

Natural England Board



Meeting: 18
Date: 25 November 2009

Paper No: **NEB PU18 04**

Title: **Natural England's Draft Position on Trees and Woodlands**

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1. Purpose

1.1 The purpose of this paper is to seek approval from the Board for the draft position on trees and woodlands, prior to formal external consultation.

2. Content

2.1 The draft position has been discussed by Board Outcome Groups 1 and 3.

2.2 The draft position covers all trees and woodlands in both urban and rural areas. It focuses on the need to:

- increase management to secure our objectives, including restoration of ancient woodlands and former open habitats damaged by plantations;
- increase access to woodlands and improve recreational infrastructure;
- respond to the threats and opportunities presented by climate change;
- secure a significant expansion of trees and woodlands to address environmental and social need;
- integrate trees and woodlands better with other land uses, and to demonstrate the relevance of trees and woodlands to wider agendas.

3. Recommendations

3.1 It is recommended that the Board agrees this draft position for external stakeholder consultation. A final draft of this position will be circulated to all Board members, prior to sign off by the Chair.

4. Summary of Context for our Trees and Woodlands Position

4.1 Trees and woodlands are critical to the delivery of Natural England's objectives. They are rich in wildlife, many are of historic and cultural importance or contain historic features, they are characteristic of most landscapes, and they provide significant opportunities for public access. They play a major role in natural resource management of water, soil and air, and provide vital stepping stones for species movement across landscapes. Greater benefit to society can be secured through improved management of trees and woodlands, and through increased tree and woodland cover.

- 4.2 Two highly significant developments are happening in forestry, both of which would give momentum to the direction we are seeking in our draft position:
- Promising discussions are underway that are likely to result in significant funding for woodfuel from the Energy Crops Scheme. This could revitalise the management of our neglected native woodland;
 - The Government has accepted that woodland expansion has an important role in mitigating climate change through carbon sequestration. 10,000ha a year is being proposed, funded largely through carbon credits. If this materialises, we need to ensure that this delivers multiple public benefits and ecosystem goods and services. We are involved in work that is just starting to add detail to this proposal.
- 4.3 We work in partnership with the Forestry Commission in this arena, through a Memorandum of Agreement that sets out how we align our activities. In partnership with the Forestry Commission, we produced a Delivery Plan for the Government's Strategy for England's Trees, Woods and Forests last year.

5. Summary of Natural England's draft position on Trees and Woodlands

Natural England believes that:

- 5.1 The environmental and cultural values of our existing woodland cover, particularly those associated with our ancient woodlands, need to be protected and enhanced through appropriate management.
- 5.2 Protection of parkland, wood-pasture and non-woodland trees is essential to maintain the integrity of the overall fabric of rural and urban landscapes. Urban tree strategies need to be adopted that foster long term management of the overall structure and health of the "urban forest".
- 5.3 A substantial programme to increase tree and woodland cover, integrated with other land uses, is needed to address environmental and social needs.
- 5.4 More access to existing woodland is needed, together with improved recreational infrastructure, and more trees and woodlands need to be established closer to where people live.
- 5.5 The threat to our trees and woodlands from climate change is significant and our approach to woodland management, tree planting, woodland creation and to regulation and designation will need to adapt. Climate change strategies need to address this threat and promote the benefits trees and woodlands offer.
- 5.6 Plantations and trees should be removed, subject to local consultation, where these are damaging to open habitats and species, are disrupting valued landscapes or historic features or are reducing opportunities for access.
- 5.7 Better integration of trees and woodlands with other land uses is required to achieve the widest range of public benefits and ecosystem goods and services.
- 5.8 Cross sector support for the Delivery Plan to implement the Strategy for England's Trees Woods and Forests is critical to address the issues facing our trees and woodlands.

Annex 1

Natural England's Draft Position on Trees and Woodlands

Trees and woodlands are critical to the delivery of Natural England's objectives. They are rich in wildlife, many are of historic and cultural importance or contain historic features, they are characteristic of most landscapes, and they provide significant opportunities for public access. They play a major role in natural resource management of water, soil and air, and provide vital stepping stones for species movement across landscapes. We believe that greater benefit to society can be secured through improved management of trees and woods, and through creative approaches that increase tree and woodland cover, recognising the importance of having the right trees in the right places. We therefore have a keen interest in how England's tree and woodland cover is changing, how it is being managed and regulated. We work in partnership with the Forestry Commission in this arena, through a Memorandum of Agreement that sets out how we align our activities.

This paper explains Natural England's views on the current and potential role of trees and woodlands within the natural environment. It builds on our earlier work with the Forestry Commission and with Defra on the Government's Strategy for England's Trees Woods and Forests and its subsequent Delivery Plan. The specific Delivery Plan objectives to which we will contribute are detailed at Annex 2.

Context

Woodland cover in England at 8.7% of land area is low in European terms, where the EU 27 average is 37%. Despite this relatively small area, the distinctiveness and diversity of our woodland is high and they provide a wide range of high quality ecosystem services. Of the total area, some 60% is characterised as broadleaved and 40% as conifer. All woodland can contribute to timber and fuel production, access and recreation opportunities, carbon sequestration, climate change adaptation and wildlife. Well managed woodland can be exemplars of sustainability, in the process supporting jobs and enterprises. While broadleaved woodland tends to make the greatest direct contribution to Natural England's wildlife, landscape and access objectives, we value the role that mixed and coniferous woodland can play.

Woodland is also characterised as either ancient woodland (wooded since at least 1600 AD) or as recent woodland cover. The Government's ancient woodland policy, Keepers of Time, recognises that it represents, 'a living cultural heritage, a natural equivalent to our great churches and castles'. Ancient woods are one of our richest wildlife habitats and are an irreplaceable biological and cultural asset. Their history shows us that many of the environmental benefits that we value in our ancient woodlands today are the consequence of productive management in the past.

England has 10 of the woodland habitat types protected under the European Habitats Directive; 6 priority habitats identified by the UK Biodiversity Action Plan; and 63 priority associated species, such as dormouse and Bechstein's bats. There are about 1,000 SSSIs with woodland interest.

Some 89 million non-woodland trees contribute considerably to England's wildlife, landscapes and to people's quality of life. They include veteran trees in parks and wood-pastures, orchard trees, trees in hedges and fields; as well as trees in villages, towns and cities. England is of European importance for its large number of surviving old broadleaved trees. Traditional orchards remain an important feature despite losing 60% of them since

1950. Trees form the backdrop to many urban areas and our understanding of the benefits they provide there is increasing.

Woodland and trees provide the structure to many landscapes and can be the dominant characteristic, for example in the High Weald and Lower Wye Valley. At a local level they can be significant elements in historic landscapes and gardens, city parks and residential areas. Their impact is not static as woods have transformed some areas over the last century, for example in Kielder. More recent changes have occurred in the National Forest and through the Community Forests. Further expansion of trees and woodlands will bring more change, improving degraded landscapes, as has been demonstrated through the Newlands Project in the north-west, building on existing landscape character and creating new landscapes.

In total over half the area of woodland in England has public access, including land secured under the CROW Act. Public and voluntary bodies are the main providers, though a significant proportion of access is on privately owned land. Woodlands are the leading countryside recreation destination with over 170 million leisure day visits.

Some 20% of England's woods are managed by the Forestry Commission. Others are managed by voluntary organisations like the Woodland Trust and National Trust, and by public authorities. The majority however, particularly of ancient and native woodland, is in small blocks and is privately owned. Woodland ownership is popular seeing increasing numbers new owners in recent years. Understanding the motivations of these different owners is an important factor in targeting policy, incentives and advice.

The majority of wood-products used in England are imported with demand dominated by coniferous wood or fibre. Most of our conifer forests are managed with wood production as the major objective, supplying around 10% of our domestic timber. The softwood industry has seen high levels of investment in recent years but it faces strong competition. Most broadleaved woodland was also managed for wood in the past but now only about 25% of annual increment, its sustainable yield, is harvested.

Our woodlands and to a lesser extent non-woodland trees, are covered by strong national and regional policies and strategies, focusing on their multi-purpose role and emphasising their wider relevance to other agendas. Woodland policy is underpinned by strong regulation, by established minimum environmental standards and by relatively high uptake (over 30%) of voluntary certification standards. These standards go beyond those for agriculture and are of high international standing. The Delivery Plan for the England's Trees Woods and Forests strategy and the Regional Forestry Frameworks present a collective approach to the issues facing our trees and woodland. The principle that publically funded incentives and rewards are used to provide defined public benefits is established, although there are concerns that woodland owners are not on a level playing field compared to the support that is available to farmers. Yet despite this policy infrastructure, trees and woodlands face many pressures and challenges.

Issues

The predicted impacts of climate change present major challenges as well as new opportunities for trees and woodlands. The challenges include the direct impact on species occurrence and growth, changing pests and pathogens and the changing pattern and competition for space from other land-uses. The opportunities include an increased market for wood as a low carbon sustainable material or fuel, their role in sequestering carbon, protecting erosion sensitive soils, moderating water flows, and providing shade to moderate

peak summer temperatures. Climate change 'proofing' will need to be woven onto all tree and woodland policies and practice.

Reintroducing active management to many, not all, of our ancient and native woodlands would benefit wildlife and provide some improvements for access and landscape. A particular priority is the 40% of ancient woodland replanted with largely non-native conifers between about 1935 and 1985. Many of these crops are now reaching economic maturity creating a critical window of opportunity to restore these ancient woodlands over the next two decades. Management of some former coppice woods would benefit species preferring open space conditions and young growth that are currently in decline. Reintroducing management would bring additional benefits such as the supply of sustainable products, improved yields over the longer term and a growth in local employment. In the case of many farm woodlands, there is the opportunity to reintegrate their management with the wider operation of the farm.

The softwood and hardwood processing sectors have effectively separated. The decline in management in native woodland has followed a loss of markets and is mirrored by the loss of local hardwood sawmilling capacity. The development of the market for woodfuel, however, has the potential to revitalise the management of our ancient and native woodlands and to reconnect them with the timber industry.

Many woods, particularly ancient and native woods, are small and isolated. This adds to the costs and difficulties of managing them, and increases their vulnerability to threats such as pollution from adjacent farmland and to development pressures.

A major contributory factor to recent negative changes in our woods has been the substantial increase in numbers and range of wild deer, preventing regeneration, and reducing shrub layers and the abundance of typical woodland flowers. Grey squirrels too are a major problem, damaging the economic potential of many timber crops and driving our native red squirrel to near extinction in England. Protecting woodland from deer and grey squirrels is costly, requiring control at a landscape scale.

Public support for woodland is strong, but there is a perception that felling trees is a destructive act. This can be a difficult issue for woodland management, even more so where we are seeking to clear woodland to restore important open habitats that were planted up extensively in the past.

Replacements are needed for veteran trees, hedgerow trees and in traditional orchards as they are under threat from inappropriate management, removal and old age. Similar issues apply to our larger canopy urban trees, where we need to adopt urban tree strategies that foster long term management of the 'urban forest', so that it can play a full part in the development of green infrastructure.

Despite the popularity of woodland recreation and access and relatively high levels of access available, much of the resource is some distance from urban areas. Many rural population centres too lack accessible local woodland.

The benefits from woodland have been advanced by a range of regional, area and community based woodland initiatives. A growing number of projects however, are closing as funding pressures increase. The risk is that successful partners and a generation of investment and expertise will be lost just as woodfuel is set to receive a major boost and as the potential to expand woodland increases.

Position 1

The environmental and cultural values of our existing woodland cover, particularly those associated with our ancient woods, need to be protected and enhanced through appropriate management.

Issues

The distinctiveness and diversity of our woodland is high. They are rich in wildlife, many are of historic and cultural importance or contain historic features, and they are characteristic of most landscapes. All woodlands can provide environmental benefits and ecosystem services, which in many cases can be enhanced. Ancient woods are especially important as they are an irreplaceable biological and cultural asset that need to be protected, and their contribution recognised and celebrated.

A step change is needed in the amount of active management of woodland, particularly of ancient woodland, to maintain and enhance this resource. The key areas that need to be addressed are the:

- Loss of open space and young growth in ancient woodland;
- Increasing impacts by deer populations;
- Need for a strategy for coping with new and emerging pests and pathogens;
- Impact of increased nitrogen pollution on trees and woodland vegetation.

A particular priority is the 40% of ancient woodland replanted with largely non-native conifers between about 1935 and 1985. Under the BAP there are significant targets for further restoration (for example 36,000 ha with restoration underway by 2015). As many plantations will be felled in the next two decades, this gives a critical window of opportunity for sympathetic restoration.

Woodfuel is an important market opportunity to re-establish a culture of native woodland management, to create jobs and to supply renewable low carbon energy. Appropriate funding will be required to encourage the growth of a sustainable woodfuel industry, along with the development of guidance and the monitoring and evaluation of this new industry to ensure that its widespread introduction brings about the anticipated environmental benefits. Action to control of deer populations will need to go hand in hand with this development. Biochar, a similar product producing charcoal for long term storage in soils, together with the fuel wood oil, is gaining attention. Its potential needs to be explored.

Evidence

The United Kingdom Forestry Standard defines standards of management, and provides a basis for regulation and monitoring based on agreed international principles and criteria for sustainable forestry. This is underpinned by the Forestry Guidelines, which cover; biodiversity, climate change, historic environment, landscape, people, water and soils.

PPS9 (ODPM 2005) and Keepers of Time (FC 2005) have further strengthened the policy framework, helping to reduce the loss of ancient woodland (and veteran trees). Sites do however continue to come under threat, requiring action to protect them.

By 1985 140,000 ha (about 40%) of ancient semi-natural woodland had been converted to plantations, often of coniferous or mixed crops. The policy then switched to prevent further damage and has led to increasing levels of restoration to native broadleaved on these sites.

Good progress has been made on bringing woodland SSSIs into favourable condition, but these represent a minority of even ancient woodland. Woodland is affected by factors that need to be addressed at a landscape scale and not just through action at individual sites. Declines in key woodland butterflies, birds and ground flora species have been linked to reductions in open space, dense shrub layers and young growth in part caused by reductions in management in ancient woods over the last 50 years. Changing abundance of various ground flora species, reductions in shrub layers and natural regeneration have also been linked to rising deer populations.

The under management of our native woodlands has left us with large volumes of low grade and low value timber with little market outlet. Developing a woodfuel industry would provide a market for this low quality bulk product where none currently exists, incentivising management and rebuilding owner confidence, as well as improving the contractor and processing infrastructure. Higher quality timber leading to a wider range of uses and better returns could then be developed on the back of woodfuel, as more woodland is brought back into management.

The UK has a duty under the Renewable Energy Directive to supply 15% of its energy from renewable sources. The Government estimates that bioenergy should supply 45% of this target. The Woodfuel Strategy for England, 2007, sets a target to increase the amount of woody biomass delivered to market of 2 million green tonnes annually by 2020, cutting carbon emissions by 400,000 tonnes. Woodfuel is a highly adaptable source of energy and can be used for a range of energy needs. The market is most suited to working at a local scale; using locally grown trees in efficient boilers or combined heat and power units, while also reducing haulage costs and emissions and avoiding transmission inefficiency.

The last few years have seen increasing outbreaks of serious pests and pathogens on many of our major native and non-native tree species. Examples include various Phytophthora species, leaf miners and cankers on horse chestnut, acute oak decline, red-band needle blight on pines, squirrel attack on beech and limited outbreaks of various southern European insect pests.

Concern is growing that levels of nitrogen deposition in woods, if not yet causing widespread changes to the woodland system, may well do so in future as nitrogen levels build up in the soil through continuing deposition.

Position 2

Protection of parkland, wood-pasture and non-woodland trees is essential to maintain the integrity of the overall fabric of rural and urban landscapes. Urban tree strategies need to be adopted that foster long term management of the overall structure and health of the 'urban forest'.

Issues

Non-woodland trees are a major part of the English landscape, associated with hedges, orchards, parks, and less formal wood-pasture areas such as old commons. They provide important stepping stones for species in otherwise intensively farmed landscapes. Street trees and those in gardens can be the dominant feature of the natural environment in towns and cities. Veteran trees, like our ancient woods, are especially important as they are an irreplaceable biological and cultural asset. There is a need to improve our knowledge of the extent and condition of this resource.

Most veteran tree populations lack sufficient successor generations to maintain long-term continuity of tree and associated wildlife populations. The same is true for traditional

orchards, hedgerow trees and larger canopy urban trees. Replacements are needed for culturally, historically and ecologically significant trees that are under threat from inappropriate management, removal and old age.

The management of urban trees is often largely piecemeal. Change is needed in the way this resource is perceived, so that its structure and health is treated holistically, as the 'urban forest', in a similar way to how we manage a more traditional woodland.

Protection and management of non-woodland trees can be problematic as often they fall between the different regulatory or incentive mechanisms. Environmental Stewardship and particularly HLS have a major role to play in ensuring their future health and contribution, as do park management and urban tree strategies.

Evidence

Lowland wood pasture and parkland is a priority habitat identified by the UK Biodiversity Action Plan. A key feature of the habitat is the veteran trees and their associated cultural and wildlife values. Lack of successors, combined with gradual loss of veteran trees (as has occurred on some of our NNRs for example after severe storms), has been identified as a key threat under the Habitat Action Plan.

Hedges and hedgerow trees are characteristic of many English landscapes and they are recognised in the BAP where there are specific targets to maintain the overall number of individual isolated hedgerow trees (estimated to be just under 1.5 million in 1998) and to improve the condition of the hedgerow tree population. Hedgerow trees, especially veteran trees play an important role in maintaining and enhancing the biodiversity value of pastoral landscapes. Recent research concluded that the presence of hedgerow trees resulted in a substantially higher abundance (plus 60%) and diversity (plus 38%) of moths. The abundance of mature hedgerow trees, however, fell by 4.5% and young replacement trees by 76% between 1998-2007.

There are 28,750 ha of traditional orchards in England, which are valuable for their role in the landscape, for their cultural significance and for their wildlife. They were recognised as a UK BAP priority habitat in 2007 because of their high biodiversity value and because they are a habitat under severe threat. They are also often of high value to local communities and help people to engage with and appreciate the environment. The high profile of 'Apple Day' and the creation of community orchards illustrate the importance people give to orchards.

The trend is for larger canopy urban trees to be removed as their value is often outweighed by cost, risk and 'nuisance' factors. A review of London's trees for the five year period to 2007 found that there had been a net loss of trees in a third of London Boroughs. Harrow, for example, lost 5,000 street trees in this period and only replanted 2,000, an overall loss of 14%. The loss of trees is further compounded, as while new tree planting still occurs, more often this is with smaller growing, easier to maintain and frequently shorter lived species, which have less value. Investment in maintenance of urban trees is often inadequate and best practice in incorporating trees in building and urban design is not always well implemented. Although trees (and woodland) are often embedded in regional planning strategies, implementation of relevant policies can be limited.

Position 3

A substantial programme to increase tree and woodland cover, integrated with other land uses, is needed to address environmental and social needs.

Issues

Internationally England has a very low level of woodland cover. The current rate of woodland creation is inadequate, given the wide range of environmental and social needs that forests can deliver. More trees and woodland are needed to:

- Meet the expansion targets set in Biodiversity Action Plans (for woodlands, wood pasture, hedgerows, and orchards), and to compensate for woodland lost to open habitat restoration;
- Mitigate green house gases through carbon storage and the expansion of home wood and energy production to substitute for materials with significantly higher embedded carbon in their production and use;
- Moderate the impacts of climate change by improving urban and rural landscape resilience and adaptability;
- Strengthen natural resource management of water and soils, and to restore degraded landscapes;
- Increase accessible local woodlands close to where people live, that support community and social engagement, and encourage healthy lifestyles.

A substantial programme to increase tree and woodland cover is needed. This must be integrated with other demands on land use, targeted and planned at the landscape scale, to secure ‘the right trees in the right places’. It must seek to integrate public benefit and ecosystem goods and services objectives to maximise the gains from increased tree and woodland cover, which will be the key to gaining both public acceptance and both private and public funding.

A clear vision is needed to drive forward this woodland expansion agenda. Our assumption is that a target of the order of 2-3% of land area is needed over the next 50 years. Although more small woods and clumps of trees are important we need space to create large working and productive woods, trees and woods in mosaics with other habitats, new green belt zone woodlands for multi-purpose uses around our towns and cities, woodland to improve water quality and to moderate flooding, more trees to counter the urban heat island effect and woodlands where ecological processes can dominate, for example giving people the opportunity to experience near natural tree lines in the landscape and high altitude scrub.

Evidence

Woodland cover in England has nearly doubled in the last 90 years but, at 8.7%, still remains at under a quarter of the EU 27 average of 37%. New woodland creation has declined sharply to under 3,000 ha/yr, the lowest rate since the 1980's.

The England's Trees Woods and Forests strategy stresses the benefits of tree planting and woodland creation to address environmental, economic and social need but it does not state an ambition for the level of expansion we need. It acknowledged carbon sequestration as a benefit but at the time this was presented as a secondary justification for new woodland. The recent White Paper on Energy and Climate Change, however, has strengthened Government backing to the role new woodland has to play in climate change mitigation through carbon storage, and endorses the creation of up to 10,000ha/yr of mainly privately funded woodland through the use of carbon credits. Currently trees and woodlands sequester about one million tonnes of carbon annually, or four million tonnes of CO₂. An annual woodland creation programme of 10,000 ha per year starting now would be sequestering c.150,000 tonnes of carbon by 2050, or two million tonnes of CO₂. [A fuller analysis of figures will be published in November in the National Assessment of Forestry and Climate Change report]

New woodland creation is dominated by native species and only plantings that provide the highest level of public benefits now attract grant aid, but the majority are small scale. The level of woodland creation, however, is inadequate to meet the expansion targets set in Biodiversity Action Plans. The targets for new native woodland under the Biodiversity Action Plan amount to about 53,000 ha across all types by 2015 (compared to 1998 baseline) and by 80,000 ha by 2020. This equates to about 3,000 – 4,000 ha a year but not all the woodland creation over the last ten years has been of the appropriate type, so the rate needs to be increased. This will need to be increased further by at least the amount of native woodland that will be cleared under the policy to restore open habitats (since recent native woodland is not excluded from clearance under this policy – 45,000 out of 130,000ha of former open habitat that could be restored is native, though we expect the actual figure to be much less).

Trees and woodlands can also help increase the resilience of the rest of the ecosystem and, in turn, the services that we depend on. For example, they can help to prevent soil erosion during heavy rainfall and conversely sustain water flows in rivers during droughts.

Position 4

More access to existing woodland is needed, together with improved recreational infrastructure, and more trees and woodland need to be established closer to where people live.

Issues

Around and in cities, towns and villages trees and woodlands are an important component of our natural greenspace that people readily engage with and which provide benefits for health and wellbeing. More local trees and woodlands are needed as they offer opportunities to increase the number, diversity and frequency of people enjoying the natural environment and playing an active role in its management. They provide people, particularly children and young people, with the opportunity to interact with, to learn from and take risks in the outdoor environment, helping them understand and appreciate the natural world.

Tree planting and woodland creation should play a major role in creative approaches to quality green infrastructure and urban regeneration. This applies within existing towns and cities and in planning new housing developments and towns.

More woodlands need to be accessible. This can be achieved through a variety of means including agri-environment schemes, rights of open access, the development of new coastal access and purchase by voluntary and community organisations. Improved access needs to be coupled with appropriate outreach activity to help people to understand and engage with the opportunities and benefits it offers.

Evidence

Over half the area of woodland in England has public access, some of which is secured under the Countryside and Rights of Way Act, mainly through the dedication of the Forestry Commission's public estate. Other voluntary and public bodies are major providers of access but a significant proportion is on privately owned land. Woodlands are the leading countryside recreation destination, with over 170 million leisure day visits. Much of the population, however, still does not have the opportunity to experience woodland in their local area; 55% of the population have access to woods greater than 20ha within 4km, and 10% have access to woods greater than 2ha within 500m of their home.

Some sectors of the community are under-represented in their engagement with trees and woodlands. Local environments also vary in quality, with areas of social deprivation frequently having poorer quality environments, with lower levels of tree and woodland cover and other greenspace. Research shows clear links between a high-quality natural environment and positive impacts on physical and mental health.

Many woodlands provide valuable educational experiences, such as Forests Schools. They are also used for wider learning and personal development, including rehabilitation of offenders and providing volunteering opportunities.

The last major review of woodland access took place ten years ago, as part of the preparation for CROW Bill. This considered options for how to increase access but concluded at the time that this was not best done through statute. Instead a provision was included under the CROW Act that allowed land owners to dedicate their own land as open access. This clause has allowed the Forestry Commission to dedicate the public forest estate under its control. Much of the woodland without access is small scale and in private ownership. Some is also land-locked from other access, meaning that if a right of access were agreed it could not be exercised at the present time. There are additionally areas of woodland without access that sit within open access land. Some woodland will be included within the Coastal Access corridor.

Position 5

The threat to our trees and woodlands from climate change is significant and our approach to woodland management, tree planting, woodland creation and to regulation and designation will need to adapt. Climate change strategies need to address this threat and promote the benefits trees and woodlands offer.

Issues

Trees and woodlands need to form key elements of climate change strategies because of the threats and challenges they face and the benefits that they can bring:

- Adaptation to climate change will require the adoption of different approaches to managing trees and woods, accepting changes in species composition in places, and having to respond to new pests and pathogens. Objectives for SSSI and NNR management will need to reflect the changes that are likely to take place in these sites.
- Trees and woodlands can help to mitigate our carbon footprint because of their role in carbon sequestration, their ability to produce renewable energy and because timber can substitute for products with far higher embedded carbon.
- Both existing and new trees and woodlands can help wider landscapes increase their resilience to the impacts of climate change, through, for example, the role they can play in water management, supporting habitat diversification and connectivity, and in moderating urban climates.

Actions to address the predicted impacts of climate change must aim to balance risks, prioritising no-regret actions. These need to be based on the best available evidence and be likely to enhance the resilience and quality of our trees and woodlands. Piloting and monitoring of new approaches, within a time period commensurate with the challenge, need to be conducted at a large scale help inform us. Our actions should ideally ensure that the productive capacity of trees and woodlands is at least maintained and that they help society to adapt by minimising the impacts of climate change on rural landscapes and on our towns and cities.

Evidence

There is evidence already of changes taking place in woodland in response to climate change. For example in the timing of bud-burst to the distribution of butterfly species. Future changes are likely to include shifts in tree species abundance and unpredictable re-organisations of woodland communities. Landscapes will respond to the new climate conditions that are not simple transpositions of those that currently occur further south in Europe or that have occurred under warm periods in the past. These changes will therefore be complex and difficult to predict.

Within existing woods increased management intervention could aid the biological response of woodlands to climate change. For example, many of our woodlands will need to be restructured and diversified to enhance their resilience to climate change, to new pests and diseases, to changing abiotic disturbance regimes and to increased damage caused by fire and wind. A small proportion of woods should however be left as minimum intervention areas, to assess the degree of 'passive adaptation' that occurs.

Whereas clear-fell management systems have predominated in the past, continuous cover forestry approaches may be more wind-firm, maintain a more even carbon storage; show lower soil carbon losses during harvesting; and maintain more even humidity levels. There may be less need for coppice systems to maintain some of the southern elements of the woodland system, although some coppice may still be desirable for light, young regrowth and dense shrub demanding species.

Nature conservation priorities have largely been about maintaining communities and assemblages that developed under past environmental conditions, with an emphasis on use of native species and local provenances. This may not be valid in future as there is likely to be a major re-assortment of species in response to climate change; species and provenances from the near continent might need to be accepted as likely to be better suited to future conditions. Past studies show that species and features respond individually so there must be adequate research and monitoring to allow for timely adaptive management.

We have recognised and issued guidance to staff on an approach to accepting certain tree and shrub species as potential 'new natives' in some situations as part of our response to climate change adaptation. There will, however, still be other species that may pose a significant threat to our woodland biodiversity and such invasive species will need to be discouraged.

Our recognition of the role trees and woodlands can play in adapting the urban environment to climate change continues to grow, for example the benefits they provide in terms of shade and shelter. These functions reinforce the need for long term management of the overall structure and health of the urban tree resource.

Position 6

Plantations and trees should be removed, subject to local consultation, where these are damaging to open habitats and species, are disrupting valued landscapes or historic features or are reducing opportunities for access.

Issues

A substantial area of important open habitat was planted up during the twentieth century and the restoration of its biodiversity interest will necessarily involve the removal of woodland cover. An initial target is for 30,000 hectares of restoration over the next 10-15 years but achieving this is complicated and subject to external factors. One of the outcomes

of this policy should be the establishment of new landscapes with large scale mosaics of woodland, wood-pasture, scrub and open habitat, better able to adapt to changing climatic conditions. Woodland creation levels will also need to increase to compensate for this loss of woodland cover.

Restoring open habitat must involve effective consultation with local communities and users. Measures should also be taken to mitigate any carbon emissions, but this should not be treated as an over-riding factor to restrict restoration where clear biodiversity gains can be achieved.

Evidence

During the twentieth century large areas of open habitat such as heathland, moorland, wetland, bog and unimproved grassland were planted up with conifers for timber production. On other open areas trees such as birch colonised due to natural regeneration. The England Biodiversity Strategy states that 'a significant contribution to the restoration and re-creation targets for open ground priority habitats can be made through removal of trees from appropriate sites'. The area of woodland on former open habitat is about 130,000ha, 80,000 of which was lowland heathland, 20,000 upland heathland and 20,000 lowland calcareous grassland.

The overall carbon balance is affected by the removal of trees and ground disturbance during restoration. Measures such as not removing tree stumps can however significantly reduce the carbon lost through disturbance. Once restored, the carbon balance of open habitat becomes broadly neutral. There is however still some debate over the relative carbon stores of woodland and open vegetation in different situations which may require further research.

Position 7

Better integration of trees and woodlands with other land uses is required to achieve the widest range of public benefits and ecosystem goods and services.

Issues

Trees and woodlands are poorly integrated with other land uses and are infrequently referenced in debates about future land-use policy. Trees and woodlands that are planted, created and managed within a landscape scale approach could, however, make a significant contribution to robust, wildlife-rich habitats and landscapes that are more capable of delivering a wide range of ecosystem services including protecting erosion sensitive soils, moderating water flows, improving water quality and supporting climate change adaptation, while also producing sustainable materials, supporting jobs and providing quality places for communities.

A more integrated approach to land management is needed, one where opportunities to increase the amount of woodland and trees and to increase appropriate management are assessed alongside other required land-use and management changes when strategies, policies and plans are developed or reviewed. This will also require the effective integration of incentives, advice and regulatory mechanisms to achieve the desired land-use balance.

Work on climate change adaptation, the European Landscape Convention, the promotion of an ecosystem services approach, the development of green infrastructure, support for woodfuel through the Energy Crops Scheme and future Common Agricultural Policy reforms all present opportunities to achieve greater integration of trees and woodlands with other land uses

Evidence

Trees and woods on farms were extensively cleared prior to the 1980s as they were often seen as irrelevant to the farming system. Other woods were neglected or seen as having little value except for shooting purposes, which remains a primary management motivation for some owners. Damage caused by domestic livestock remains a problem in some areas. By contrast where active management by farmers has been promoted, for example through the engagement of initiatives like the Chilterns Woodland Project, this has often generated benefits both to the farm and for the broader environment.

Changes to the Common Agricultural Policy to promote the maintenance of permanent grassland could in England restrict the desirable spread of natural regeneration out from woods and hedges. Good Agricultural and Environmental Condition rules imply that it should be cut back. In Wales and Scotland moves have already been made to incorporate woodland grants more seamlessly into the Agri-environment programmes; while in England there are still discrepancies between High Level Stewardship and the English Woodland Grant Scheme.

To date, support for energy from biomass under the Energy Crops Scheme has been directed at changing land use to produce new crops, despite the existence of significant biomass in neglected woodlands without a market. Important discussions are now underway that could change this

Under the Open Habitats Restoration policy, some land will switch from woodland to open, effectively agricultural land which in most cases will need to be grazed. In most landscapes, however, there will still be a mosaic of woodland and open habitat.

Woodland in catchments can play a major role in regulating the water regime, helping to prevent artificially enhanced flood risk, reducing soil erosion and improving water quality. On the floodplain, woodland can again play a major role in reducing flood risk, but also trees and woods may provide an alternative productive land use in such areas.

Position 8

Cross sector support for the Delivery Plan to implement the Strategy for England's Trees Woods and Forests is critical to address the issues facing our trees and woodlands.

Issues

The Strategy and the Delivery Plan are the product of extensive consultation, and have strong endorsement from across the tree and woodland sectors. Trees and woodlands though have a benefit and a relevance to a wide range of national, regional and local community agendas but this is not yet well understood or appreciated.

We need to work with the Forestry Commission to ensure activity is coordinated, to provide leadership and support the development of future agendas for future action. We will need to be an advocate for the Delivery Plan nationally and regionally, through Regional Forestry Frameworks and through other forums. New audiences outside of the immediate tree and woodland sector need to be persuaded to engage with the Strategy, to embed it further in wider policy and delivery programmes, for example in health, education, water management and emissions reduction.

Evidence

Over 100 organisations contributed to the England's Trees Woods and Forests Delivery Plan. The support for the Delivery Plan, however, is mainly from the tree and woodland sectors and only represents the early period of the first Delivery Plan to 2012.

Annex 2

List of England's Trees Woods and Forests Delivery Plan objectives and activities that Natural England will contribute to.

Natural England's position for trees and woodlands has synergy across much of the Delivery Plan for the England's Trees Woods and Forests Strategy. Listed below are the activities that we will contribute to in some form. Omissions do not necessarily signify a lack of interest or imply that we would not contribute in the future.

Aim One: A Sustainable Resource

Objective SR2: Policies, strategies and programmes

Identify key gaps in our knowledge about the contribution of trees, woods and forests to the provision of ecosystem services and other public benefits, commission appropriate research in collaboration with other agencies and departments and create a web-based repository of relevant evidence. [SR2.1]

Ensure that trees, woods and forests feature appropriately in debates on future land use, land management and the Common Agricultural Policy. [SR2.2]

Contribute to the mid-term review of the Rural Development Programme England (RDPE), with the aim of strengthening the position of trees and woodlands as part of a more integrated and sustainable approach to rural land management. [SR2.3]

Work to more fully integrate trees and woods into evolving regional, sub-regional and local planning and delivery frameworks, including new developments and areas of new housing. [SR2.4]

Secure further recognition of the potential contribution of trees and woodlands to local environmental quality and sustainable communities. [SR2.5]

Objective SR3: Better understanding and engagement

Continue to develop innovative ways of engaging more people from all parts of society in the planting, management and use of trees, woods and forests in their locality, from more effective consultation to more direct involvement in volunteering and wardening. [SR3.4]

Objective SR4: Sustainable management and economic viability

Increase the proportion of woods and forests under appropriate management that meets either the UK Woodland Assurance Scheme (UKWAS) or the UK Forest Standard (ULFS). [SR4.2]

Review the outcomes delivered by Forestry Commission grants for woodland management, restocking and creation, and take the opportunity of the mid-term review of RDPE to adapt the English Woodland Grant Scheme (EWGS) to ensure it is well matched. [SR4.5]

Further develop the role of the publically owned estate, as a major provider of public benefit, an exemplar of good practice, a facilitator of economic activity and a catalyst for landscape-scale working. [SR4.5]

Objective SR5: Tree planting and woodland creation

Agree with partners new expressions of the priority areas and places in each region where new tree planting and woodland creation should be targeted, based on the public benefits they will provide. [SR5.1]

Evaluate recent tree planting and woodland creation to ensure lessons are learned on location, establishment techniques, management and the provision of public benefits. [SR5.2]

Aim Two: Climate Change

Objective CC1: Increasing resilience of trees and woodlands

Improve evidence and guidance on adaptation, using information from tree collections, species trials and private sector woodlands; communicate the resulting guidance on species choice to managers. [CC1.1]

Establish a monitoring framework for tree health and woodland condition to evaluate the impacts of climate change, to inform developing adaptation strategies. [CC1.4]

Develop indicators of progress for adaptation. [CC1.5]

Objective CC2: Adapting the rural landscape

Appraise the benefits of tree planting and woodland creation for climate change adaptation including the development of habitat networks, flood prevention and alleviation; agree priorities to enable appropriate targeting of new woodland. [CC2.1]

Integrate trees and woodlands more fully into measures to protect natural resources (water quality, soil function, air quality) from the impacts of climate change. [CC2.2]

Objective CC3: Adapting the urban environment

Strengthen evidence on the contribution trees and woods can make to adapting the urban environment to the impacts of climate change and communicate this to local authorities. [CC3.2]

Embed trees and woodlands in plans that cover the adaptation of the urban environment to climate change. [CC3.3]

Objective CC4: Mitigating climate change

Support woodland bioenergy plantation trials with accompanying feasibility studies, monitoring of impacts and development of good practice. [CC4.2]

Promote the role of sustainable forest management in climate change mitigation, achieving greater use of wood products and woodfuel. [CC4.3]

Objective CC5: Communicating climate change

Develop common messages, on how trees and woodlands can address climate change, and develop partnerships to convey those messages using all available media and resources, including forest visitor centres. [CC5.3]

Aim Three: Natural Environment

Objective NE1: Ecosystem services

Review the evidence and establish pilot projects to evaluate the effect of woodland creation and removal on soils, water quality and stream flows as a contribution to the implementation of the Water Frameworks Directive and England's Soil Strategy. [NE1.1]

Agree priority areas where woodland creation will contribute most in terms of flood alleviation, water quality and watercourse condition. [NE1.2]

Objective NE2: Ancient and native woodland, and veteran trees

Publish guidance for planners and developers on protecting ancient woodland and veteran trees and incorporating both existing and new trees and woods in development. [NE2.1]

Ensure the options and targeting of Environmental Stewardship (Entry Level Scheme (ELS) and Higher Level Scheme (HLS)) help land managers to enhance the network of trees and woodlands across the landscape. [NE2.2]

Address the key threats to ancient and native woodland: deer, squirrels, exotic species, livestock and shade, through targeting incentives, technical advice and outreach. [NE2.3]

Evaluate the contributions that EWGS, Environmental Stewardship and the Forestry Commission estate make to enhancing and restoring ancient and native woodland and improving its resilience to climate change. Follow through with necessary changes to enhance such contributions. [NE2.4]

Ensure substantive progress is being made towards achieving the habitat targets for protecting, restoring and expanding ancient and native woodland by targeting resources, outreach and technical advice. [NE2.5]

Publish guidance and provide training on managing ancient and native woodland that also covers the harvesting of woodfuel and adaptation to climate change. [NE2.6]

Improve opportunities for people to enjoy woodland wildlife and the historic environment, increasing the area of native woodland with public access and providing exciting and innovative ways for people to experience wildlife on the public forest estate. [NE2.7]

Objective NE3: Wider habitats

Develop a clear rationale to guide the removal of inappropriate plantations, woodland and trees for the [purpose of restoring key habitats. [NE3.1]

Improve our evidence on the biodiversity associated with non-native woods and forests with a particular focus on species that are declining and species associated with open habitats. [NE3.2]

Objective NE4: Rare and declining species

Target and support appropriate management to locations where it will help reverse serious declines in species that are dependent on woodland, with a particular focus on species with well-understood habitat needs. [NE4.1]

Improve our understanding of population trends and the causes of decline in selected vulnerable species, and provide further guidance for managers on how to help such species. [NE4.2]

Objective NE5: Landscape and cultural heritage

Publish guidance and provide training on how the principles of the European Landscape Convention can be applied in a practical way to the creation and regeneration of woods and forests in England. [NE5.1]

Improve information on assessing and managing heritage features to those planning to create or manage woodland, and support projects that will engage and inform the public. [NE5.2]

Aim Four: Quality of Life

Objective QL1: Attractive and inspiring places

Work with key national partners to strengthen the integration of Green Infrastructure across the sustainable communities agenda and evolving regional and local delivery structures. [QL1.1]

Promote and support tree planting and the creation of accessible woodland in identified priority areas with appropriate ongoing maintenance. [QL1.2]

Disseminate good practice and identify innovative ways of securing revenue funding for the provision of Green Infrastructure. [QL1.3]

Objective QL2: Recreation, enjoyment and healthy lifestyles

Develop and test a new way to monitor and evaluate the quality of experience provided by new or improved woodlands and their impact on local quality of life. [QL2.1]

Support innovative partnership projects and joint ventures that extend the range of opportunities for both informal and more active sport and recreation in both public and private woodland. [QL2.2]

Objective QL3: Active, stronger and more sustainable communities

Establish new strategic partnerships between Government, NGOs and voluntary and community agencies to promote trees, woods and forests as part of wider social delivery. [QL3.1]

Pilot new ways of getting more people, particularly from under-represented groups, involved in the creation, management and enjoyment of their local trees, woods and forests. [QL3.2]

Develop volunteering and skills development programmes to enhance the capacity of local people to play an active part in the Green Infrastructure of their community. [QL3.3]

Aim Five: Business and Markets

Objective BM2: Woodfuel

Develop an implementation plan for the England Woodfuel Strategy in collaboration with regions, facilitate access to relevant funding streams and promote the growth of the market through the provision of information and advice. [BM2.1]

Gather and publish better information on the potential of the under-managed woodland resource, especially as a source of woodfuel and other products. [BM2.3]

Work with partners on the development and implementation of regulations and guidance associated with the production and use of woodfuel. [BM2.4]

Objective BM4: Business models

Develop and promote economically viable business models for the management of smaller woodlands. [BM4.1]

Scope and where necessary pilot ways in which ecosystem services could generate income and contribute to the economic viability of sustainable woodland management. [BM4.5]