, with further research, significantly reduce the cost of dealing with both climate change, and pests and disease.



This valuation, together with evidence on how much additional revenue can be generated from the estate, will demonstrate how much, and where, we need to invest in the public forest estate to get the best value for money. This epitomises the Natural Capital and Ecosystem Services approach outlined earlier, with its emphasis on comprehensively assessing our ecosystems' benefits and the risks and costs of losing them. This is the right approach and we urge the Government to follow it robustly in assessing future investment in the public forest estate.

Although the public forest estate is only 18% of our national forest cover, the evidence of the unique set of public benefits it provides, and the public strength of feeling for them, underlines the imperative to protect and enhance our public forests. The public forest estate delivers public benefits that go beyond those we anticipate from private woodland owners, for instance with over 40% of accessible woodland being in the public forest estate. This goes some way to explain the passionately protective reaction of communities to the changes proposed by the Government in 2011.

Evidence: Value

The public forest estate costs more to run today than it earns in revenue, and constraints on Government finances are putting pressure on its public funding. The estate has been subject to increasing costs without additional matched funds as public access and services have increased and international biodiversity commitments have been delivered. Together this has placed more pressure on the net costs of managing the estate. Despite significant efficiencies in the core business this has resulted in a structural funding gap, leading to dependence on short-term Government funding and, recently, on financially unsustainable land sales. This situation, and the resulting uncertainty, must be resolved as part of the reform of the public forest estate.

The public forest estate continues to increase its cost base by increasing the benefits it delivers. High quality recreation; restored ancient woodland, heathland and other habitats; new woodlands created in places which yield the best benefits for people, nature and the economy, require capital investment and ongoing expenditure, which is currently not made available.

A study by EFTEC¹³⁵ estimated the non-market public benefits generated by the public forest estate in England at around £350 million. Adding the timber and other income brings the value of total market and non-market benefits generated by the estate to around £400 million per year.

Currently it costs £72 million annually to manage the English public forest estate, and funding comes from:

- £52 million from timber sales, car park fees, leisure businesses and other commercial activities;
- £12 million from Government funding;
- £8 million from land sales, currently suspended.

So Government funding for the 250,000 hectare English public forest estate is around £20 million in 2012/13. For comparison, £160 million was allocated by Government for work to dual a 9km stretch of the A453¹³⁶.

Total benefits are therefore around 6 times as valuable as the £72 million spent annually to sustain the estate, and around 20 times greater than the £20 million of net public investment. This net public funding is equivalent to only 90 pence per household each year, or 38 pence per person.

The benefits included in the EFTEC study are access and leisure, education and research, climate change adaptation and mitigation and biodiversity. They don't include the value of people's ability to connect with nature, the preservation of historic customs and traditions, or the longer term health and other social benefits we touched on above.

This annual funding is a very small amount to pay for the services that are delivered, and we fully believe that if the public benefits that the estate provides were properly recognised and accounted for, continued investment by Government would be guaranteed. We discuss funding options below.

Evidence: future funding

We want the public forest estate to build on its existing expertise in sustainable forestry to generate significantly increased levels of public benefits. This will increase capital and ongoing costs, but these costs are hugely outweighed by the benefits. The cost of not investing is far greater for future generations.

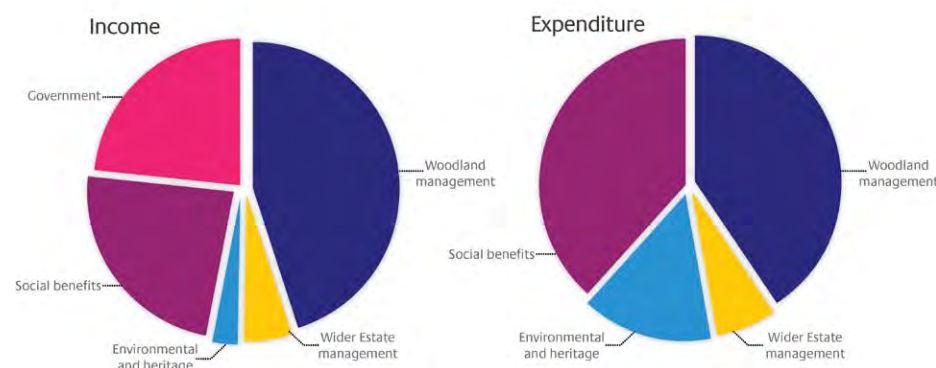
But the current funding model is inadequate. Forest Enterprise England has been forced to make ad hoc land sales each year to stay afloat, bringing in limited funds but greatly eroding the value of the asset. And without the changes we are proposing, the financial situation will get worse.

The evidence shows that investment in the public forest estate provides good value for money, but that the restrictiveness of the current business model does not allow strategic financial planning and investment.

Over the past few decades Forest Enterprise England has progressively dealt with funding cuts, leading to improved efficiency, with much of the commercial work outsourced, though there may be scope to consider more. Further funding cuts are now envisaged in the areas most valued by people: learning and education programmes, community engagement, input to habitat management for wildlife conservation, staff time to engage with the public. While we believe that Forest Enterprise England will continue to look for further efficiencies, we have seen no evidence that it is possible to reduce costs significantly around currently commercial activities without reducing revenues. That said, we consider that, with new financial and revenue-earning freedoms, the public forest estate should generate more revenue from its assets.

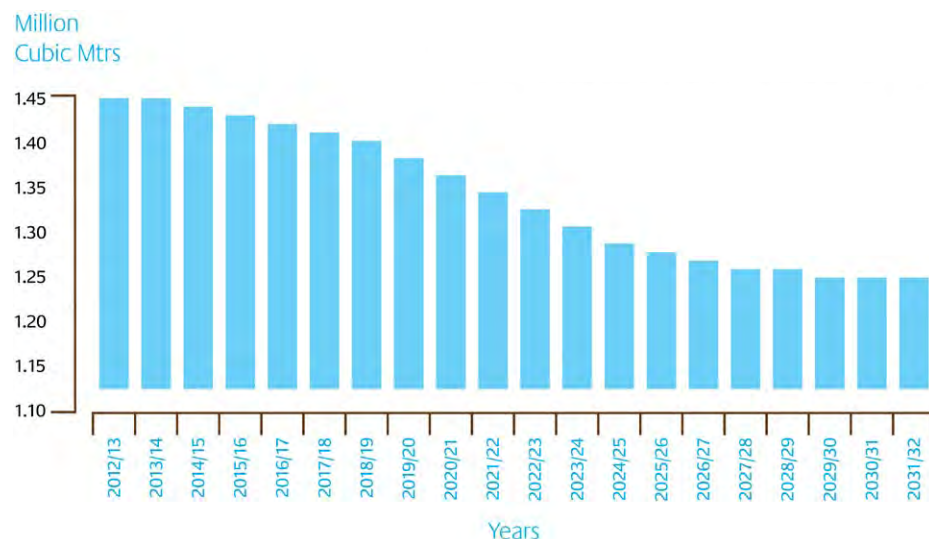
The static situation is shown by the following pie charts:

Figure 13: Public forest estate income and expenditure 2012/13



The public forest estate's direct timber income is also set to reduce over time, as plantations created 40-50 years ago are harvested and more of the estate's portfolio comes to consist of land that is not, or is only partly, dedicated to timber production. This will lead to an overall reduction in timber volumes, as shown by the graph (Figure 14). By 2030 the gap between costs and revenues could increase annually by around £7 million¹³⁷. If timber prices rise, the overall effect on revenue may be reduced. However, a potentially significant factor that is not reflected in these figures is the possible impact of disease which may damage trees and take them out of the timber market.

Figure 14: Public forest estate timber volume forecast



In addition, net funding of the public forest estate in recent years has not covered depreciation of capital assets, including roads and visitor centres, and Forest Enterprise England estimates that a further £4 million annually is needed each year to cover depreciation. Where assets have been invested in and maintained, it has been through grant funding from other parts of Government such as the former Regional Development Agencies. There is now no clear source of comparable capital funding. The public forest estate's funding model needs to ensure that capital assets that are essential for forest management, and facilities for visitors, can be adequately maintained.

Even under the current business model there is still scope to increase the financial value delivered by the estate, but it is not straightforward. Ventures such as mineral extraction, car parking fees and, renewable energy, could help fill the £8 million shortfall in income. However many of these are likely to be politically contentious, and some may therefore not go ahead.

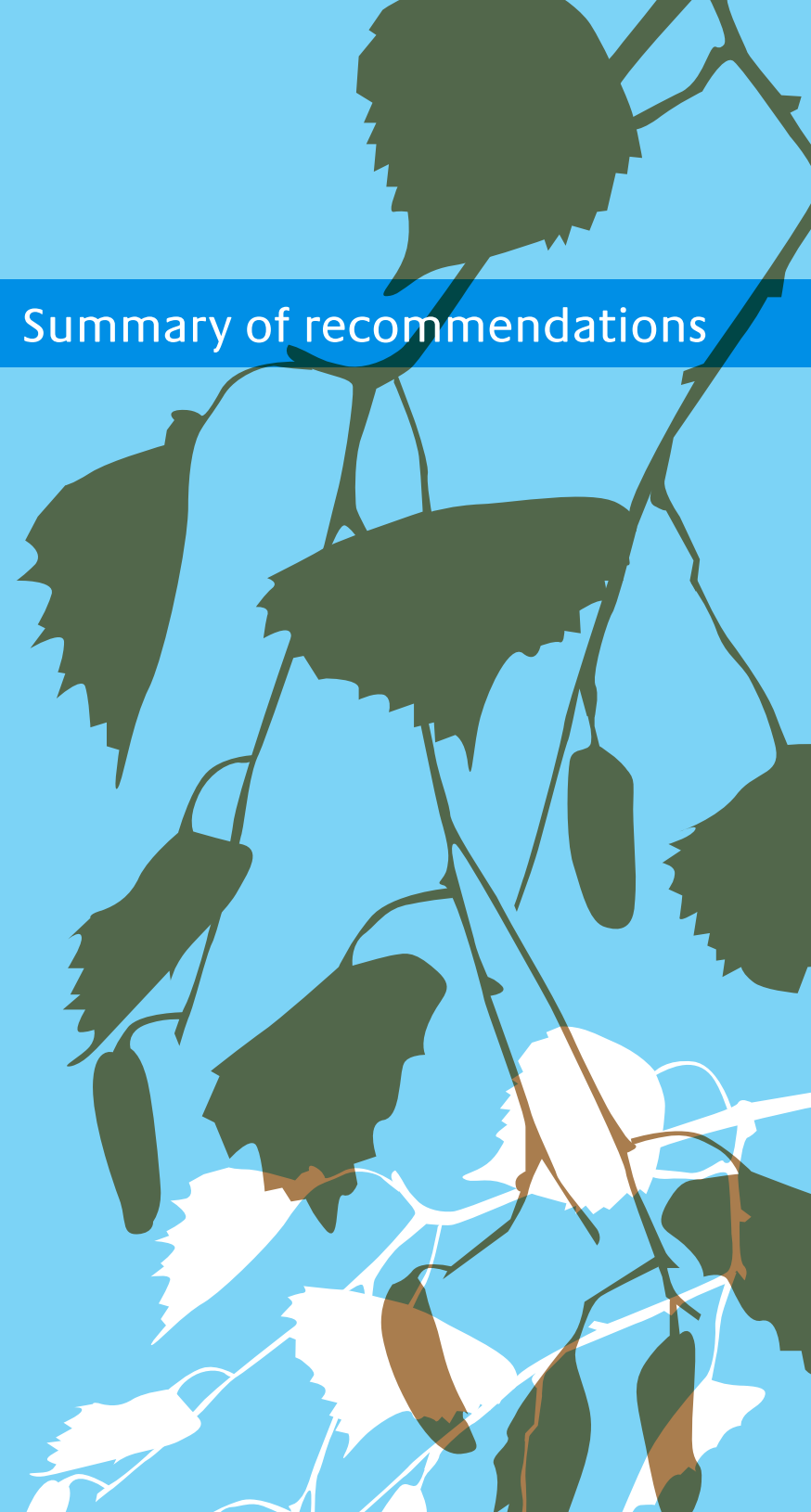
As of this year (2012), the public forest estate needs around £22 million net funding to maintain the estate's capital value and sustain the current level of benefits over time. This would enable both the delivery of non-market benefits and the maintenance of capital assets (at around £4 million). The total requirement could rise by an additional £7 million over the next 20 years as timber volumes fall. The latter factor may be compensated for by the potentially controversial non-timber, commercial developments we mention above, of up to £8 million, and rising timber prices. We believe it is important for the managers of the public forest estate to be able to explore appropriate new funding streams where there is a net benefit to the total value of the estate including its social and environmental value.

Enabling and incentivising the organisation to operate with a more entrepreneurial mindset, including by bringing in the necessary business skills, will help increase the level of investment in public goods. The existing organisation has already started to do that, and we would expect to see new thinking on the potential for new income.

The current funding model is therefore unsustainable, with Forest Enterprise England having to take short-term decisions that compromise the long-term aspirations we outline here. The move to the new structures and funding models we recommend is therefore urgent, as are measures to sustain the organisation over the short term while the new organisations are established. The cost to society and future generations of not making appropriate investments now is far greater than the relatively small level of public funding required. We fully believe that if these benefits were accounted for on a natural capital balance sheet then there would be no question over continued – indeed increased – investment by Government.

Recommendation: Ahead of any long-term funding arrangements, some financial breathing space should be provided for the existing organisation to enable it to make strategic (rather than emergency) operational and investment decisions. We want to see the current level of benefits from the public forest estate continue to be delivered without it being forced to sell land to balance the books.

Summary of recommendations



E. Summary of recommendations

A woodland culture for the 21st century

Recommendation: We urge society as a whole to value woodlands for the full range of benefits they bring. We call on Government to pioneer a new approach to valuing and rewarding the management, improvement and expansion of the woodland ecosystems for all the benefits they provide to people, nature and the green economy.

Recommendation: Government as a priority needs to adopt policies, and encourage new markets, which reflect the value of the ecosystem services provided by woodland. These include carbon storage, flood protection, biodiversity and habitat provision, and wider ecosystem services. In doing so, it should build on advice from the Natural Capital Committee¹³⁸.

Trees and woods: good for people

Recommendation: The work of community groups and woodland initiatives should be supported by the evolved Forest Services organisation (see Section D) through grants and other support, and by the public forest estate management organisation engaging with local communities across its whole estate.

Recommendation: That Local Health and Wellbeing Boards implement their public health duties by investing in local access to nature and woodlands.

Recommendation: Government should produce an action plan to deliver the Natural Environment White Paper's recommendations on reconnecting people and nature. Education authorities and early learning centres should ensure every child has an element of woodland-based learning that will, for example, encourage woodland owners to create a partnership with a local school.

Recommendation: Government and other woodland owners to give as many people as possible ready access to trees and woodlands for health and well-being benefits – this means planting trees and woodlands closer to people and incentivising more access to existing woodlands.

Recommendation: Measurably increase the quantity and quality of access to public and privately owned woodlands, by incentivising provision through a combination of paths or open access, particularly where this delivers greatest public benefit; and by:

- Government seeking to increase significantly the population with access to a wood within close proximity of their home. Progress in meeting this ambition to be reported regularly, using the criteria in the Woodland Access Standard.
- Providing a single web gateway for information about access to woodlands open to public visits.

Recommendation: Planning policy and practice should:

- Ensure woodland creation, tree planting and maintenance is part of the green space plan for new commercial and housing development.
- Integrate tree and woodland strategies into Local and Neighbourhood Plans.
- Encourage local authorities to look creatively, and across boundaries, at the use of S106 agreements, biodiversity off-sets and particularly the Community Infrastructure Levy. These levers could produce green space schemes, including trees and woodland, that make a significant difference to the landscape as a whole.
- Lead to more Local Plans encouraging woodland-based businesses, including those based on leisure and tourism, that are appropriate to their location and enhance natural capital.

Trees and woods: good for nature

Recommendation: Government to ensure that land use creates a coherent and resilient ecological network at a landscape scale, by integrating policy and delivery mechanisms for woods, trees and forests in line with the principles set in the “Making Space for Nature” report.

Recommendation: Government funding through the Common Agricultural Policy (CAP) to ensure that incentives for woodland management and creation are integrated with agricultural incentives, to achieve improved ecosystem outcomes on a landscape scale. Alongside this refocusing of CAP (2013-2020), we urge that grant schemes, such as the England Woodland Grant Scheme funded through the Rural Development Programme for England, should continue to be available to incentivise woodland expansion and management and other outcomes that are good for people, nature and the economy.

Recommendation: Government, working in partnership with the forestry and land management sectors, should proactively offer every woodland owner advice on multi-benefit woodland management, prioritising woods greater than five hectares, with a view to increasing the area of woodland with a current UKFS compliant management plan, from around 50% to 80% of the total, over about the next ten years.

Recommendation: Government should reconfirm the policy approach set out in the Open Habitats Policy and Ancient Woodland Policy (Keepers of Time – A statement of policy for England’s ancient and native woodland)¹³⁹. This should be supported through incentives to private woodland owners and a refreshed commitment to delivery on the public forest estate.

Recommendation: Local Nature Partnerships and Local Enterprise Partnerships, working with Forest Services, should identify:

- and promote landscape scale initiatives for bigger and better connected habitats, with greater resilience to climate change;

- and promote opportunities for greater local access;
- and promote opportunities to expand the production of timber;
- trees and woods in need of better management, and areas which require woodland expansion to deliver ecosystem services;
- woodland habitats that warrant greater protection, and work with Natural England to secure these as Sites of Special Scientific Interest; and
- those parts of forests in need of restoration to nationally important habitats¹⁴⁰.

Recommendation: Planning policy and practice should:

- Reflect the value of ancient woodlands, trees of special interest, for example veteran trees, and other priority habitats in Local Plans, and refuse planning permission for developments that would have an adverse impact on them.
- Encourage local authorities to take professional forestry and aboricultural management advice where planning applications affect trees and woodlands.

Recommendation: The National Forest Inventory to complement annual woodland planting statistics by recording actual progress towards net increase in woodland cover; and:

- include a report on extent of woodland habitats, including specifically ancient woodland, which should inform reviews of policy, such as SSSI designation.
- include a record of open habitat restoration from woodland.

Recommendation: Government to commit to an ambition to sustainably increase England’s woodland cover from 10% to 15% by 2060, working with other landowners to create a more wooded landscape.

Recommendation: Government should speed up delivery of the Tree Health and Plant Biosecurity Action Plan by additional investment in research on tree and woodland diseases, resilience and biosecurity controls.

Trees and woods: good for the green economy

Recommendation: We urge Government, woodland owners and businesses to seize the opportunity provided by woodlands to grow our green economy by strengthening the supply chain, and promoting the use of wood more widely across our society and economy. These and other actions should be set out in a Wood Industry Action Plan.

Recommendation: Government to ensure that development of the wood-based industries and technologies is a priority area for support by the Green Investment Bank, which will have £3 billion of capital to support investments that stimulate the green economy.

Recommendation: Local Enterprise Partnerships should work together to bid for funding support from the Regional Growth Fund, and other Government or EU funding sources, to invest in the wood industry supply chain. This would enable them to develop woodland enterprise zones in areas where there are opportunities for a revitalised woodland economy to help create jobs in rural areas.

Recommendation: Local Authorities should use their Local Plans to introduce a “Wood First” policy for construction projects to increase use of wood in buildings. They should also create a positive planning environment for sustainable wood and forestry businesses, as well as those based on woodland leisure and tourism, that should always enhance natural capital.

Recommendation: A policy approach to support the carbon price is needed. Government should establish a single recognised methodology to account for the full greenhouse gas benefits of using wood and timber products and permit its use as part of carbon accounting. Clear guidance should encourage the use of wood as a sustainable construction and manufacturing material.

Managing our woodland asset: the role of our public forestry organisations

Recommendation: Forest Services should evolve to become a public body with duties, powers and functions to champion, protect and increase benefits from trees, woodlands and forests that are good for people, good for nature and good for the green economy. Relevant duties currently placed on the Forestry Commission and its Commissioners should be maintained in the evolved Forest Services organisation.

Recommendation: That the new organisational landscape should make specific provision for international and cross-border arrangements, working closely with the devolved Parliaments on sustainable multi-benefit forestry implementation, research and in the international arena.

Recommendation: We propose that the public forest estate should remain in public ownership and be defined in statute as land held in trust for the nation. A Charter should be created for the English public forest estate, to be renewed every ten years. The Charter should specify the public benefit mission and statutory duties, and should be delivered through a group of Guardians, or Trustees, who will be accountable to Parliament. The Guardians will oversee the new public forest management organisation evolved from Forest Enterprise England.

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- ii. being an exemplar in conservation of wildlife¹⁴¹, woodlands and associated habitats;
- iii. being an exemplar in large-scale open habitat and ancient woodland restoration across the public forest estate;
- iv. promoting quality access to woodlands for a wide range of activities consistent with the other purposes;
- v. engaging communities in developing and achieving the estate's goals;
- vi. expanding the estate where this improves the capacity of the estate to deliver more public benefits, and in consultation with local people;
- vii. working in partnership with others to grow local woodland economies and act in circumstances of market failure where the benefits of doing so outweigh the costs.

Recommendation: The public forest management organisation should be explicitly tasked, and incentivised, to get as much value as possible from its assets, in order to invest even more in the public benefits they deliver. This should include the ability to buy and sell land where this serves those wider purposes. This should not be at the expense of its core purpose of sustaining and enhancing the public value of the estate. Any development project or land sale must fully justify any environmental or social risk or cost by enabling more valuable investments, for example by creating woodlands close to where people live. Decisions on major projects and land sales should have stakeholder consultation at their heart, and where judgements are finely balanced, the Guardians (led by their mandate), should be involved.

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Recommendation: The financial accounts will be scrutinised by the National Audit Office (NAO) in the normal way. In addition we recommend the Natural Capital Committee, or successor, advise the NAO on how to use the natural capital approach to judge whether the best management and investments are being made to meet social, economic and environmental goals, and whether the natural capital is being grown sustainably. This will draw on the balance sheet of economic, social and environmental capital based on the comprehensive valuation we recommend.

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Recommendation: Ahead of any long-term funding arrangements, some financial breathing space should be provided for the existing organisation to enable it to make strategic (rather than emergency) operational and investment decisions. We want to see the current level of benefits from the public forest estate continue to be delivered without it being forced to sell land to balance the books.



References and Annexes

Annex A – Terms of Reference

Independent Panel on Forestry Policy in England: Terms of Reference

1. To advise the Secretary of State for Environment, Food and Rural Affairs on the future direction of forestry and woodland policy in England.
2. To advise on the role of the Forestry Commission in implementing policy on forestry and woodland in relation to England.
3. In formulating this advice, the Panel should consider:
 - a) how woodland cover can be increased, given competing pressures on land use for food production, energy and development;
 - b) options for enhancing public benefits from all woodland and forests, in the light of the Lawton Report and the Natural Environment White Paper, including:
 - public access for recreation and leisure;
 - biodiversity, wildlife protection and ecological resilience, including through restoration of open habitats and plantations on ancient woodland sites;
 - climate change mitigation and adaptation;
 - economic development, particularly to support a sustainable timber industry and a wide range of small and medium sized enterprises, including social enterprises; and
 - engagement and participation of civil society.
 - c) constraints and competing demands on public expenditure for this Spending Review period and beyond;
 - d) the role of Forest Enterprise England as the manager of productive forestry resources;
 - e) the value for money and cost-effectiveness of the public forest estate in England and options for its future ownership and management.
4. In formulating its advice to the Secretary of State, the Panel will be expected to engage and take evidence from the widest range of views and interest.
5. The Panel will report to the Secretary of State in April 2012, with a progress report in the autumn of 2011.

Members

The Right Reverend Bishop James Jones – Chair	Sue Holden
Shireen Chambers	Dr Alan Knight OBE
Dr Mike Clarke	Dame Fiona Reynolds
Tom Franklin	Sir Harry Studholme
Stuart Goodall	John Varley
Stephanie Hilborne OBE	William Worsley

Annex B – Visits and Meetings

The Chair and Members of the Independent Panel on Forestry are grateful for the input of many individuals and organisations they have heard from or met.

In the course of its work, Panel members visited the following ten areas around the country: The Forest of Dean, Northumberland including Kielder Forest, Kent, Nottinghamshire, Yorkshire, Devon, Wyre Forest near Kidderminster, the New Forest, Cumbria and East Anglia.

Information about the Panel, these visits and a record of the people met during the course of its work can be found via the Panel website pages: <http://www.defra.gov.uk/forestrypanel/>



Annex C – References

- 1 The Panel's full terms of reference are in Annex A
- 2 Information about visits and meetings held by the Panel is in Annex B
- 3 *National Inventory of Woodland and Trees 2001 England*
<http://www.forestry.gov.uk/website/forestry.nsf/byunique/hcou-54pg9u>
- 4 Forestry Statistics <http://www.forestry.gov.uk/website/forstats2011.nsf/LUContents/4B2ADD432342111280257361003D32C5>
- 5 Refer to endnote 3
- 6 Goldberg, E.A., Peterken, G.F. & Kirby, K.J in press. *Origin and Evolution of the Ancient Woodland Inventory, British Wildlife*.
- 7 Refer to endnote 3
- 8 *UK National Ecosystem Assessment (2011)* UNEP-WCMC, Cambridge
<http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>.
- 9 Information on the Natural Capital Committee can be found at <http://www.defra.gov.uk/naturalcapitalcommittee/>
- 10 Glynn, M., Anable, J., Quick, T., Richardson, W., Rowcroft, P. and Smith, S. (2012) *Independent Panel on Forestry Woodland Owner Survey. Final Report to the Independent Panel on Forestry. URS, London*
<http://www.defra.gov.uk/forestrypanel/views/>
- 11 Quick, T., Rowcroft, P. and Smith, S. (2012) *New Forms of Finance for Forestry in England. Final Report to the Independent Panel on Forestry. URS, London* <http://www.defra.gov.uk/forestrypanel/views/>.
- 12 Crabtree, R., Quick, T., Rowcroft, P. and Smith, S. (2012) *Woodland Creation in England. Final Report to the Independent Panel on Forestry. URS, London* <http://www.defra.gov.uk/forestrypanel/views/>
- 13 Information on the Woodland Carbon Code can be found at <http://www.forestry.gov.uk/carboncode>
- 14 Refer to endnote 10
- 15 Information on the Ecosystem Market Task Force can be found at <http://www.defra.gov.uk/ecosystem-markets/>
- 16 Refer to endnote 10
- 17 Forest Research (2010) *Benefits of green infrastructure* [http://www.forestry.gov.uk/pdf/urgp_benefits_of_green_infrastructure.pdf/\\$FILE/urgp_benefits_of_green_infrastructure.pdf](http://www.forestry.gov.uk/pdf/urgp_benefits_of_green_infrastructure.pdf/$FILE/urgp_benefits_of_green_infrastructure.pdf)
- 18 Royal Society for the Protection of Birds (2007) *Natural Thinking*; J. Pretty et al. (2009) *Nature, Childhood, Health and Life Pathways*.
- 19 Ellaway, A., Macintyre, S., Xavier, B. (2005) *Graffiti, Greenery and Obesity in Adults: Secondary Analysis of European Cross Sectional Survey. British Medical Journal, 331, 611-612*; Sainsbury Centre for Mental Health (2003) *Economic and Social Costs of Mental Health in England. London: The Sainsbury Centre for Mental Health*
- 20 Bird, W. (2007) *Natural Fit: Can Green Space and Biodiversity Increase Levels of Physical Activity? RSPB*
- 21 Ellaway, A., Macintyre, S., Xavier, B. (2005) *Graffiti, Greenery and Obesity in Adults: Secondary Analysis of European Cross Sectional Survey. British Medical Journal, 331, 611-612*
- 22 Royal Society for the Protection of Birds (2007) *Natural Thinking*; Tim Gill (2007) *No Fear: Growing Up in a Risk Averse Society*; The Office for Standards in Education, Children's Services and Skills (2008) *Learning Outside the Classroom: How Far Should You Go?*
- 23 Spatial Planning & Health Group (June 2011) *Steps to Healthy Planning: Proposals for Action* <http://www.spahg.org.uk/wp-content/uploads/2011/06/SPAHG-Steps-to-Healthy-Planning-Proposals-for-Action.pdf>
- 24 Natural England (2009) *An Estimate of the Economic Health Value and Cost Effectiveness of the Expanded Way to Health Initiative*
- 25 Defra (2010) *Valuing the Overall Impacts of Air Pollution* <http://www.defra.gov.uk/environment/quality/air/air-quality/air-quality-publications/>
- 26 HM Government (2010) *Healthy Lives, Healthy People: Our Strategy for Public Health in England*.

- 27 Faculty of Public Health, in association with Natural England (2010) *Great Outdoors: How Our Natural Health Service Uses Green Space To Improve Wellbeing*; Natural England (2010) *Walking for Health: A Cost-Effective Healthcare Solution*
- 28 Forestry Commission (2011) *Public Opinion of Forestry* <http://www.forestry.gov.uk/forestry/INFD-5ZYL9W>
- 29 Lawrence, A. And Dudley, M. (2012) *International Comparisons of Forest Policy: a Rapid Evidence Review Forest Research report for the Independent Panel on Forestry* <http://www.defra.gov.uk/forestrypanel/files/International-policy-RER.pdf>
- 30 Woodland cover in England is 10% compared to Denmark 13.5%, North Rhine Westphalia, Germany 27% or Sweden 69%. Refer to endnote 29
- 31 Studies include: Forest Research (2008) *An Evaluation of Cydcoed: the Social and Economic Benefits of Using Trees and Woodlands for Community Development in Wales* [http://www.forestry.gov.uk/pdf/Cydcoed_summary_report_Jan09.pdf](http://www.forestry.gov.uk/pdf/Cydcoed_summary_report_Jan09.pdf/$FILE/Cydcoed_summary_report_Jan09.pdf); Lawrence, A. and Ambrose-Oji, B.A. (2010) *Understanding the Effects of Community Woodlands and Forests in Great Britain* <http://www.cfc2010.org/papers/session11/Lawrence-s11.pdf>; EFTEC (2010) *Initial Assessment of the Costs and Benefits of the National Forest* http://www.nationalforest.org/document/research/eftec_analysis.pdf
- 32 Information about Community Supported Agriculture can be found at <http://www.makinglocalfoodwork.co.uk/about/csa/index.cfm>
- 33 Information about the Wyre Community Land Trust can be found at <http://www.wyreclt.org.uk/>
- 34 Woodland Trust (2010) *Space for People* <http://www.woodlandtrust.org.uk/en/about-us/publications/key-publications/space-for-people/Pages/space-for-people.aspx>. These figures exclude woodlands only accessible via public rights of way.
- 35 Refer to endnote 10
- 36 Paths for Communities is a funding scheme set up to develop and enhance the network of Public Rights of Way (PROW) in England in order to deliver benefits to rural areas. Local community partnerships are eligible to bid to Natural England for funds. <http://www.naturalengland.org.uk/ourwork/access/rightsofway/p4c.aspx>
- 37 Schemes and incentives include, but are not limited to, funds forming part of the Common Agricultural Policy; Inheritance Tax Exemptions; arrangements under the Natural Environment and Rural Communities Act 2006 or the Wildlife and Countryside Act 1981
- 38 Pers comm., Helen Townsend, Forestry Commission
- 39 Refer to endnote 34
- 40 Department for Communities and Local Government (2008) *Trees in Towns II* <http://www.communities.gov.uk/publications/planningandbuilding/treesintownsii>
- 41 Mercer (2011) *Quality of Living Reports* <http://www.mercer.com/articles/quality-of-living-survey-report-2011>
- 42 Information about the i-Tree Eco tool can be found at <http://www.itreetools.org/eco/index.php>
- 43 Treeconomics (2011) *Torbay's Urban Forest- Assessing Urban Forests Effects and Values* http://www.tdag.org.uk/uploads/4/2/8/0/4280686/torbay_urban_forest_report_january_2012.pdf
- 44 Town and Country Planning Act 1990 Section 197 <http://www.legislation.gov.uk/ukpga/1990/8/section/197>
- 45 Paragraph 114, National Planning Policy Framework 2010 <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>
- 46 Sefton Council Development Plans http://www.sefton.gov.uk/devplan/local_plan/written/cpt16.htm
- 47 Mayor of London (2009) *Leading to a Greener London: An Environment Programme for the Capital* <http://london.gov.uk/sites/default/files/uploads/leading-greener-london-300709.pdf>
- 48 Information about the Trees and Design Action Group can be found at: <http://www.tdag.org.uk/>
- 49 Trees and Design Action Group (2012) *Trees in the Townscape* <http://www.tdag.org.uk/>
- 50 Lawton, J.H., Brotherton, P.N.M., Brown, V.K., Elphick, C., Fitter, A.H., Forshaw, J., Haddow, R.W., Hilborne, S., Leafe, R.N., Mace, G.M., Southgate, M.P., Sutherland, W.J., Tew, T.E., Varley, J., & Wynne, G.R. (2010) *Making Space for Nature: a Review of England's Wildlife Sites*

and Ecological Network. Report to Defra.
<http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

51 As listed in Section 41 Natural Environment and Rural Communities Act
<http://www.legislation.gov.uk/ukpga/2006/16/contents>

52 Refer to endnote 28

53 Refer to endnote 10

54 Studies include: RSPB, British Trust for Ornithology, Department for Environment, Food and Rural Affairs, Forestry Commission, Woodland Trust and English Nature (2004) *What's happening to our woodland birds?* <http://www.forestry.gov.uk/forestry/INFD-6MWL96>; Butterfly Conservation UK *Butterfly Monitoring Scheme* <http://www.ukbms.org/>; and Kirby, K.J., Smart, S.M., Black, H.I.J., Bunce, R.G.H., Corney, P.M. and Smithers, R.J. (2005). *Long Term Ecological Change in British Woodland (1971-2001)*, English Nature (Research Report 653) <http://publications.naturalengland.org.uk/publication/94019>.

55 Plantlife (2012) *Forestry Recommissioned: Bringing England's Woodlands Back to Life* http://www.plantlife.org.uk/uploads/documents/WR_web.pdf; Forestry Commission Information Note (2000) *The Impacts of Deer on Woodland Biodiversity* [http://www.forestry.gov.uk/pdf/fcin36.pdf/\\$FILE/fcin36.pdf](http://www.forestry.gov.uk/pdf/fcin36.pdf/$FILE/fcin36.pdf)

56 Forestry Commission (2011) *Forestry Commission England Impact and Input Indicators 2011-15* [http://www.forestry.gov.uk/pdf/FC_eNgLAND_topsIX_INDICAtors_30sep11_FINAL.pdf/\\$FILE/FC_eNgLAND_topsIX_INDICAtors_30sep11_FINAL.pdf](http://www.forestry.gov.uk/pdf/FC_eNgLAND_topsIX_INDICAtors_30sep11_FINAL.pdf/$FILE/FC_eNgLAND_topsIX_INDICAtors_30sep11_FINAL.pdf)

57 Refer to endnote 50

58 Information about the United Kingdom Forestry Standard can be found at <http://www.forestry.gov.uk/ukfs>; information about Environment Impact Regulations as they affect woodland expansion can be found at <http://www.forestry.gov.uk/england-eia>

59 Forestry Commission (2008) *Restoration of Open Habitats from Woods and Forests in England: Developing Government Policy* [http://www.forestry.gov.uk/pdf/eng-open-habs-evidence.pdf/\\$FILE/eng-open-habs-evidence.pdf](http://www.forestry.gov.uk/pdf/eng-open-habs-evidence.pdf/$FILE/eng-open-habs-evidence.pdf)

60 Forestry Commission (2009) *Open Habitats and Open Habitat*

Potential on the Forestry Commission Public Forest Estate in England [http://www.forestry.gov.uk/pdf/eng-open-habitats-evidence-survey.pdf/\\$FILE/eng-open-habitats-evidence-survey.pdf](http://www.forestry.gov.uk/pdf/eng-open-habitats-evidence-survey.pdf/$FILE/eng-open-habitats-evidence-survey.pdf)

61 Ball, D.F. & Stevens, P.A. (1981) *The Role of Ancient Woodlands in Conserving Undisturbed Soils in Britain. Biological Conservation*, 19, 163–176; . *Making Space for Nature* refer to endnote 50; *Keepers of Time* <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-6h3fvs>; Open Habitats Policy <http://www.forestry.gov.uk/england-openhabitats>

62 Forestry Commission National Forest Inventory <http://www.forestry.gov.uk/inventory> and Woodland Trust Woods Under Threat Database <http://www.woodlandtrust.org.uk/en/campaigning/save-ancient-forests/pages/fc-disposals-protection.aspx>

63 Refer to endnote 50

64 England Biodiversity Strategy <http://www.defra.gov.uk/publications/2011/08/19/pb13583-biodiversity-strategy-2020/>

65 See target 5 and 7 of the Aichi Biodiversity Targets <http://www.cbd.int/sp/targets/>

66 RSPB (2011) *Natural Foundations: Conservation and Local Employment in the UK* http://www.rspb.org.uk/Images/naturalfoundations_tcm9-291148.pdf

67 *Keepers of Time*: <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-6h3fvs>

68 This should adhere to Government policy (March 2010) *When to convert woods and forests to open habitat* <http://www.forestry.gov.uk/forestry/INFD-7FCH5D>

69 Information about the Woodland Potential Calculator can be found at www.forestry.gov.uk/england-wpc

70 Information about National Character Areas can be found at <http://www.naturalengland.org.uk/publications/nca/default.aspx>

71 Information about Ecological Site Classification can be found at <http://www.forestry.gov.uk/esc>

72 Information on the Woodland Carbon Task Force can be found at <http://www.forestry.gov.uk/england-wctf>

73 Refer to endnote 12

74 Refer to endnote 10

- 75 Refer to endnote 12
- 76 Refer to endnote 8 Chapter 22
- 77 Refer to endnote 12
- 78 Read, D.J., Freer-Smith, P.H., Morison, J.I.L., Hanley, N., West, C.C. and Snowdon, P. (eds). 2009. *Combating climate change – a role for UK forests. An assessment of the potential of the UK's trees and woodlands to mitigate and adapt to climate change*. The Stationery Office, Edinburgh.
- 79 Refer to endnote 78
- 80 Phenology is the timing of natural events such as the budding of trees especially in relation to climate change
- 81 Moffat A.J, Morison J.I.L., Nicoll, B and Bain, V. (Jan 2012) *UK 2012 Climate Change Risk Assessment. CCRA for the Forestry Sector*
- 82 Forestry Commission (Feb 2012) *Climate Change Risk Assessment: Forest Commission England ARP Report* [http://www.forestry.gov.uk/pdf/CCRAFCE.pdf/\\$file/CCRAFCE.pdf](http://www.forestry.gov.uk/pdf/CCRAFCE.pdf/$file/CCRAFCE.pdf)
- 83 Forestry Commission England (Sept 2010) *Research Note: Climate Change: Impacts and Adaptation in England's Woodlands* [http://www.forestry.gov.uk/pdf/FCRN201.pdf/\\$file/FCRN201.pdf](http://www.forestry.gov.uk/pdf/FCRN201.pdf/$file/FCRN201.pdf)
- 84 Refer to endnote 78
- 85 Forestry Commission Information Note (2000) *The impact of deer on woodland biodiversity* [http://www.forestry.gov.uk/pdf/fcin36.pdf/\\$file/fcin36.pdf](http://www.forestry.gov.uk/pdf/fcin36.pdf/$file/fcin36.pdf)
- 86 Squirrels and England's Woods <http://www.forestry.gov.uk/greysquirrel>
- 87 Pests and Diseases <http://www.forestry.gov.uk/pestsanddiseases>
- 88 F.Williams, R. Eschen, A. Harris, D. Djeddour, C. Pratt, R.S. Shaw, S.Varia, J. Lamontagne-Godwin, S.E.Thomas, S.T. Murphy (2010) *The Economic Cost of Invasive Non-Native Species on Great Britain* <http://prerel.sgtk.cabiorg.cab.semcs.net/uploads/projectsdb/documents/6534/Economic%20Costs%20of%20INNS%20to%20the%20British%20Economy%20-%20Final%20Report%20v3.pdf>
- 89 Pers comm. Matthew Wells, Director of Tree Preservation, New York City Parks
- 90 Defra and Forestry Commission (2011) *Tree Health and Plant Biosecurity Action Plan* <http://www.defra.gov.uk/food-farm/crops/tree-health/>
- 91 The Economics of Ecosystems and Biodiversity (TEEB) study <http://www.teebweb.org/>
- 92 Refer to endnote 12
- 93 HM Treasury (2006) *Stern Review on The Economics of Climate Change* http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/sternreview_index.htm
- 94 *The Plan for Growth* (March 2011) http://cdn.hm-treasury.gov.uk/2011budget_growth.pdf
- 95 HMG (2011) *Enabling the Transition to a Green Economy: Government and Business Working Together* <http://www.bis.gov.uk/policies/business-sectors/green-economy/green-economy-for-business>
- 96 DECC Annual Energy Statement July 2010 <http://www.decc.gov.uk/assets/decc/what%20we%20do/uk%20energy%20supply/237-annual-energy-statement-2010.pdf>
- 97 Forestry Commission England (Jan 2011) *The contribution of forestry and wood based sectors, including those using home-grown wood, to productivity and employment*. Figures for 2008 taken from the Annual Business Enquiry 2009 and Office for National statistics Regional GVA December 2009 published by the Office of National Statistics
- 98 Refer to endnote 97
- 99 Confor (2011) *Managing Our Forests Responsibly* http://www.confor.org.uk/upload/documents/22_Confortopicpaper1Managingourforestsresponsibly.pdf
- 100 Forestry Commission Forestry Facts and Figures 2011 <http://www.forestry.gov.uk/forestry/inf-d-7aqf6j>
- 101 Centre for Economics and Business Research (2010) *The Economic Value of the Woodfuel Industry to the UK Economy by 2020: Report for the Forestry Commission* http://www.biomassenergycentre.org.uk/pls/portal/docs/pAge/BeC_teCHNICAL/reseArCH%20AND%20stUDies/eCoNoMIC%20stUDies/2010-06-30%20eCoNoMIC%20VALUe%20oF%20WoodFueL_reVlSeD%20report.pDF
- 102 Confor (2012) *Forestry Green Jobs, paper to the Independent Panel on Forestry*, available at www.confor.org.uk
- 103 Forestry Statistics 2011 – UK Grown Timber <http://www.forestry.gov.uk/website/forstats2011.nsf/0/88BDD8FEA0D881448025734E004F27BB>

- 104 This estimate expresses the annual non-FC softwood production for 2007-2011 as a % of the forecast non-FC softwood availability for the same years (<http://www.forestry.gov.uk/website/forstats2011.nsf/0/EC92ED484E5F50358025732200487A8F>). These are forecasts of annual availability rather than production, as they do not take account of financial factors or the state of markets, which may cause production to be delayed or brought forward.
- 105 Pers Comm. with David Spencer, Stove Industry Alliance
- 106 Forestry Statistics Softwood Sawlog Price Index [http://www.forestry.gov.uk/pdf/tpi201203.pdf/\\$FILE/tpi201203.pdf](http://www.forestry.gov.uk/pdf/tpi201203.pdf/$FILE/tpi201203.pdf)
- 107 Forestry Statistics <http://www.forestry.gov.uk/website/forstats2011.nsf/LUContents/824A4E0E2DDEDC858025731B00541EFF>
- 108 UK Forest Products Association <http://www.ukfpa.co.uk/site/sawnews.html>
- 109 Forestry Statistics <http://www.forestry.gov.uk/website/forstats2011.nsf/LUContents/35053FAF3CAE1BB5802573550054ABD7>
- 110 Refer to endnote 10
- 111 LANTRA (2011) *Trees and Timber Industry in Great Britain: Size, Structure and Skills* [http://www.lantra.co.uk/getattachment/8821901b-7abe-4bcb-ad79-034e65f00172/Environmental-Conservation-Industry-in-GB-\(2011\).aspx](http://www.lantra.co.uk/getattachment/8821901b-7abe-4bcb-ad79-034e65f00172/Environmental-Conservation-Industry-in-GB-(2011).aspx)
- 112 Jaakko Poyry Consulting (2006). *Woodland and Forest Sector in England. A mapping study carried out on behalf of the England Forest Industries Partnership.*
- 113 Pers comms Keith Jones, Forestry Commission
- 114 LANTRA 2010-2011 *Research Fact Sheet for Trees and Timber, Labour Market Information* [http://www.lantra.co.uk/Downloads/research/skills-assessment/trees-and-timber-v2-\(2010-2011\).aspx](http://www.lantra.co.uk/Downloads/research/skills-assessment/trees-and-timber-v2-(2010-2011).aspx)
- 115 England Forestry Action Plan for Skills June 2011 <http://www.forestry.gov.uk/newsrele.nsf/AllByUNID/521C6FB70EFE5AF8802578AE0046F0CA>
- 116 LANTRA (2009) *Research fact sheet for trees and timber, labour market information*
- 117 Forestry Skills Action Plan [http://www.forestry.gov.uk/pdf/ForestryActionPlan_web.pdf/\\$FILE/ForestryActionPlan_web.pdf](http://www.forestry.gov.uk/pdf/ForestryActionPlan_web.pdf/$FILE/ForestryActionPlan_web.pdf)
- 118 Hill, G., Courtney, P., Burton, R. And Potts, J (2003) *Forests Role in Tourism* [http://www.forestry.gov.uk/pdf/tourismsum.pdf/\\$FILE/tourismsum.pdf](http://www.forestry.gov.uk/pdf/tourismsum.pdf/$FILE/tourismsum.pdf)
- 119 Refer to endnote 8, Chapter 8. This was based on PACEC (2006) *The economic and environmental impact of sporting shooting (report produced on behalf of BASC, CA, CLA in association with GCT)* which showed that around 80% of total GVA supported by all sport shooting accrued to England, therefore we would expect a large % of these woodland estimates to also relate to England.
- 120 Quoted at <http://www.newforest.gov.uk/index.cfm?articleid=5197>
- 121 See, for example, Forest Research and North Energy Associates (2012) *Carbon impacts of using biomass in bioenergy and other sectors: Forests* http://www.decc.gov.uk/en/content/cms/meeting_energy/bioenergy/strategy/strategy.aspx and Edinburgh Centre for Carbon Management (2006) *Carbon Benefits of Timber Production*
- 122 Quoted in *The Timber Industry Manifesto: Developed by Wood for Good* http://www.woodforgood.com/assets/pdfs/WFG_Manifesto.pdf
- 123 Edinburgh centre for Carbon Management (2006) *Carbon Benefits of Timber Production*
- 124 Refer to endnote 78
- 125 Forest Research and North Energy Associates (2012) *Carbon impacts of using biomass in bioenergy and other sectors: Forests* http://www.decc.gov.uk/en/content/cms/meeting_energy/bioenergy/strategy/strategy.aspx
- 126 Register of UK Woodland Carbon Projects <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-863h7a>
- 127 <http://www.defra.gov.uk/news/2012/06/20/greenhouse-gas-reporting/>
- 128 COM(2012) 93 final, *Proposal for a Decision of the European Parliament and of the Council on Accounting Rules and Action Plans on Greenhouse Gas Emissions and Removals Resulting from Activities Related to Land Use, Land Use Change and Forestry* <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0093:FIN:EN:PDF>
- 129 This is estimated from:
- figures from Forest Services on how the existing budget is spent on regulation, planning grants, management grants, woodland improvement grants and partnership delivery;

- the corresponding per-hectare figures. Forest Services has estimated how these are likely to rise with increased woodland management (e.g. because of dealing with smaller woodlands). They have also estimated the proportion of the new managed woodland that would need each activity.

These increased costs are calculated for 362,000 additional hectares of private sector woodland in management, which corresponds to the overall target of 80%.

The following assumptions are also used:

- that partnership work with private woodland owners would need to increase immediately in order to encourage more participation.
- that regulation and grant administration activities would increase in proportion to the additional land brought into management.
- that the target is achieved steadily between 2013/14 and 2023/24. So costs increase linearly from 2013-14 until 2023-24.

In order to quote a single figure to cover the period between now and the end of the next Spending Review Period we take the average of the annual increases between 2013-14 and 2019-20. Although the result is based on an extension of current activities we (and FS) assume that some of the resource will be more effectively deployed on market development and partnership work.

- I 30 Quine, C., Crabtree, R., Quick, T., Rowcroft, P and Smith, S. (2012) *Woodland Management in England. Final Report to the Independent Panel on Forestry*. URS, London. <http://www.defra.gov.uk/forestrypanel/views/>
- I 31 Refer to endnote I 30
- I 32 Including, for example, MCPFE/Forest Europe Helsinki principles for sustainable forestry, UN Rio Earth Summit forest principles, UN World Summit on Sustainable Development
- I 33 Examples include Ordnance Survey, and the 1968 Transport Act
- I 34 There will be clear ties to existing environmental duties placed on Forest Services in the NERC, CROW and Forestry Acts.
- I 35 Eftc (2010) *The Economic Contribution of the Public Forest Estate* [http://www.forestry.gov.uk/pdf/eng-pfe-econmicresearch-final.pdf/\\$FILE/eng-pfe-econmicresearch-final.pdf](http://www.forestry.gov.uk/pdf/eng-pfe-econmicresearch-final.pdf/$FILE/eng-pfe-econmicresearch-final.pdf)
- I 36 HM Treasury Autumn Statement 2011 http://cdn.hm-treasury.gov.uk/autumn_statement.pdf

- I 37 The £7m figure assumes prices remain at 2011 levels of just over £19/m³. If they were to reduce again, e.g. to 2009 levels of around £15/m³ the gap could increase to £14m, whereas if they remain at today's levels of around £22/m³ it could decrease to around £4m.
- I 38 Information on the Natural Capital Committee can be found at <http://www.defra.gov.uk/naturalcapitalcommittee/>
- I 39 Keepers of Time: <http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-6h3fvs>
- I 40 This should adhere to Government policy (March 2010) *When to convert woods and forests to open habitat*
- I 41 There will be clear ties to existing environmental duties placed on Forest Services in the NERC, CROW and Forestry Acts

