

Realising the benefits of trees, woods and forests in the East of England

A Woodlandforlife Publication



Contents

Contents	2
1. Introduction	3
Background	3
Why plan for trees, woodland and forests?	4
Vision	4
Current policy drivers	4
2. East of England Woodland and Trees – valuable assets	5
Ecosystems services – natural benefits	6
History and Heritage	8
Threats	8
3. Trees and the Climate Change	10
Impact of climate change	10
Mitigation	10
Adaptation	11
Renewable energy	11
4. Woodland – The Economic benefits	13
Timber and wood products	13
Recreation and Tourism	15
Field sports and game	16
Housing and industry	16
Flooding	16
5. Woodland and Communities	17
Health and wellbeing	17
Recreation and access	18
Green Infrastructure	18
Education	19
Equality and diversity	19
Community Engagement – Big society	20
Built environment	20
6. Woodland and the Environment	22
Biodiversity	23
Landscape	23
Soils	24
Water quality, water management and supply, air quality	24
7. Support, advice and opportunities	26
Monitoring Progress	26
Business and Corporate Planning	26
Follow up process	27
Opportunities for realising the benefits of trees and woodland	27
8. Case Studies	29
Woodfuel – pioneering green firm launched	29
Center Parcs	29
Branching Out	30
Recreation – get fit and go green city park project	30
Khush dil (happy heart)	30
Forest for Peterborough	30
Torbay – putting a value on trees	31
Thetford loops	31
Marston Vale – Community Forest	32
Clinks Care Farm – Norfolk County Council	32
Slowing the flow	33
Annex 1	34
Annex 2	34
References	35
Footnotes	35
Monitoring and Action Group members and advisors	36
Credits	36

1. Introduction

1 Trees and woodland provide significant benefits to the social, economic and environmental fabric of the East of England and have an increasingly important role in climate change mitigation and adaptation.

- The social benefits relate to improved physical and mental health, enhanced living environments, increased community pride, recreation, education and community engagement.
- Economic benefits, in addition to employment and the value of timber, include positive influences on inward investment, increased property values, reduced energy costs, assist in transition to low carbon economy, regeneration of derelict and damaged land, and tourism.
- The environmental benefits include carbon sequestration, renewable energy, biodiversity, the historic environment, landscape, pollution abatement, soil conservation and protection of water resources.

2 These benefits are frequently not fully recognised and there is great potential to bring increased benefits to more people.


3 This document sets out the kind of benefits that can be delivered by trees woodland and forests and suggest ways or provide case studies of how benefits may be realised or widened. The intended audience is anyone who seeks to help communities garner the potential from existing or proposed woodland. It should also be an aid to help enable those with specific duties relating to climate change adaptation or biodiversity to meet those duties. It is not intended to be prescriptive in any way, but to provide pointers to opportunities and possible partnerships which may be generated between woodland managers and landowners, local communities and non-governmental organisations, forestry and woodland businesses, local authorities and the wider public sector.

Background

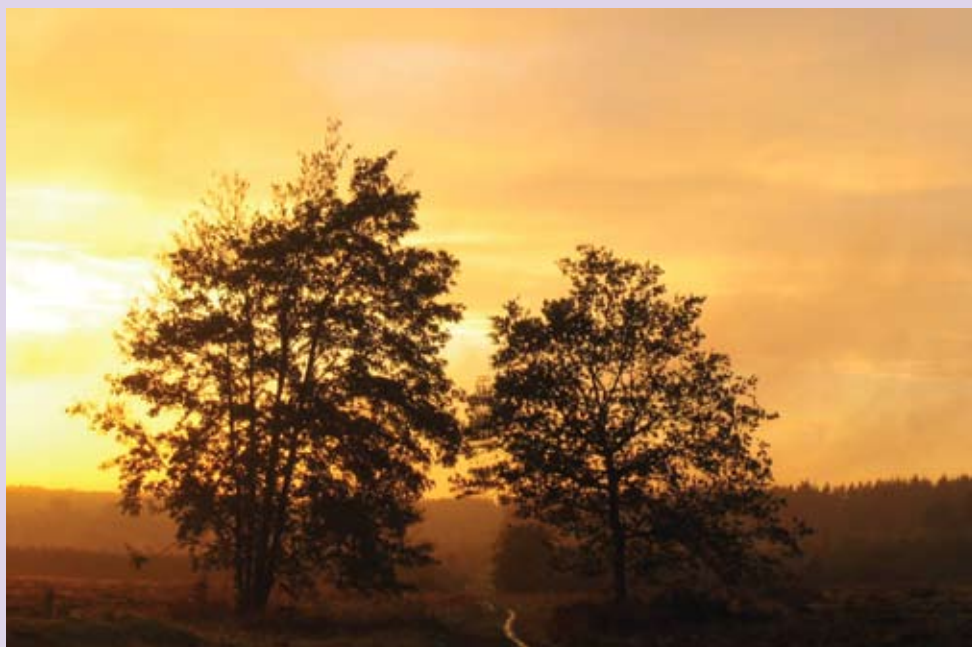
This document follows on from Woodland For Life (2003) the Woodland Strategy for the East of England¹ (an area consisting of the counties of Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk and the Unitary Authorities of Bedford, Central Bedfordshire, Luton, Peterborough, Southend-on-Sea and Thurrock). The Strategy stimulated over 150 successful projects with beneficial economic, social and environmental outcomes, some of which are summarised in the Progress Report 2007.

4 The Monitoring and Action group (MAG) is the partnership steering the Woodland for Life project. The partnership involves the Country Land and Business Association, COVER, Department of Health, East of England Local Government Association, East of England Development Agency, English Heritage, Environment Agency, Forestry Commission, FC Regional Advisory Committee, Green Light Trust, Natural England, Norfolk County Council, RSPB, Suffolk County Council, Writtle College.

5 Much of the content has been underpinned by an updated Woodland Wealth Appraisal undertaken by Dr John Powell and his team of the Countryside and Community Research Unit of the University of Gloucestershire. Their original report was published as the "Wood Bank" of the East of England
www.woodlandforlife.net

6 The MAG has determined that although the six themes reflected in the 2003 document are still valid, policy and priorities have changed; climate change and economic growth are now seen as key priorities. With the East of England likely to be most affected by climate change, communities will need to find ways of addressing this challenge through adaptation and mitigation. Several recent Government and other publications such as the Low Carbon Transition Plan², the "Read Report"³ and the Carbon Plan  set out quite clearly the important role that trees have to play.

7 This draft paper has set out to reflect some of the existing six themes from the Woodland For Life document, albeit with some differing emphasis and to bring into focus how trees can help with the issue of climate change.





8 Throughout this document the basis of all suggestions will remain sustainable woodland management, the overall term used for describing how the use of woodlands can best contribute towards the Government's strategies for sustainable development.

9 The UK Forestry Standard (UKFS)⁴ sets out the criteria and standards for the sustainable management of all forests and woodlands in the UK. It is the centrepiece of a system to guide and monitor forestry. It is linked to the developing international protocols for sustainable forestry; see Annex 1.

Why plan for trees, woodland and forests?

10 Trees and woodlands provide a wide range of benefits, more than any other land use can boast. However to get the most benefits out of these valuable assets it is worth looking at the different ways they can be used and in what circumstances they may add value to a project or community – economically, socially and environmentally.

The benefits of trees and woodland

- a. Recreational opportunities,
- b. Health improvement,
- c. Enhancement of the beauty of the countryside,
- d. Protection of historic assets,
- e. Revitalisation of derelict and degraded landscapes,
- f. Improved settings for housing and industry creating a sense of place
- g. Supply of timber and other products,
- h. Exploitation of food resources,
- i. Opportunities for tourism and sport,
- j. Employment generation,
- k. A source of renewable energy,
- l. Educational resources,
- m. Habitat and wildlife conservation,
- n. Pollution reduction,
- o. Removal of carbon dioxide from the atmosphere and carbon storage
- p. Protection and improvement of soil and water quality
- q. Flood attenuation
- r. Climate change adaptation in urban areas

Vision

11 The vision behind this document is that: communities, businesses, and local authorities in the East of England make the most of the benefits that trees and woodland bring to the economy, to society, for the environment and addressing climate change.

Current policy drivers

12 There is a plethora of legislation, agreements and policies at global, European and national levels related to trees, woods and forests. Whilst it is not possible to list all those relevant they cover a range of subjects including forestry, rural and urban living, sustainable development, renewable energy, environmental issues and land use. Policy documents that have a bearing on woodland and woodland management are listed in Annex 2.

13 There has been recognition of the importance of ecosystems services as highlighted in the consultation document, "An invitation to shape the Nature of England"⁵; this could prompt a genuine boost to valuing trees and the contribution they make to our well being.

2. East of England Woodland and Trees – valuable assets

14 The recent Woodland Wealth Appraisal 2010⁶ updated and built on the 'Woodbank' published in 2003 which attempted to put a monetary value on the 'natural benefits' which the existing woodland in the East of England provide. These natural benefits provided by environmental assets are often difficult to quantify, but they underpin the welfare of society and its supporting economy.

15 Woodland has a role in providing valuable opportunities to benefit human health and well being, our economic sustainability, maintaining environmental assets and addressing the imperatives driven by climate change. The estimated value of woodland in the East of England is put at £1.3 billion; this is a midpoint value estimate and represents the level of wealth generated by forest and woodland each year.

16 There are about 144,000 hectares of woodland in the East of England, or 7.6% of the total land area. In addition, there are approximately 13.5 million trees outside woodland in the countryside, 14,000 kilometres of hedgerows with a high proportion of trees and an immense but unquantified urban tree stock. All told, trees and woodlands are a vital part of the character of the East of England, both rural and urban. The area of woodland has increased steadily and significantly over the last 100 years, with the most obvious examples being the mainly coniferous woodlands established from the middle of the 20th century. Since 1980 there has been over a 25% increase in area, over half of this has been through planting small woodland blocks of predominantly broadleaved species.

17 Whilst the extensive coniferous plantations of Thetford Forest are the largest blocks, 38% of the total woodland area consists of woodland less than ten hectares in size with 19% being less than two hectares.

Table 1. Summary of Woodland Wealth as at 2010

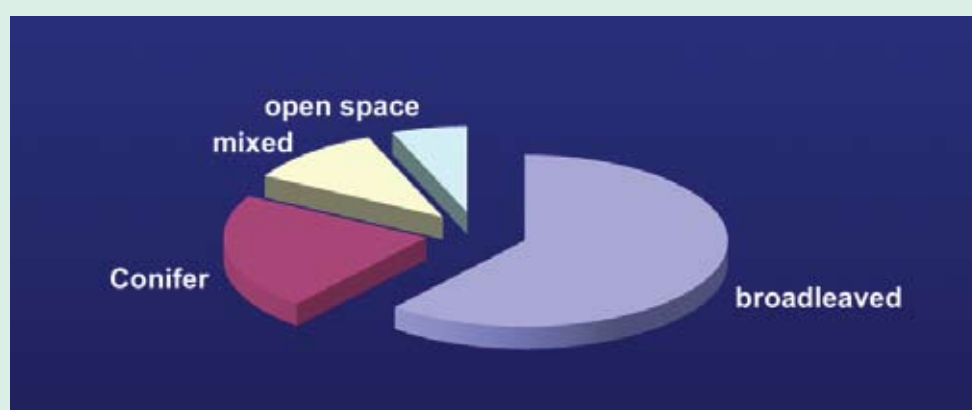
Market benefits	£ millions
Field sports and game	81.0
Timber and wood products	345.5
Recreation and tourism	550
Housing and industry	30.6
Other benefits	
Air quality and water management	33.5
Biodiversity	71
Carbon sequestration (annual figure)	41
Health costs avoided	(19.5)
Education costs avoided	(1.23)
Landscape	124
TOTAL WEALTH	£1,297.3 or 1.3 billion
Carbon asset stocks	3,306

18 There are a large number of designated and undesignated parklands, areas of wood-pasture and historic landscapes, in which trees and woodlands play a major part, many are of international importance. English Heritage maintains a register of parks and gardens. www.english-heritage.org.uk/caring/listing/registered-parks-and-gardens

19 The East of England has a diverse woodland resource with broadleaved woodland the dominant forest type representing 6 % of all woodland. Conifer woodland represents 22%, mixed woodland 11% and open space within woodlands and felled areas 6%. Corsican pine is the main conifer species and Oak the main broadleaf species.

20 The percentage of this that has been designated as ancient semi-natural (i.e. it has existed relatively unchanged in species composition since at least 1600) is higher than the national average. As well as being a very important nature conservation resource, ancient woodland is the repository of significant quantities of archaeological artefacts and ancient woodland often preserves evidence of pre wooded landscape and historic woodland management practices.

21 Woodlands of nature conservation significance are not limited to those that are ancient semi-natural. For example, the coniferous areas of Thetford and on the Suffolk coast, where Corsican and Scots pine predominate, are of international importance having been designated as Special Protection Areas for woodlark and nightjar.



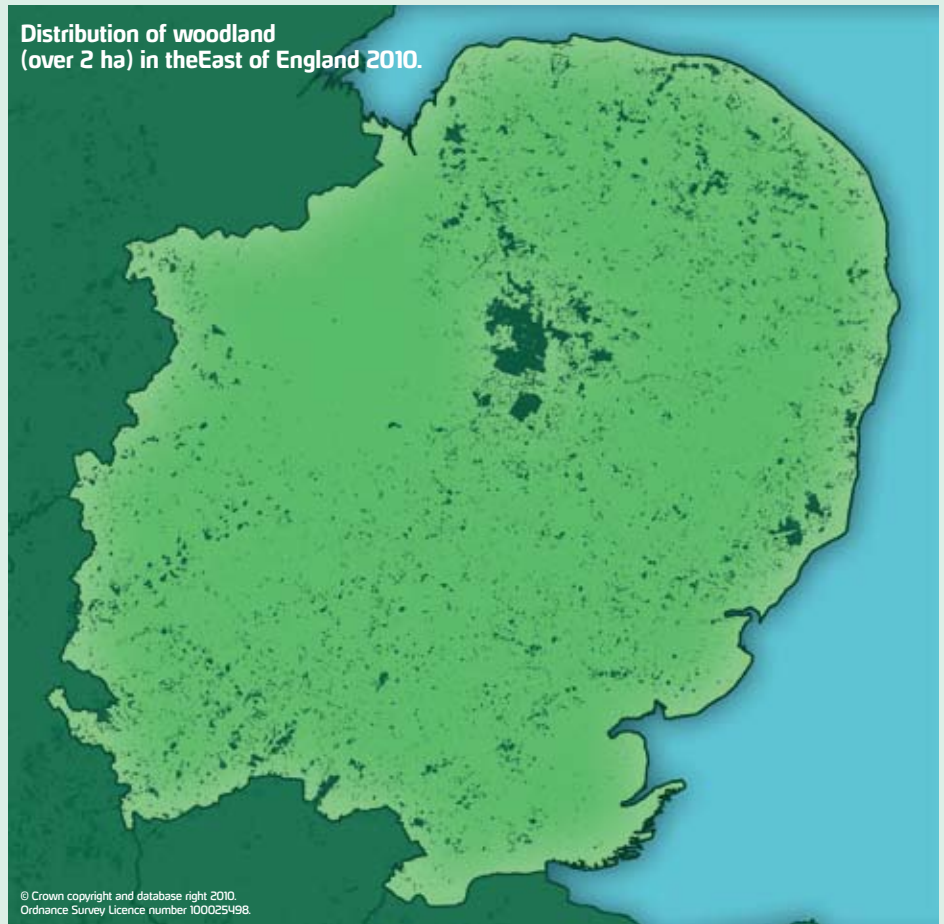
22 The woodlands encompass a rich diversity for example; Cambridgeshire's woodlands of particular interest are oak-ash on the clay soils and ash-hazel-field maple on the chalkier soils, both of which are associated with distinctive ground flora. Norfolk has important wet woodlands and rare woodland species such as the spotted flycatcher. Suffolk has a heritage of wood-pasture and parkland, Staverton Thicks being the prime example. Essex is noted for its ancient hunting forests of Epping, Hatfield and Hainault, as well as native black poplar. Bedfordshire has a series of ancient woodlands along the Greensand Ridge and Hertfordshire includes part of the Chilterns beech woods and is important for many species that depend on a long continuity of woodland cover, particularly plants, fungi and invertebrates.

23 The woodlands of the region provide a very important recreational resource, with an estimated 21.2 million leisure visits per year (ELV survey 2005). Of the total woodland area of the East of England, about 70% is privately owned, 18% managed by the Forestry Commission with the remainder owned by charities and local authorities.

24 Trees associated with public green space, streets and private gardens are a vital part of the character of all the towns and cities and affect many more people on a daily basis than do rural woodlands. In many cases, potentially very harsh townscapes have been dramatically softened by the presence of trees; they also provide much needed shade in summer and help improve air quality.

25 Of the national Community Forests three – Marston Vale, Thames Chase and Watling Chase have been established in the East of England, which have encouraged the creation of multi-benefit woodland in areas that had suffered considerable landscape degradation close to urban centres. There are also other important local initiatives such as the Norfolk County Council community woodland scheme.

Distribution of woodland (over 2 ha) in the East of England 2010.



Ecosystems services – natural benefits

26 In 2000 the United Nations developed the Millennium Ecosystems Services approach⁷, which brought together the variety of ways in which nature delivers benefits and support to humans called ecosystem services or 'natural benefits'. This approach could be used by decision makers, planners and policy makers to help them take account of those services when making development decisions so as to ensure continuity or increase in services.

27 This approach recognises the way in which the physical and biological components of the environment work together as a single functioning ecological system i.e. an 'ecosystem'. An ecosystem will include the plants and animals which make up a habitat as well as the other elements which enable the habitat to function; including soils, water, climate, human management etc. A whole planet, a forest or a single tree can be an ecosystem.

28 Ecosystems provide a range of benefits some of these are essential for life e.g. if taken on a planetary scale the regulation of the climate (see diagram overleaf).

Figure 1. Example of eco-systems services provided by woodland



History and Heritage

29 Trees and woodlands are an integral part of the landscape and history of the East of England. Many of the woodlands have existed for hundreds of years, and as such they help define historic landscapes. In parts of the East of England, the rural landscape pattern has remained relatively unchanged since mediaeval times. The East of England also has many internationally important parks and gardens designed by some of the greatest landscape designers – Holkham and Wimpole estates being good examples.

30 Individual trees can be very long lived, in some cases extending to many centuries. They can be cultural features in their own right, for example Kett's oak in Norfolk. Norfolk County Council has developed a database of over 5000 such trees which can be found on their biodiversity information service website.

31 As well as being part of the heritage, woodlands are frequently the repositories of some of its best-preserved archaeological features. They may contain features relating to woodland management, including wood banks and saw pits, and many other land-use artefacts. The general lack of cultivation within woodlands has meant that a variety of archaeological remains are to be found in relatively undisturbed condition. Examples include Bronze Age burial sites and villages, Roman field systems and mediaeval houses. The apparently ancient woodlands to the south of Grafham Water, for example, contain perfectly preserved ridge and furrow – evidence of mediaeval agriculture.

32 In many cases, the presence of such sites is unknown as few woods have been subject to systematic survey and recording. The archaeological features surviving in woodlands have great educational and recreational potential. Thetford Forest masks the remains of an internationally important warrening industry that thrived for centuries on poor Breckland soils before the forest was planted. www.brecsoc.org.uk/projects/warrens-project/



33 The woodlands of the East of England have long provided materials for construction purposes and there are many very fine examples of wooden church roofs and timber framed houses, a prime case being the village of Lavenham in Suffolk. These illustrate the extreme durability of wood as a construction material, with many being over 500 years old.

34 Sustainable woodland management practices respect the cultural heritage of the East of England encouraging the creation of new woodland that is in keeping with local landscape character and avoiding damage to any subterranean archaeological sites. The Forestry Commission publishes a series of guidelines on this and other subjects.

Threats

Development

35 Development is one of the biggest threats to woodland and its biodiversity and despite the financial crisis and the slump in the housing market there will continue to be a need to house the increasing population and maintain the economic buoyancy enjoyed by the East of England. Development pressure, whether for housing, industry or transport infrastructure, can result in felling of trees and woodlands. The population of the East of England is projected to grow from 5.7 million to 6.3 million, growth of 10 per cent over the period 2008 to 2018, the highest percentage growth rate of

all regions of England⁸. Looking at ways development can incorporate woodland can lead to innovative developments and more sustainable communities.

36 The fact that trees and woodlands would need to form an integral part of these developments is accepted by Government: in the consultation draft – 'an invitation to shape the Nature of the Environment'⁹ it states:

37 "England's Trees woods and forests, ranging from individual trees to networks of woodlands in the countryside are a unique asset – rich in biodiversity, popular places for recreation and leisure, producers of products such as fuel and wood for use in our daily lives and an important part of our response to climate change. We need to manage and expand this resource sustainably – for our generation and for future generations recognising all of these multiple benefits"

38 There is huge potential to use local wood for a range of construction related products. With the UK currently the world's largest importer per capita of timber and second only to China in value, some £11 billion, there is enormous potential.

39 Wood forms a valuable habitat for a number of key species and although the total area of woodland in the region has continued to increase, there are situations where woodlands may be lost to create other habitats and there are other threats such as deer.




Habitat restoration to non-woodland habitats

40 The removal of recent plantations from important semi-natural habitats (particularly lowland heath) and wet woodland to create reed beds has increased in recent years. This removal is in response to the UK Biodiversity Action Plan and it is likely that there will be continued pressure in the future. The recently published Open Habitats Policy of the Forestry Commission sets out a process for establishing open habitats such as that of heathland in the Brecks. The policy can be found here: www.forestry.gov.uk/england-openhabitats

Excessive browsing

41 The very high deer population in the region continues to threaten the success of woodland regeneration and a number of SSSIs are in poor or unfavourable condition due to this. Although, in the majority of cases woodlands will continue to exist, their structure and composition are likely to be significantly altered. The Deer Initiative, a partnership of organisations involved in the management of land, is responding to this threat and with the support of EU funding through the Rural Development Programme for England, Defra and the Forestry Commission has established the Wild Venison Project in the East of England. This project provides grants to stimulate the development of a wild venison supply chain to ensure a number of beneficial outcomes: reduce habitat loss and enable woodland regeneration by removing deer, reduce road traffic accidents caused by deer and bring unmanaged woodland back into management.

Pests and disease

42 Climate change and the expansion of international trade are likely to increase the threat posed to Britain's woodlands by tree pests . In response the Forestry Commission, with Private Sector support, has set up a Biosecurity Programme which aims to "Preserve the health and vitality of our forests, trees and woodlands through strategies which exclude, detect, and respond to, existing and new pests and pathogens of trees, whether of native or exotic origin."

43 Biosecurity Programme Board will include representatives from across the Forestry Commission, Forest Research and the forestry and wood using sectors.

44 As there is a possibility that disease and pests become a greater threat to trees, species choice and provenance of trees for planting new woodlands will become an important consideration. For example we may still be planting oak but it may be we need to plant genetic stock from Southern Europe.

3. Trees and the Climate Change

Trees can help enable the East of England to move to a creative and competitive low carbon economy and help communities to become more sustainable by managing resources.

Impact of climate change

45 The East of England is likely to feel the impacts of climate change more than most given the soft coastline and low lying nature of the land and because it is already one of the driest regions in the UK. By the end of the century, it is forecast¹⁰ that there will be.

- Hotter, drier summers (between 2° and 5°C warmer and 30% to 60% drier),
- Milder, wetter winters (between 1.5° and 3.5°C warmer and 15% to 35% wetter),
- More frequent extreme high summer temperatures and winter rainfall, and
- An extended thermal growing season of up to 50 days.
- Reduction in summer moisture may prevent tree growth on very thin, free-draining soils,
- Increasing soil-moisture deficit may limit species choice, especially where a species is at the limit of its range because of moisture availability,
- Growth rates may be enhanced or reduced dependent on species, and population densities of mammalian pests are likely to increase due to milder winters and increased forage availability during spring – the critical period.
- Disease and insect pests may increase as trees are subjected to greater environmental stresses.

46 Changes to the climate over the next 40-50 years are largely inevitable. Mean annual temperatures for the UK are expected to rise by between 3 and 6 degrees by 2080, winters will get warmer. Summer rainfall may fall by 50% whilst winter rainfall may increase by up to 40%, so summer drought and winter flooding may become more common. We also know that summer soil moisture levels will reduce.

47 These changes will have an impact on our trees and it will be necessary to plan for the future to help trees and forests cope and at the same time help communities adapt. Trees can help in three ways – mitigation, adaptation and renewable energy.

Mitigation

48 The concept of trading in carbon offsets (whereby businesses or individuals offset the carbon dioxide -CO₂ they produce by engaging in CO₂ saving or sequestering activities) is gaining ground. Although sequestration projects are not included at present in the official EU Emissions Trading Scheme (ETS)¹¹, a number of voluntary schemes include woodland planting.

49 Increased woodland cover for social, environmental and economic reasons will also bring carbon sequestration benefits in the short and medium term – and an attractive way of helping to meet national targets as well as providing other significant benefits.



50 Trees have a crucial role in regulating our climate. Through photosynthesis they remove CO₂ from the atmosphere, binding it and storing it as carbon. The carbon is held in the forest biomass, the trunks, branches, foliage and roots. There it will remain until the tree is felled for fuel or for timber. If for timber it may well get locked away in a building or product for years. In young forests carbon is taken up quickly and in mature forests a balance is reached where carbon sequestration balances that lost by decay reaching a steady state. At this point the forest becomes carbon store – a reservoir of carbon which can be released when trees are destroyed. By protecting and managing forests we can maintain the carbon already locked in.

51 One estimate suggests the maximum rate of carbon accumulation in woodland in the UK is 10 tonnes of carbon per hectare per year (tC/ha/yr), and the average over a full commercial rotation is closer to 3tC/ha/yr. Forest and woodlands account for around 80% of the vegetation carbon stock in the UK. Forest soils sequester a large amount of carbon and plant matter is the single most important source of carbon in the soil. This soil carbon can be increased by planting native hardwood species.



52 Carbon uptake in the East of England associated with existing woodland, (assuming a uniform age distribution) is estimated¹² to be 484 thousand tonnes of carbon dioxide per year (kt/CO₂/yr) for conifer woodland, and 527 kt/CO₂/yr for broadleaf woodland (or, a total of 1.1 million tonnes CO₂/yr), excluding soil carbon sequestration. In 2010 the value¹³ for the annual increment in carbon sequestration in the East of England is just under £60 million per year, rising in value to £342 million per year by 2070. The estimated stock of carbon locked up in the woodlands and trees is estimated to have a total present value of £3.534 billion based on the current stocking level with values rising over time in line with the predicted increases in the value of the traded price of carbon. This is only an illustrative figure as this carbon value is unlikely to be realised.

53 The recently published Carbon Code www.forestry.gov.uk/carboncode provides rigorous carbon measurement protocols and outlines how to encourage a consistent approach to woodland carbon projects, helping to offer clarity and transparency to customers, reassure the market and investors about voluntary woodland carbon projects, and help to construct a framework that may support a mandatory market for woodland carbon credits in the future

54 The expansion of schemes following the Code may provide opportunities to bring more investment into woodlands. It would also be appropriate to keep a range of sequestration options (like the "Green Fund" project sponsored by the Dutch government) under review for opportunities to link them into the wider ETS.

Adaptation

55 Whilst carbon storage or sequestration forms part of the drive to reduce greenhouse gas emissions that the climate is set to change is inevitable due to the level of CO₂ already in the atmosphere.

56 The value of trees and woodland for adaptation needs to be more widely recognised. Urban trees have a cooling effect, remove pollutant particles from the air and trees can also slow down flooding and provide shade along river banks, which as weather may be warmer will be important for fish. Wood is important as an energy source and is vital for displacing the use of carbon intensive materials such as iron, steel and concrete in construction. Every cubic metre of timber used as a substitute for other materials such as concrete or steel in construction saves approximately 2 tonnes of CO₂.

57 The Climate Change Act¹⁴ has set legally-binding targets for the UK to reduce its greenhouse gas emissions by 80 per cent by 2050, and CO₂ by at least 26 per cent by 2020. The key mechanisms to achieve a reduction in carbon emissions are to reduce energy consumption through increased energy efficiency e.g. developing low carbon homes and moving to renewable energy sources. The UK's legally binding target to ensure 15% of energy comes from renewable sources by 2020 – a seven fold increase in just 10 years. The UK Renewable Energy Strategy (July 2009) supports a scenario where more than 30% of electricity, 12% of heat and 10% of transport energy comes from renewables.

58 To encourage this various incentives have been established: Renewables Obligation, Renewable transport fuel obligation, feed in tariffs, permission for Local Authorities to sell electricity to the Grid and a Renewable Heat Incentive has just been introduced.

Renewable energy

59 Wood is a clean renewable carbon neutral energy source. Biomass, which includes wood and short rotation coppice, is seen as an essential element in the delivery of the 12% of heat from renewables, and the second most significant renewable resource for the country behind wind.

60 Renewables East¹⁵ estimates that currently 8.1% of the East of England's consumed electricity comes from renewables both on and off-shore with on-shore contributing 7.3%. Woodfuel is a valuable source of energy in particular as heat. Woodfuel was identified in 2003¹⁶ as a major opportunity, especially for private woodland owners based on the estimates of undermanaged woodland in the East of England and poor quality roundwood production.

61 Evidence suggests the market for woodfuel has expanded since 2003 and will continue to grow into the future based on grants for wood heating and concerns over fossil fuel price rises. The 2003 study indicated the major market was firewood, but more recent developments suggest the market for wood pellets and woodchips is growing.

62 At the local level there is a great deal of opportunity to benefit from using woodfuel in the generation of heat, or combined heat and power and potential for communities to benefit from this market in the longer term making woodfuel a locally owned and managed product helping to generate jobs and reducing fossil fuel use.

63 With the support of funding from the Rural Development Programme for England, Woodfuel East¹⁷ was established in 2008 to encourage the supply chain for wood fuel. The project aims to stimulate the woodfuels industry in order to encourage woodland management and has a target of 110,000 green tonnes timber harvested per year (log value of approximately £11 million/annum gross) and a target of stimulating 120 full time equivalents (FTE) jobs. It is estimated that woodfuel currently adds around £5.2 million to the regional economy. Woodfuel East have been able to offer grants for boilers, equipment for sustainably harvesting wood fuel and for supporting the log sector. Figures show that a substantial number of wood burning stoves have been installed over the last couple of years and the value of woodfuel has increased significantly as current suppliers are unable to meet demand.

64 The market for heating is actually larger than that for electricity in the UK, accounting for 45% of total energy use. Moreover, wood fuelled heating is probably the lowest cost of all renewables both in terms of capital and delivered energy costs.

65 The technology for burning wood to produce heat and power is well developed, tried and tested throughout Europe and increasingly so in the UK. Here in the East of England a number of landowners are installing boilers to use fuel wood from their own forests, on some of the larger estates woodchip district heating systems are being installed to heat tenants properties. There are also a developing range of boilers on the market for domestic use such as using pyrolysis which are extremely efficient.

66 Woodfuel East has been instrumental in helping to remove a number of constraints which were outlined in the 2003 Woodlandforlife document¹⁸ namely:

- Small woodland size,
- Diverse ownership,
- Alternative uses, particularly sporting and nature conservation,
- Uneven distribution, and
- Lack of skills and supply chain infrastructure to get fuel from wood to end user.

67 Guidance on issues surrounding planning applications for biomass can be found in the Woodfuel Development Guidance on the Biomass Energy Centre website¹⁹.



4. Woodland – The Economic benefits

Trees can offer significant opportunities for economic development, especially in rural area through developing the timber, tourism, recreation and game and associated industries

68 The economic value of woodland to the East of England economy is estimated to be in the region of £1.0 billion per year²⁰. This is made up from the direct value to the timber industry and the more indirect values such as, increases in house prices, inward business investment, recreation and tourism activity which generate real spend in the region but for which there is no market transaction with the woodland owner.

69 A healthy, viable and competitive woodland business sector underpins the provision of the wide range of benefits of trees and woodlands to the people of the East of England.

Timber and wood products


70 The production of wood as the raw material for the timber industry has been the main reason for the continued existence of woodland over the centuries, and for most of the last century was the prime rationale for afforestation. Wood is a very versatile, renewable raw material that is being used in ever increasing quantities at global and national levels; Britain imports 85% of requirements.



71 In fact the UK is the second largest net importer of timber in the world, by value, at US \$11 billion per annum. Overall timber related industry supports 2,789 full time equivalent jobs, arising from direct or indirect effects of timber production. £115 million is added to the economy from timber processing, £49 million from arboriculture, and £33.5 million from wood products including wood fuel (believed to be an under estimate).

All together a total economic input to the East of England of £345.5 million.

Low carbon economy potential

72 A report published by InCrops in 2010  looks at the potential for low carbon supply chains for timber in construction, identifying the resource, the market potential and the constraints.

73 Woodland and its forest products have a significant role in a low carbon economy. The use of timber in buildings or other long service life products locks up carbon. In addition, the benefit of the substitution effect of not using carbon intensive materials outweighs the carbon stored in the products²¹.

74 Other wood using industries apart from construction include manufacturers of:

- Furniture,
- Fencing,
- Garden furniture and buildings,
- Craft products,
- Cricket bat blanks (the East of England provides the raw material for many of the world's cricket bats).

75 Given that the UK is the second largest importer of timber next to China, There is huge potential to use local wood for a range of construction related products.

76 The value of the market for sawn softwood in construction in the East of England is estimated to exceed £100 million per annum. UK softwood usage in housing construction in 2007, totalled 64 million m³ of which only 15%, or just below 1 million m³, was produced in the UK.

Opportunities

77 Estimates from the Forestry Commission and the Private Sector suggest that from 2022 to 2026 there is approximately 365,000m³ roundwood softwood available per annum. In 2009 the softwood consumption by the existing sawmills was 146,000 green tonnes (for pine it is reasonable to say that 1 green tonne is equivalent to 1 m³). Some of this capacity will be imported from other parts of the UK and abroad; some regional timber will be exported. Thus there is at least 200,000m³ of additional softwood theoretically available by 2022-26 than currently milled. If 120,000 green tonnes were used for biomass energy the remaining sawn softwood would provide timber for almost 19,000 new houses per annum if those homes were traditional brick and block houses²².

78 Conservative estimates of hardwood (broadleaved) timber indicate that there is at least 100,000m³ of unutilised hardwood timber in the East of England plus a similar volume of wood that could be used sustainably for woodfuel.

79 Estimates of timber availability exclude all street and garden trees and small copses. There is no reason why wood and timber should not be produced from these trees; doing so would raise the awareness of a much larger population to the realities of the sustainability of wood production.

Limitations

80 A number of factors prevent the realisation of the full economic potential of the woodlands of the region:

- A perceived poor quality of much of the wood resource,
- Damage by pests,
- Fragmented, small ownership,
- Accessibility to woodland for management and harvesting,
- Lack of market information,
- Diminishing skills base in woodland management, harvesting and haulage.

81 In terms of ownership, the 144,000 hectares of woodland in the East of England, represent 76% of the land area. Approximately 26,000 hectares (18%) of this is managed by the Forestry Commission with the majority (82%) owned by other public bodies, charities or private companies and individuals. It is further estimated that about 61,000 hectares of the woodlands of the East of England are currently under managed. This fragmented often small sized woodlands is a hindrance to management. In some cases it may be necessary to encourage the better management of these areas if important benefits they provide are under threat.

82 Whilst the climate and soils of the East of England should facilitate the growth of high quality broadleaved and coniferous timber, past management practices and exploitation have frequently militated against this. There is common agreement that effort should be expended to improve the quality of timber grown in the region. Such material will always have greater saleability, but will require a very long-term commitment to sustained management which will need to address some key issues:

- The issue of pests and diseases. For example the very high populations of deer and grey squirrels have in the past resulted in further reduction in value due to browsing and bark stripping damage.
- The nature of woodland ownership is such that the economies of scale required for cost-effective wood production are only occasionally achievable.
- Other than in Forestry Commission woodlands, rarely is there adequate access for lorries of the size now commonly used for timber transportation.
- The implications of climate change and species choice.



83 Even where markets are present, there is often a lack of information exchange between those markets and timber growers. Many wood using businesses do not even consider using local timber and many growers are very conservative in their marketing, relying on traditional buyers and not seeking alternatives.

84 Any increase in the rate of woodland establishment, woodland management and timber harvesting would all have positive impacts on woodland economics and therefore employment; the greatest resulting from harvesting operations

85 What is of particular concern in the region, however, is the decline in the number of experienced woodland workers and contractors. It is predicted that the situation will worsen as the industry is failing to attract sufficient young people with a resultant increase in average age of the workforce. It is feared that many of the skills required to manage small, lowland broadleaved woodland will decline, just at the point when the importance of these woods for the multitude of benefits they provide is being fully recognised

Reasons for optimism

86 On a more positive note, timber prices appear to have stabilised at a higher level than in recent years and improving market conditions have encouraged contractors to return to the industry.

87 The woodfuel market is particularly buoyant. After only two years the Woodfuel East initiative has encouraged an additional 51,000 green tonnes of woodfuel to come to market by the end of 2013, reflecting a carbon saving in Carbon Dioxide (CO₂e) of 43,000 tonnes. This will bring an estimated 14700 hectares²³ of woodland into management over a projected 10 year period, much of which will have been previously unmanaged.

88 There are a number of primary wood processors, almost entirely sawmills, in the East of England ranging in size from medium sized industries to micro businesses. Of particular importance are those that process softwood grown in the region. Some of these have invested to improve productivity and so are providing important opportunities for growers to supply them with timber. The larger businesses and those processing high-grade timber mainly obtain their raw material from outside the region; many associated with ports.

89 There is a wide range of products, apart from wood and timber that can be harvested from the woodlands of the East of England including:

- Charcoal,
- Venison,
- Other animals (game birds),
- Fungi,
- Fruit and berries, and
- Foliage for floristry.

There are thriving 'cottage industries' based on some of these products, although they rarely generate any income for the woodland owner.

Recreation and Tourism

90 Recreation and tourism are major industries for the East of England, according to the 2005 England Leisure visits survey report²⁴ there were some 175 million leisure visits to woods and forests in the East of England (54 million of these are categorised as tourism visits). The average spend on these visits to woods and forests generated an average spend per trip of £35.69, this provides an estimated overall spend of some £193 million. However this forms just a small part of the overall recreation spend generated by woods and forest which is estimated to be around £550 million annually.



91 Woodlands form an integral part in over 100 tourist attractions in the East of England, either as attractive settings (such as Dedham Vale and the Chilterns) or in their own right. Numerous tourist venues within the East of England are largely or partially associated with woodlands. It has been estimated that woodland contributes significantly to about 20% of the region's 'out of town' attractions, as well as contributing more generally to the visitors' experiences of a day out or holiday in the region. Some wooded areas are already major tourism magnets: Thetford Forest (part of the Public Forest estate managed by the Forestry Commission) is the third most visited attraction in the region with over 1.5 million visitors annually.

92 As well as being attractive places to visit, woodlands can provide a range of tourism facilities including:

- Heritage trails,
- Camping and caravan sites,
- Cabins and cottages,
- Organised, specialist sports,
- Cycling,
- Concert venues,
- Visitor centres,
- 'Safaris' and bird/mammal watching.

93 Holiday destinations which use forests as a backdrop such as Centre Parcs at Elveden generate considerable indirect value to the economy of the East of England – adding some £15 million from wages and £2.5 million from contracts locally and within the East of England. Given the considerable value of tourism, it would seem that interventions to enable more areas to benefit or derive greater value from this sector would provide a good return on investment.(ROI) and increase employment especially in rural areas. Whilst tourism is a significant sector for rural economic growth it also has the potential to benefit biodiversity and enable management of currently unmanaged woodland.



Case Study
Center Parcs





Field sports and game

94 Pheasants and venison production are likely to be the most significant of these products. Deer are currently culled to reduce damage to tree crops and biodiversity interest and a Wild Venison project has been set up to support the processing supply chain.

95 A number of other animals can be reared within woodland to mutual benefit if properly managed. These include pigs, wild boar, cattle and hens, and sheep and horses within wood pasture. Silvopastoral systems involving all these species have been traditional management practices in many parts of the East of England

96 On average, shooting holdings have: three times as much woodland as non-shooting, and three and a half times the average level of woodland for England. The importance of woodland appears to increase in direct proportion to the commitment to game, in many cases all woodland management is related to the sport. On holdings where woodland is used for game shooting, positive management practices such as coppicing, ride management and shrub planting have been introduced, these are especially noticeable where sport is the main objective. Management for pheasant shooting tends to lead to greater woodland retention and planting

97 The provision of pheasant shooting and deer stalking are principal woodland management considerations for many woodland owners. These activities generate significant income, and thus strongly influence management decisions and provide considerable contributions to local rural economies and employment. Contribution to the economy is estimated at £81 million (WWA 2010).

98 Some concerns have been raised at the potential adverse impact of intensive pheasant raising on ecologically important woodlands. The Forestry Commission has published guidance in association with the Game Conservancy on woodland management practices to limit such impacts.

Housing and industry

99 The contribution of green infrastructure, which includes trees and woodland to land and property values, local economic regeneration and making an area more attractive to inward investment has been demonstrated by a number of studies. The creation of the National Forest for example increased the number of local jobs by 4.1% and local regeneration using green infrastructure attracted £96 million of investment (Centre for Economic and Social Regeneration, 2004). For every 1% added to the tax base by well designed and located tree cover, an additional £15.9 million of annual revenue could be created.

Flooding

100 In the East of England as many as 125,000 properties are at risk from flooding, woodland has the potential to ameliorate flooding by slowing down run off. If the woodland in the East of England were to reduce this risk by 1%, this would have an annual worth of £880,000.

5. Woodland and Communities

Trees are an important part in the development of new and existing communities to deliver a sense of place to enable a better quality of life through – better health and wellbeing.

101 Woodlands have an important role on the agenda for communities, for development, culture and identity, education, local economy, health, recreation, for a sense of place, in summary – for the quality of life. Leisure visits to woodlands are made for a variety of reasons, from quiet contemplation to noisy, adventurous activities. Many health and wellbeing benefits are provided by moderate but sustained physical exercise and psychological well being. For many people there are spiritual benefits which can be gained by walking and taking activity in a woodland setting.

Health and wellbeing

102 The quality of the environment is a vital factor in health, wellbeing and quality of life. The quality of the urban environment and the wider landscape and countryside in which it sits has an effect even though we may not realise it. The cleanliness of our water, the air and the character of our neighbourhoods are important to our health and trees play an important part in maintaining these qualities which we rely on. They also play an important part in physical, mental and spiritual wellbeing.



Case Study
**Clinks Care Farm,
Norfolk County Council**

103 The health impacts are likely to be greater in well-designed, variable woodland. The major benefits are:

- Psychological well being. Looking at, or travelling through, treed landscapes reduces states of stress and anxiety;
- Regular moderate exercise in well-designed, accessible woods can lead to a reduction in heart disease and other physical illnesses;
- Strenuous exercise, such as mountain biking and orienteering, can have greater beneficial health effects;
- Some evidence for improved post-operative recovery rates in hospital wards overlooking wooded settings;
- Improvements in air quality as trees filter pollutants;
- Provision of shade in urban areas so reducing ultraviolet radiation exposure.

104 A leading example of light outdoor exercise for health benefits is the 'Green Gym' promoted by the British Trust for Conservation Volunteers (BTCV). This uses the countryside as a health resource, involves the local community in practical conservation work and promotes conservation activities as beneficial to physical and mental health and as occupational therapy.

105 A considerable body of evidence has gathered over the past few years about the importance of green infrastructure (of which woodland is a part) and its

benefit to health. Through improvements in physical activity, restorative effects, promotion of psychological health and mental wellbeing and directly by reducing pollution through trees acting as filters, capturing particulates on leaves and needles.

106 Cardio Vascular Disease cost the UK economy £29.1 billion in 2004, with coronary heart disease (CHD) and cerebrovascular disease accounting for 29% (£8.5 billion) and 27% (£8.0 billion) of the total respectively. Only the cost of mental illness surpassed the cost of Cardio Vascular Disease.

107 By increasing the level of activity, avoided health care costs in the East of England could lie in the range £6-14 million/yr, and if the non-health care costs are included the total avoided costs are in the range £12-£27 (mid point 19.5million/yr). This is a conservative estimate as it only takes into account one disease (CVD) and does not account for the potential of physical activity in woodlands to cause reduction in costs associated with a wide range of other illnesses such as mental illnesses which costs the economy an estimated £26.1 billion a year. There are number of organisations that either focus on, or include projects using walking therapy to promote good mental health. For example the Discovery Quest Project for Julian Housing based in Norwich www.julianhousing.org/pages/services/discovery_A5.pdf



Case Study
Branching out



Recreation and access

108 Given the benefits of woodland for health and wellbeing the issue of access becomes very important. Local communities are at the heart of determining what is needed in a local area and there is an appetite for an increase recreational opportunities and the greenspace to achieve them. These may also be linked to energy production, economic development and biodiversity targets.

109 The Countryside and Rights of Way (CROW) Act 2000, as well as providing the "right to roam" on heath, down and registered common land, requires local highway authorities develop Rights of Way Improvement plans and sets the scene for strategic access.

110 The Forestry Commission has a policy of open access and many of the Woodland Trust woodlands also are accessible. Anyone in receipt of Forestry Commission grant usually has to make provision for access, however there are many wood for which access is denied to the general public.

111 The Woodland Trusts 'Wood for People' project began in 2002 with the aim of producing as comprehensive an inventory of accessible woodland across the UK as possible, an ongoing programme developed by the Woodland Trust and Forestry Commission England, supported by Forestry Commission Wales and Scotland, and the Northern Ireland Environment Agency. Woodland is defined as "land under stands of trees with, or the potential to achieve, tree crown cover of more than 20 per cent". This is taken from the Forestry Commission's National Inventory of Woodland and Trees15, (now the National Forest Inventory).

112 Accessible woodland is defined as "any site that is permissively accessible to the general public for recreational purposes". This includes sites with unrestricted open access and restricted, but permissive, access (e.g. fee-payable, fixed-hours access). www.woodlandtrust.org.uk/en/about-us/publications/key-publications/space-for-people/pages/space-for-people.aspx



Case Study

Recreation – get fit and go green city park project



Green Infrastructure

113 The benefits of green infrastructure have been well researched

www.forestry.gov.uk/fr/INFD-8A9A2W as multi functional space which performs numerous roles from transport links (cycling and walking) to wildlife corridors.. In 2010 the Forestry Commission launched "The Case for Trees in Development and the Urban Environment" this document sets out the case for more trees in order to fulfil Climate Change, Environment, Economic and Social objectives.

114 There are several examples in the East of England where the role of green infrastructure has been seen as integral to the development of sustainable communities.

115 For example, Haven Gateway has been designated as a Growth Point, the Haven Gateway Partnership was established in 2001 and aims to enable the development of 65,100 homes and 49,700 jobs by 2021. The partnership aims to establish a framework for the delivery of high quality green infrastructure over the next 20 years, complementing and supporting planned housing and development.

116 Within the Haven Gateway 'The Living Landscapes' is a concept developed by the Wildlife Trusts to deliver integrated habitat and recreational management at the landscape scale. A partnership with the Wildlife Trust, Suffolk County Council, Natural England, Suffolk Coastal District Council Forestry Commission and the Suffolk Coast and Heaths AONB Unit are working to develop an integrated biodiversity audit of the

Living Landscapes area whilst developing a Recreation Strategy for the current and proposed Haven Gateway population.

117 GreenArc is a strategic Landscape Partnership located in the North West quadrant of the Green Belt of London. The GreenArc founded in 2004 is a partnership of local authorities in Essex and Hertfordshire whose aim is 'bringing the BIG OUTDOORS closer to everyone – by creating, linking and managing extensive and valued landscapes for people and wildlife around London' www.greenarc.org

118 The GreenArc extends from the urban suburbs of London to rural landscape of Essex and Hertfordshire along strategic landscape corridors such as the Lee Valley and Stort Valley. The GreenArc has a high density of ancient woodlands and there are opportunities for buffering of these ancient woodlands, wet woodland creation along the Stort and Lee Valleys and creation of urban woodlands around Growth Points such as Harlow. The current GreenArc strategy is being reviewed and in Hertfordshire the new GreenArc Strategy will be incorporated into all the Local Development Frameworks.



[Click here to return to Contents](#)

Education

119 Forest Schools which began in Scandinavia have become well established in the East of England. These use the forest as classrooms for regular trips for over 150 schools in the East of England. The benefits of these open air classrooms have been well researched but are difficult to express in monetary terms.

120 Profound links have been demonstrated between the quality of play space and grounds, and the observed behaviour relationships and attitudes of the pupils who use them. Evidence suggests that improving the quality of the space in which learning takes place will bring about dramatic changes in behaviour and relationships, reduce accidents, ease tensions, reduce bullying and confrontation and provide increased opportunities for learning.

121 Research in Norway suggests that spending part of school time in small woodlands has a positive influence on children's (5 to 7 years) motor development skills. It was found that natural landscapes provided a stimulating and varied play environment, with a positive relationship between landscape components and play activities. Enabling children to develop more fully in a range of ways, both as individuals and as part of society.

122 Each Forest School provides a permanent, natural, but safe, setting which children visit throughout the year in all weathers. This provides freedom to roam and experience the natural world through practical activities. Although Forest School sessions are mainly run for pre-school age children, both older disaffected children and those with learning difficulties can thrive in the positive atmosphere. Participants learn and explore in a constructive way encouraging them to be active. Giving confidence in the outdoors and the tools to develop healthy lifestyles as well as providing a unique and unforgettable learning experience.

123 The Forest Education Initiative (FEI) is a partnership between the Forestry Commission, Woodland Trust, Timber Trades Federation, Forest Industries Development Council, BTCV, Local Authorities, Field Studies Council, Tree Council and Groundwork. It aims

to increase the understanding and appreciation, particularly among young people, of the environmental, social, and economic potential of trees, woodlands and forests and of the link between the tree and everyday wood products. It acts as a facilitator and works with teachers and others to produce resources that help to deliver the requirements of the National Curriculum for schools. There are now many more opportunities to look at education and learning for young people outside the curriculum but still through the formal education process, for example through after school activities. Learning is a lifelong process. Trees and woodlands can play an important role in this.

124 Through well-designed programmes, it is possible to increase public awareness of their environment, heritage and history within woodlands. Relationships to and with nature can be changed and awareness of global environmental issues with local implications increased, illustrate such topics as the carbon and water cycles. Woodlands can provide settings for adult learning, particularly those who don't learn in formal educational environments.

125 The range of opportunities is considerable but includes; guided walks, interpretative material in woodlands, workshops, training courses, working holidays, and woodland craft holidays.

126 Although the real value of education is difficult to estimate in monetary terms as the aim is to develop the individual, enabling an individual to gain a wide number of skills that will benefit both them and society. However, a conservative figure of £0.82-£1.64 million per year has been estimated for East of England for educational benefits.



Equality and diversity

127 The pattern of recreation usage raises issues of social inclusion. A disproportionately small percentage of people from multi-ethnic, low-income areas and less than half of those without cars are involved in woodland recreation. With careful siting, design, planning and management it should be possible to adopt measures to balance participation rates, although there are also issues of people's perception and confidence that must be tackled.

128 Increasingly activity may be more organised and require travel to larger sites. Of particular relevance is the growth in interest in woodland cycling, paintball, archery and horse riding but also organised forest walks, forest drives, visitor centres and picnic sites. The use of woodlands as a setting for art is becoming increasingly common and includes such events as concerts, plays and sculpture.

129 Publicly accessible woodlands, both urban and rural, are key places where people feel they can 'get away from it all', and there may be a desire by some to get more actively involved with local woodlands. The great variety of well-preserved archaeological monuments and features within woodlands merit presentation and interpretation as educational assets and visitor attractions.

130 There is a lot of scope for attracting more families to woods, although individual requirements vary. For example mothers with young children want secure, low cost, accessible opportunities in which play facilities are provided whilst families with older children seek more strenuous activities.



Case Study
Khush Dil



Community Engagement – Big society

131 One of the most important indicators of quality of life is the extent to which people feel that they have a stake in the community in which they live and work. Engaged communities are much more likely to take pride in their neighbourhood, which in turn can reduce vandalism and antisocial behaviour. This may include an attachment to a particular settlement or neighbourhood, opportunities for involvement in local decision making, or direct involvement in community based activities.

132 A sense of place and community can be greatly influenced by a clear understanding of the local historic environment which may be influenced by tree and woodland cover.

133 The establishment and management of trees and woodland are prime activities in which people can be involved and are frequently their first experience of community engagement. Opportunities exist for participation from the initial planning of woodland creation, through planting and subsequent management to utilisation of woodland products.

134 The Big Tree Plant launched on the 2nd December 2010, aims is to plant one million trees by April 2015, in England's towns, cities and neighbourhoods. Delivery is through a partnership approach: civil society partners and conservation organisations working with the Department for Environment, Food and Rural Affairs (Defra) and the Forestry Commission. <http://thetreeplant.direct.gov.uk/index.html>

135 Local involvement is not just a benefit in itself. Particularly where woodlands are to be created or managed primarily for the public benefits they provide, the input and engagement of local people can greatly enhance those benefits and engender a sense of ownership and responsibility.

136 Greatest benefits can accrue where there is a sense of ownership of the resource being managed. This can be achieved by delegating responsibility, particularly of publicly owned woodland, to a local community, or by direct ownership of land.



Case Study
Forest for Peterborough

Built environment

137 Trees in the built environment (urban trees) can radically transform the appearance of urban areas adding to property value and creating a more people friendly setting, but they do more than this.

138 Trees help combat the effects of climate change by shading and cooling, for example the London Plan proposes an extensive programme of tree planting which it is estimated will eventually reduce the city's surface temperature by 3-4 degrees. Trees act as natural filters for airborne pollutants, they help reduce noise and can affect the behaviours of drivers reducing speed. Dutch research shows neighbourhoods with good tree cover are statistically healthier than less green urban areas. Trees have a measurable amenity value and there are several methods of calculating this the four well known methods are CAVAT, i-Tree, Helliwell and DRC method; each of these look at different things.

139 Trees and woodlands in and around the built environment can contribute towards creating places where people want to live and work and help define the cultural identity of urban areas. There is a danger that if urban trees and woodlands are taken for granted they will decline in vitality and number. They can suffer from a range of threats including salt spray, aerial pollution, high temperatures and trenching for services. It is of equal, if not more, importance to manage urban trees and woods as those in rural areas.

140 The Big Tree Plant campaign may not just be a catalyst for engaging with communities and developing volunteers, but for encouraging enterprises to partner with communities to develop urban tree and woodland management plans and energy schemes. There may also be opportunities for Local Authorities and Local Enterprise Partnerships (LEPs) to think strategically about where woodland will bring the most benefit.



Case Study
Torbay – putting a value on trees

Urban fringe and land restoration

141 The urban fringe is an important element to the perceived quality of life in many urban areas though it may also be an area of degraded landscape quality. Around London the majority is designated as 'Metropolitan greenbelt' and the Government is committed to continued protection of this designated land.

142 The improvement of such areas could provide a number of key benefits. Tree and woodland establishment, in association with other habitat types, in such areas can make a very positive contribution to all of these aims. As discussed in other sections, trees and woodlands can provide a superb recreational resource, encourage community engagement, greatly enhance amenity values and increase biodiversity. It is also important, however, to ensure existing woodland is protected.

143 Among the benefits provided by trees and woodlands in urban and urban fringe areas are:

- The establishment of a green framework within which new developments can be merged with minimal visual intrusion;
- Reduction of polluting particulates
- Reduction of heat island effect;
- Through integrated planning, housing can be linked to informal recreation opportunities with woodland providing safe and attractive settings for footpaths and cycleways;
- High quality environments increase property values and attract industry quality surroundings can help reduce stress and improve productivity in the workplace;
- They can act as wildlife corridors addressing concerns raised in the Lawton report.



144 There may be opportunities to improve the quality of the urban fringe by tree planting to provide a wide range of benefits for local communities. The Green grid idea could be transferred to other urban areas. Adding connectivity to habitats and enabling access for communities – Green byways linking urban populations to prime recreational greenspace.

145 The planting of trees and woodlands along roads can help mitigate noise and pollution and woodland belts can provide very good visual screens. Belts of evergreen species, in particular, between residential areas and busy roads can act as air filters and result in improved air quality as well as dampening noise. The presence of trees can also reduce the likelihood of fog.

146 It is important to have the right tree in the right place. Any negative impact can be mitigated by careful planning and management. All highway authorities manage urban trees within their responsibility, but detailed management proposals including phased removal and replacement strategies are rare, there may be scope for using the outcome of management regimes to produce woodchip.

147 If we assume that woodland is a valuable resource and all evidence points to this, then wherever possible the chance to increase woodland cover can provide opportunities for future wood use. Transport corridors can offer areas for planting, rest stops can be made more attractive as in France.



Case Study Thetford loops



Land restoration

148 The Community Woodland Network is an interactive network for community woodland groups to share information and resources. There are three Community Forests in the East of England:

- Marston Vale
- Thames Chase
- Watling Chase

149 Since their inception, the community forests have played a key role in revitalising the areas around many of England's towns and cities. The three Community Forests are directly implementing landscape enhancement schemes in some of the most degraded parts of the East of England. They have also helped deliver a successful balance of economic, social and environmental benefits to those communities. Because of the community forest programme, half of England's population now lives in, or is within easy reach of, a community forest. Woodland is being established on degraded land of all types around the region, especially within the Community Forests. Local Authorities are encouraging woodland as the after use of some landfill sites.

150 The Land Trust provides long-term sustainable management of open spaces across the country. It was formed in June 2010 as a charity – with influential members and trustees – and a company limited by guarantee. Woodland establishment can be an important means of regenerating urban and industrial wasteland, and it is considered one of the most cost-effective and technically successful 'soft' end-uses. Continued landscape enhancement of degraded areas can build on the experience and expertise of the Community Forests.

151 There are places where other habitats may be more appropriate, but there are a number of benefits that would accrue from woodland establishment:

- Pollution amelioration;
- Improvement of land and property values and the stimulation of inward investment;
- Shelter and energy conservation;
- Improved community perceptions;
- Mitigation of liabilities;
- Savings in the management of landscaping schemes.



Case Study Marston Vale Community Forest




6. Woodland and the Environment

A high quality environment is essential for all aspects of human endeavour and for its own sake, it is essential that it is protected and enhanced and resilient to the impact of climate change.

152 The environment, our biosphere and all its resources is fundamental to all that human society does, the economy is the method by which we distribute those resources. Trees and woodlands are a vital part of our environment. They are important and diverse habitats invaluable in their own right but they also can have impacts on other components of the environment and climate.

153 The Government has produced a biodiversity strategy for England "Working with the Grain of Nature". Amongst other measures set out in the Strategy is the commitment to develop and support biodiversity partnerships in the English regions and at more local levels.

154 The Natural Environment and Rural Communities Act 2006  requires all public bodies to have regard to biodiversity conservation when carrying out their functions. It is sometimes referred to as the 'biodiversity duty'. It aims to raise the profile of biodiversity and embed consideration of biodiversity in decision making across the public sector

155 An independent review of England's wildlife sites and ecological network was launched in September 2009. The review considered whether England's collection of wildlife areas (both the legally protected areas and others) represents a coherent and robust ecological network that will be capable of responding to the challenges of climate change and other pressures. The review was chaired by Professor Sir John Lawton who was supported by a panel of 14 members, his report called "Making Space for Nature", was published by the Secretary of State for Environment, Food and Rural Affairs and Defra, on the 24 September 2010.



156 Making Space for Nature made a number of key proposals: 'that the overarching aim for England's ecological network should be to deliver a natural environment where: Compared to the situation in 2000, biodiversity is enhanced and the diversity, functioning and resilience of ecosystems re-established in a network of spaces for nature that can sustain these levels into the future, even given continuing environmental change and human pressures.

157 The report also recommended that this be underpinned by three objectives:

1. To restore species and habitats appropriate to England's physical and geographical context to levels that are sustainable in a changing climate, and enhanced in comparison with those in 2000.
2. To restore and secure the long-term sustainability of the ecological and physical processes that underpin the way ecosystems work, thereby enhancing the capacity of our natural environment to provide ecosystem services such as clean water, climate regulation and crop pollination, as well as providing habitats for wildlife.
3. To provide accessible natural environments rich in wildlife for people to enjoy and experience.

158 The East of England supports a rich and diverse natural environment with many rare habitats and species. This biodiversity is important as it benefits us all in so many ways. Quality environment allows the potential of a number of ecosystems to benefit and in turn they provide economic and social dividends through an improved quality of life.

159 The key challenges for the East of England are:

- Increasing the extent of semi-natural woodland cover,
- Bringing more ancient woodland into active management,
- Creating woodland where it will link or buffer existing habitat,
- Better recording of heritage woodland resources,
- Better protection for veteran trees,
- Restoration of coniferised ASNW,
- More universal application of the UK Forestry Standard, and
- Encouraging traditional industries that will give economic purpose to coppice and wood-pasture systems.



Biodiversity

Components

160 Woodland is an important element of landscape and vital for its role as habitat for a number of species of flora, fauna and fungi. Woodland forms an essential part of many Sites of Special Scientific Interest (SSSIs).

161 Trees and woodlands contribute greatly to the biodiversity of the East of England. Of greatest importance are those woodlands that are Special Areas for Conservation (SAC), Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI), or Ancient Semi-Natural Woodland (ASNW). An ASNW has been continuously wooded since at least 1600 and consists of site native species of trees and shrubs. They are the closest to truly natural woodlands that exist in Great Britain having been managed by traditional and sustainable means and as such are irreplaceable ecological and cultural assets. The region has a higher percentage of ASNW than the national average, and the designated woodlands are an underestimate of the true resource as wood-pasture was generally omitted from the original list, as were all woodlands under two hectares in area.

162 Ancient woodlands that have been converted from site-native to other species, generally conifers, are termed Plantation on Ancient Woodland Sites (PAWS). These woodlands frequently retain remnants of the original ancient woodland communities, including understorey, ground flora and dead-wood fauna. By careful and judicious restoration of these woods to site-native tree species, it may be possible to recreate the characteristics of ASNW.

163 The biodiversity interest is not limited however to these two woodland categories. The extensive conifer plantations of the Sandlings and Thetford Forest have been designated as SPAs due to their international importance for woodlark and nightjar.

164 Hedgerow and other non-woodland trees are also of great importance for biodiversity and landscape. In many cases they are under threat from agricultural intensification and climate change.



Contribution

165 All woodlands provide habitats for a range of flora, fauna and fungi. Even small, recently established, woodlands within otherwise intensively cultivated land can be useful although their scope is limited by their isolation and, in certain circumstances, can harbour pest species. It is vital to consider the interaction and interdependency of woodland and other habitats (e.g. unimproved grassland, fenland and hedgerows). Trees and small woodlands can bring aspects of the countryside, particularly birds and mammals, into the heart of urban areas, where they can contribute to quality of life by bringing people into daily contact with nature.

166 Local Biodiversity Action Plans (LBAPs) provide local guidance to enable them to play their part in delivering UKBAP. Some LBAPs were developed ahead of the national Habitat and Species Action Plans (HAPs and SAPs).

167 A series of UK Habitat and Species Action Plans (HAPs and SAPs) have been agreed for nationally important habitats and species. A large number of these are relevant to woodland (40% of habitats and 30% of species).

168 The first set of Habitat Action Plans (HAPs) contained measurable UK targets to maintain, restore or create habitat, usually for the period 1996-2010. A more comprehensive list of HAPs have now been extended to cover the period from 1996 to 2015. The relevant woodland related targets for the East of England are:

Native woodland:

- Restore 3200 hectares of non-native plantations on ancient woodland sites to native woodland.
- Create 6400 hectares of new native woodland.

Wood-pasture and parkland:

- Restore 40 sites of derelict wood-pasture and parkland to favourable condition.
- Expand 12 sites of wood-pasture and parkland, in appropriate areas, to help reverse fragmentation and reduce the generation gap between veteran trees.

Landscape

169 Trees and woodland help to define the landscape and also provide the backdrop for our villages and towns in the East of England. The value of landscape in the East of England is estimated to be worth £124million per year, this is based on the value that people are prepared to pay for a view of woodland.

170 Perhaps the most widespread public benefit of trees and woodlands is their contribution to landscape. Attractive landscapes benefit the general quality of life of local residents, can influence inward investment and underpin a significant part of the tourism industry. Whilst there are some places where attractiveness is partially dependent on the absence of tree cover, landscape evaluation techniques generally view trees and woodland as major positive components.

171 Ancient woodlands are important features in a number of areas; existing plantations, for example in Brecks and along the Greensand Ridge, are of major regional significance; tree presence is critical in terms of defining certain landscape types, such as parkland, river valley with wet woodlands and the carr woodland of fen edges; woodland and hedgerows can be of considerable importance as historic features, while farmland shelterbelts/tree lines and wooded areas are of importance in giving character to the more open parts of the region; there are several specific landscape types affording opportunities for new/regenerated woodland areas.



172 The scenic quality of the East of England is very diverse, The Landscape Forum in the East of England (Landscape East) which has been in existence since spring 2004, originally as a county council officer networking group. Has over the last few years commissioned studies including development of a Regional Landscape Framework based on an agreed typology. www.landscape.org.uk

173 To protect the landscape from damaging changes, Environmental Impact Assessments are required for new woodland planting or clearance that may have significant environmental effects. This ensures the effect on the landscape and biodiversity can be taken fully into account in the decision making process and opportunities taken to mitigate adverse impacts.

Soils

174 Sustaining our soil resource is of fundamental importance, as the optimal operation and functioning of other environmental resources, such as water, are dependent on soil health. Soil is a medium for plant growth underpinning habitat and ecosystem functioning and food and fibre production.

175 Woodland soils tend to have a structure that greatly enhances their ability to perform these functions compared to arable land. The lack of cultivation results in a more open texture, increased organic matter content and greater activity of soil fauna. The presence of tree roots tends to make the soils more stable and less prone to erosion. The tree canopy and litter layer reduces the impact of heavy rain thereby limiting the likelihood of erosion due to flash flooding.

176 The East of England has extensive areas of soils that are very vulnerable to wind and water erosion (sands and peat) and compaction (heavy clays). The establishment of shelter-belts or hedgerows can reduce wind erosion by moderating wind speeds and acting as physical barriers against which blown soil accumulates. Riparian woodland prevents water-eroded soil entering rivers and streams.

177 In areas with heavy clays, woodland soils tend to suffer less compaction in comparison to agricultural uses due to lower levels of 'traffic' and other negative effects. The exception to this norm may be caused by tree harvesting and extraction using unsuitable machinery in wet conditions.

178 Consideration of soil suitability for woodland expansion, and protection of soil function and diversity in management, is central to the delivery of all other benefits. Good soil management is the foundation for the healthy functioning of the region's woodland

Water quality, water management and supply, air quality

179 The water resource cannot be divorced from the soil resource – indeed it is imperative that the soil is managed in an effective way in order to ensure delivery of sustainable water resource benefits (in terms of water quality, water supply and flood management). These types of eco systems services need to be taken into consideration to ensure communities and industry gets the best from the assets available.

180 Woodlands help to:

- Modulate the water cycle,
- Affect biogeochemical cycles (including the carbon cycle),
- Buffer and reduce pollutants.

181 Examples of water management and other tree related effects include: attenuation of downstream peak water flows, reduction in water temperature (and protection of fish populations) through shading by riparian woodland, reductions in soil erosion (which could become greater through drier summers and wetter winters), shade and reductions of 'heat island' effects in built up areas, and removal of pollutants.

182 The East of England is one of the fastest growing areas of the country in terms of population, with a resultant increasing demand on natural resources such as water. The impact of trees and woodlands on the future management

of water in the region is likely to become ever more significant; particularly when viewed against climate change predictions. With the East of England being the driest area of the country and climate change predictions indicating that this is likely to get worse, the resultant demand on water will impact on all uses including domestic and agricultural production.

183 The Environment Agency, the body responsible for maintaining and improving the quality and quantity of water supply, has developed a number approaches to water management, including Catchment Abstraction Management Strategies and River Basin Management Plans.

184 Trees have an important and increasing role in water management. Water entering streams and rivers from agricultural land may be contaminated by fertiliser and pesticide residues, and the effects of soil erosion. Trees planted as permanent buffer strips along watercourses can help remove these pollutants

185 Water abstracted from beneath forest areas tends to have much lower levels of contamination than that beneath agricultural land due primarily to the much lower levels of fertiliser and pesticide application to the crops and improved soil quality.

186 There is some debate about the quantity of water used by woodland in comparison to agricultural land. There is general agreement that deciduous woodland is largely inactive in water use until mid to late May, which allows for an extended period of ground water recharge. When in full leaf, however, there is no argument that woodland uses more water than grassland and most arable crops. It may be that replacing grassland or arable crops with trees could increase the overall water availability. Some tree species, including willow and poplar, have particularly high water demands, which may have a bearing on their future planting in areas where water may become an increasingly scarce resource. There is a need for further research into the relationship between tree species and water use.



Flood Management

187 An increasing risk of flooding is one of the most firmly predicted impacts of climate change. With flood events apparently on the increase (it is estimated that 125,000 households in the region are susceptible) the issues of flood prevention and mitigation measures are becoming increasingly important. It is becoming clear that there are other approaches to solving the problem than by building ever-higher flood defences. The emphasis is turning to pursuing more sustainable means of flood control.

188 One option is for woodland to help alleviate damaging floods, particularly though the planting or restoration of floodplain and riparian woodland in association with the development of more natural river flows. It has been shown that these types of woodland can retain more water on the floodplain, principally due to the trees, ground vegetation and fallen dead wood forming a significant physical barrier to flood flows. Woodland higher up the catchment could also have a role in reducing peaks and troughs in flow rates (by reducing infiltration and acting as 'buffering' water storage). There is also the attraction of other benefits floodplain woodland provides, including enhanced; protection of other important wetland habitats, recreation, more attractive landscape, greater biodiversity, and improved water quality.

189 Opportunities to restore floodplain woodland and to assess its ability to aid flood control, however, are hampered by a number of related concerns. These include the threat of such woodland actually increasing flooding due to backing-up of floodwaters upstream and the blockage of downstream bridges and culverts by woody debris. The risk of such problems arising depends on local factors such as the presence of housing and transportation links, and the capacity and location of flow controlling structures.

190 Other constraints on planting within floodplains include:

- a. Maintenance of appropriate access to the main river channel,
- b. Protection of buried archaeology,
- c. Maintenance of a navigable channel for boat traffic, and
- d. Making sure that summer water flows will not be significantly reduced.

191 The East of England is characterised by a high proportion of the area being flood plain, but the built-up nature of much of this, plus the large number of potential constraints mean that there are likely to be relatively few locations where extensive areas of floodplain woodland could be appropriate. There could be, however, considerable scope for planting a network of smaller riparian and floodplain woods, which collectively could aid downstream flood control.

192 Recent developments in information technology and river modelling mean it should now be possible to determine the most suitable location of floodplain woodland. Geographical Information Systems provide a means by which suitability maps could be produced. Such maps would indicate the scope for future planting in river catchments and thus help to determine the extent to which woodland could contribute to flood control in the future.



Case Study Slowing the flow

Air quality

193 A 2008 study by Lovasi et al finds that tree lined streets have been associated with a lower prevalence of asthma in children, even after adjusting for other factors. In the same year the Sustainable Development Commission reported that admissions to hospital linked to air pollution cost the NHS between 17 million and 60 million a year (Sustainable Development Commission 2008).



7. Support, advice and opportunities

194 Many of the opportunities offered by woodland creation, which are listed in this Chapter, will only be realised in partnerships between Local Authorities, communities, business and the charity and voluntary sector

195 There are a number of supportive mechanisms for woodland creation and the management of woodland:

- a. Direct action by public sector bodies on land they own or manage. The Forestry Commission has been a major player in this respect with both existing woodland areas and land acquisition, as has happened in Thames Gateway;
- b. Use of the planning system to achieve woodland management and planting in association with development;
- c. Targeted grant assistance, both geographical and by objective, particularly to the private sector;
- d. Partnership development and working; combining expertise, effort and resources may improve the ability to implement proposals and attract enhanced funding sources;
- e. Community involvement in decision making and implementation;
- f. Extension services (i.e. advice and support networks);
- g. Market development to improve economic viability, and
- h. Personal enjoyment and philanthropy (i.e. people plant and manage trees and woodland because they enjoy it, or because they want to contribute to society in some way.

Monitoring Progress

196 Local Authorities have a statutory duty concerning adaptation to climate change, the government also published in the Local growth White Paper its intention to make a national presumption for sustainable development. Creating woodland, using woodland, encouraging urban trees and managing the products and benefits of those trees can help with adaptation and this in turn is part of sustainable development.

Business and Corporate Planning

Narrative reporting requirements

197 The Companies Act (2006), recently made changes to the narrative reporting requirements for UK companies.

All companies, other than small enterprises, are already required to produce a business review. In the case of quoted companies, the directors will be required – to the extent necessary for an understanding of the business – to report on environmental matters, employees and social/community issues. Further information is available on the BIS website. www.bis.gov.uk

198 Companies that measure, manage and communicate their environmental performance are inherently well placed. They understand how to:

- Improve their processes,
- Reduce their costs,
- Comply with regulatory requirements and stakeholder expectations,
- Take advantages of new market opportunities.

199 Failure to plan for a future in which environmental factors are likely to be increasingly significant may risk the long-term future of a business uncertainties impact to some extent on all companies, and affect investment decisions, consumer behavior and Government policy.

200 Corporate social responsibility (CSR), CSR-focused businesses proactively promote the public interest by encouraging community growth and development, and voluntarily eliminating practices that harm the public sphere, regardless of legality. Essentially, CSR is the deliberate inclusion of public interest into corporate decision-making, and the honouring of a triple bottom line: people, planet, profit.



Follow up process

201 Any feedback about the how the information has been used or if you can offer further case studies please email to jim.smith@forestry.gsi.gov.uk.

Opportunities for realising the benefits of trees and woodland

202 There are numerous ways that communities, local authorities and businesses can derive benefits from woodland. Some of these are covered in the case studies, this section provides a brief overview under the main headings.

Woodland produce, timber production and marketing

203 Timber production for the UK market offers a number of opportunities:

- Silvicultural systems and woodland management practices aimed at the production of high quality timber could be promoted and supported.
- Encouragement of co-operation between owners to facilitate more economic management, awareness of market needs and joint marketing of produce.
- The development of advisory and information services for woodland management and marketing, including publication of regional timber prices.
- Encouragement of co-operation between growers to agree long-term supply contracts with markets.
- Pooling of timber to allow better market segmentation.
- Continued awareness raising programmes fully supported by timber growers.
- Increased use of local timber by craftsmen. Although this is likely to utilise only a small quantity of the timber produced in the region, it would raise the profile of the material.

- Provision of training, skills development, business advice to make businesses more innovative and competitive.
- Development of silvopastoral systems in suitable woodlands.
- Development of niche markets for fungi, fruit and berries and licensed collection of fungi, fruit and berries.
- Raise awareness of the local timber resource and its use in sustainable procurement practices.
- Develop market outlets to facilitate purchase of local products.
- Encourage craft workers and other wood users to use local wood.
- Develop local branding.

Renewable energy

204 Have you considered if you have woodland or are there wood residues from arboriculture activities in your area? Or is your community considering establishing a community forest/ woodland? There may be opportunities to earn from energy production using wood.

- Are there opportunities for heat and power generation or to develop district biomass (woodchip) heating?
- Have you considered producing your own energy?
- Is there a potential business opportunity for woodchip or log production?
- Can you use trees to help communities to adapt to climate change?
- Are there particular communities that would benefit?
- When looking at planning applications is there scope for biomass heating?
- Are you concerned about 'peak oil'?
- Would your community benefit from a community forest or woodland?
- Do you have a community facility such as a hall where heating could be converted to a biomass boiler?

Tourism and recreation

205 Recreation and tourism as a major part of the economy offers significant opportunities:

- Have you considered woodland settings for tourism and recreation related business?
- What kind of training would provide an enterprise base?
- Are there opportunities for suppliers to support tourist endeavours?
- Are there opportunities to link attractions together in a package?
- Is there a business case for providing new woodland for 'green burials' or other business opportunities where there aren't any at present?
- Can long term timber production be linked to other tourist/recreation based businesses?
- Has your business considered contributing to the carbon saving of the country?
- Providing formal recreation facilities in larger woodland areas; offering economic opportunities for local businesses ensuring self-financing or gain for local communities.

Health

206 A wide range of initiatives could be undertaken that would have health benefits;

- Projects which promote moderate outdoor exercise and conservation work for health,
- Opportunities for expansion of the NHS forest,
- Increase the availability of accessible woodland near to where people live and work, thereby increasing accessibility to a wider range of socio-economic and other groups.

Access

207 To deliver recreation, health and economic returns there needs to be accessible woodland. Some suggested opportunities for increasing access are:

- Information on the location of accessible woodlands.
- Increasing access in existing woodlands, particularly those in leasehold by the Forestry Commission or in private ownership. This may require financial support and guidance on how to manage public access.
- Planting of new woodland where existing accessible woodland is unavailable. This will particularly be in urban-fringe areas. Potential to build on the expertise developed within the Community Forests.
- Engagement with local communities enabling public participation in woodland creation and management to foster a sense of involvement and responsibility.
- Good design to ensure developments incorporate publicly accessible green space with substantial tree cover.
- Archaeological surveys which could involving volunteers, aimed at identifying pre wooded land use e.g. medieval warring and Neolithic flint mining in the Brecklands.

Restoration

208 There may be scope for increasing woodland on land which requires remediation.

- Operational land – in active working (especially mineral working and waste disposal) by planting around the operational area to provide screening.
- Vacant land – previously used but inactive for a significant period of time; derelict or poorly restored land – previously used but damaged and incapable of future use without treatment; contaminated land – represents an actual or potential hazard to health or the environment.

Biodiversity

209 Most opportunities for biodiversity are included in existing Local Biodiversity Action. Some activities however could be instigated at the East of England level:

- By developing opportunity maps for habitat restoration and re-creation that include both woodland and non-woodland habitats.
- Through heightening awareness of the importance of trees and woodlands in biodiversity, particularly within urban areas.
- By actions to help ensure woodland SPAs, SACs and SSSIs are brought into favourable condition.
- By raising awareness of the Wild Venison project and the Deer Initiative.
- Through promoting awareness of the importance of woodland management for biodiversity.

Opportunities to reduce flooding

210 There may be opportunities to use trees to reduce the flow of water and therefore reducing flooding.



8. Case Studies

These are just a small selection of case studies for more examples please access them on the website: www.woodlandforlife.net

Woodfuel – pioneering green firm launched

Staffordshire Wood Fuel, a trading arm of Staffordshire Council is a pioneering new company which will cut costs and carbon emissions in Staffordshire by supplying public and private sectors with woodchip sourced as a by product from its countryside management operations. Staffordshire Wood Fuel, which is a trading arm of Staffordshire County Council, will supply high quality, stable and sustainable renewable energy.

The business will provide the public and private sectors with woodchip sourced as a by-product from the county council's own countryside management operations, and private sustainably managed woodlands in Staffordshire. That's double value for the tax payer – properly managed wildlife rich landscapes, and a major boost to Staffordshire's low-carbon economy.

It's guaranteed quality – that's why the operation will be supplying the county council's flagship Tipping Street development where it will provide heating and hot water for 1,500 people. The offices will save taxpayers around £250,000 per annum for 40 years.

Staffordshire Wood Fuel's arrival will help the biomass fuel market in the Midlands to expand, generating more green jobs and a sustainable economy going forward.

The company will also offer impartial advice on biomass system design, fuel specification and fuel handling.

The technology will be of particular interest to big energy users – companies, leisure centres, schools and commercial developments – offering them the chance to invest to save.

www.staffordshire.gov.uk/environment/woodfuel/

Also;

According to a report by Wardle Armstrong Stoke Council has approximately 1,150 dry tonnes equivalent biomass material available purely from within the city boundary; This would supply four 500kWe Biomass CHP plants 500kWe Biomass CHP plants.

Center Parcs

Center Parcs at Elvedon (Elvedon Forest Park) is a major holiday centre in a woodland setting, employing up to 1700 staff at full capacity, and adds an estimated £11 million to the local economy.

A report by Hallam Environmental Consultants and Sheffield Hallam looked at the value to the Bedford economy of a proposed new Center Parc in their study. The study concluded that Center Parcs' Cyclical Refurbishment Programme aims to spend a minimum of approximately £2.5 million per year per Village (at 2004/5 prices).

The proportion of this expenditure that is likely to be paid to local contractors is £1.54 million. Application of multipliers produces expenditure impact of £1.7 million locally and £2.3 million regionally, arising from this local expenditure. It is estimated that the Programme creates or safeguards approximately 24 jobs locally.

The direct economic effect of a Center Parcs Forest Holiday Village is therefore the creation of approximately 900 to over 1000 FTE jobs. The multiplier effect means that the villages each support a total of 990 to 1100 jobs locally, and 1350 to 1500 jobs regionally. In addition to those directly employed by Center Parcs, therefore, a village supports an additional 90 to 100 local jobs indirectly.

The average wage bill is £10.5 million. This is a substantial economic impact. Applying the Local and regional Multipliers to a net wage payment of £10 million, gives sums of £11 million and £15 million of net wages payment effect injected into the local and regional economies respectively, each year.



Branching Out

Branching Out – greenspace and conservation on referral, is an award winning innovative partnership development for adults who use mental health services within Greater Glasgow and Clyde.

For each client, the service consists of approximately three hours of activities per week in a woodland setting over a 12 week period. The clients take part in a variety of activities during the 12 weeks, including:

- Physical activity e.g. health walks and tai chi
- Conservation activities e.g. rhododendron clearance and willow coppicing,
- Bushcraft, e.g. fire lighting and shelter building
- Environmental art e.g. photography and willow sculptures

On completion of the course there is a graduation ceremony where clients receive certificates of completion, tool handling and achievement. Evaluation of the project showed that it can be used effectively as an additional form of treatment in a secondary and tertiary care mental health population. The cost per head was under £50 per day offering excellent value for money.

Branching Out has won two awards:

- The UKPHA Michael Varnam Health, Humanity and Environment Award 2010.
- Best Green Healthcare Provider' at the Scottish Green Awards 2010.

The service was developed as a result of a partnership between Forestry Commission Scotland, NHS Greater Glasgow and Clyde, Glasgow & Clyde Valley Green Network Partnership, Glasgow Centre for Population Health and Glasgow City Council.

For details of how the project was set up, see Branching Out – Greenspace on referral (PDF 310k).

Recreation – get fit and go green city park project

This is Lancaster City Council's health and fitness joint project with the Forestry Commission at Williamson Park: Where volunteers are involved with a health and fitness project.

Lancaster City Council is going to use volunteers with 'green fingers' to take part in a health and fitness project that is being developed for Williamson Park by the council and the University of Cumbria.

The volunteers will be tasked with physical activities in the park that will improve their health and also give them the opportunity to meet new friends. The project will also improve the landscape of the park and could involve clearing an area in Fenham Carr or working on a joint project with the Forestry Commission.

Students from the Sports Studies degree programme at the University of Cumbria are planning the project with assistance from Lancaster City Council staff at Williamson Park. The project starts later this year (2010) and volunteers will need to be available to attend sessions every Thursday for ten weeks.

The students will benefit from gaining experience from planning the sessions, creating risk assessments and work programmes with guidance from experienced park staff. This work will be officially assessed by the university and will contribute to the student's degree.

Khush dil (happy heart)

This initiative was set up to encourage black and ethnic minority families and community groups to enjoy the health benefits of using woodland. The Khush Dil Active Woods initiative encourages all Asian families and community groups to enjoy the health benefits of woodlands.

Open spaces and woodland provide free and natural venues for regular exercise and physical activity to keep a healthy and happy heart. Supported by Awaz FM, Khush Dil Active Woods is working closely through community groups across Mandirs, Gurudwaras and Mosques.

A promotional leaflet was distributed in community venues to advertise ranger led woodland visits.

www.forestry.gov.uk/forestry/infd-6fdgqa

Forest for Peterborough

The Forest for Peterborough, project is aiming to plant a tree for every person in Peterborough this will result in around 170,000 trees being planted over the next fifteen years. The idea is not to create a single woodland in one place, but it will increase tree coverage, and other types of habitat, in different areas all over the city. launched on 22nd November 2010 the project is about more than just planting trees – the aim is to increase the range of habitats in the city such as grassland and hedgerow as well as woodland creating green corridors throughout Peterborough to allow wildlife to flourish.

The project is looking to get local people, businesses, and landowners to come forward and show their support for the project both for donations of funding and also landowners that could provide space for planting, and volunteers to help plant.

The Forest for Peterborough will involve lots of partners working together. Local schools and community groups will be involved with the project to help people learn about the importance of biodiversity. The long-term vision for this project spans 15 years and beyond. Some of the partners already backing the project include the Forestry Commission, Peterborough City Council, Natural England, RSPB, Nene Park Trust, the Woodland Trust, and the Wildlife Trust. All these organisations, along with PECT, are members of the Natural Networks Partnership. This group makes sure that there are common goals for protecting and enhancing the green spaces in Peterborough. (You can find out more about the Natural Networks Partnership by visiting www.naturalnet.org.uk)



Torbay – putting a value on trees

Torbay has adopted a new computer software package developed in the US which puts a financial value on the ecosystem services trees perform, from reduced air pollution to the amount of carbon dioxide removed. The i-Tree software, developed by the United States Forest Service, is designed to quantify the economic, environmental and social value of trees in towns and cities – in short put a dollar sign in front of them.

The project, at Torbay, in south Devon, is the first time i-Tree has been used in the UK and aims to adapt the software to British currency and conditions.

The senior tree officer Neil Coish said that 'What we are trying to do is get our trees on the local authority's general ledger, then they become assets. That is when we might start getting political support. They benefit us all, but we just take them for granted.'

Surveying all the borough's 28,000 trees, in manicured parks and gardens, orchards, hedgerows, surviving stands of gnarled ancient woodland, or clinging to the side of sea cliffs, (the urban forest) would be impossible. Instead, a small survey site was chosen at random in each of 250 squares drawn on a map, where everything was recorded: how many trees, their species, their size, the vegetation growing alongside, or whether the plot was entirely covered by bricks and concrete.

Currently urban trees are undervalued only 5% of local authorities do any cost benefit analysis. On average councils spend £1.38 per person on trees per year.

www.torbay.gov.uk/index/environment-planning/planning/planningservice/arboriculture/itree.htm

Thetford loops

The town of Thetford on the Norfolk/Suffolk border faces significant challenge due to its designation as a growth point and the need for significant regeneration. Yet its setting is beside the East of England's largest lowland forest (Thetford Forest Park) which itself is a major tourism and recreation centre and has SPA and SAC designations. The town itself is cut off from this forest by the A11 by-pass which is a major route and safe access to the forest by means other than vehicle is non-existent. Facing significant growth of at least 5000 new homes, Breckland District Council and the Moving Thetford Forward partnership looked at how growth could be linked to this major green infrastructure on the doorstep to bring benefits to the town.

Following partnership work, which included the Forestry Commission, on the town's green infrastructure needs, a plan was formulated which has become part of the transport plan in the Local Area Action Plan. Key drivers for this were to encourage healthier lifestyles (Thetford receives money under the healthy Town initiative) and modal shift.

Having found the majority of travel was less than 10 km, it was determined that one of the keys to linking the Forest to the town for the multiple benefits this would bring and to deliver modal shift was via a cycle way – the Thetford Loops. The Loops will be multi-purpose, with high quality routes for pedestrians and cyclists for leisure and utility trips. Masterplans and subsequent planning applications for areas that include parts of the Loops network either running through or adjacent should provide details to accompany any Planning Application and provision for sections of the Loops will be required as part of the development. The Council will seek a legal agreement to enable the subsequent handing over at nil charge to the appropriate body.



The Forest Loops element includes all the forest routes in Thetford Warren, and the area to the west and southwest of the town. The Forestry Commission actively promotes public access, but there is no official route between forest and town. The Loops will link into existing cycle routes which are of varying quality and 'rideability'. The priority routes are based on the use of the highest quality existing forest routes designated by the Forestry Commission as their 'easy, family routes' tracks which already have an adequate walking and cycling surface.

Thetford is also planning to plant 10,000 trees along its routes as part of its green infrastructure plan.

Marston Vale – Community Forest

Community Forests cover large areas around the edges of towns and cities the challenge is to use trees and woodlands to transform 61 square miles between Bedford and Milton Keynes, repairing a landscape scarred by decades of clay extraction, brick making and landfill. The overall vision is to create well-wooded landscapes for wildlife, work and education, with new opportunities for recreation, all on the doorstep of half of England's population.

The project aims to achieve 30% woodland cover by securing opportunities as they arise, promoting stewardship of the land and obtaining the resources to deliver viable woodland creation and other countryside management projects to improve the landscape and physical links between the urban areas and sites within the Vale. Identifying and maximising the opportunities for attracting investment to the area including that from sponsorship, the Lottery, partnerships, grants, the private sector and landfill tax to deliver the community forest and also to create jobs.

By promoting awareness and enjoyment of the countryside to help boost a sense of ownership and caring for the area. Through increasing the number of attractive spaces, places and routes for people to enjoy in the countryside of the Marston Vale on foot, cycle or horseback thereby promoting access for all.

The Forest of Marston Vale began as a joint initiative of Bedfordshire County Council, Mid-Bedfordshire District Council, Bedford Borough Council, the Countryside Agency and the Forestry Commission. Originally the initiative was administered through Bedfordshire County Council with the Forest Team being employed by the authority. Following a successful bid from the Millennium Commission for the Millennium Country Park, it was decided to establish a charity – the Marston Vale Trust to hold the land and develop the site and Marston Vale Services Limited, a charitable trading company wholly owned by the Trust to run the centre and site. This company operates the Millennium Country Park including the Forest Centre a purpose-built venue for conferences, seminars etc. Funds raised contribute to Forest work reducing reliance on external funding.

The Millennium Park has won the Green Flag award twice.

www.marstonvale.org/index.html

Clinks Care Farm – Norfolk County Council

Clinks Care Farm is a 143-acre Norfolk County farm in Toft Monks, Norfolk. It allows GPs' patients to spend time on this working farm as part of their treatment through the groundbreaking 'Farming on Prescription' project. This uses farmland to promote physical and mental health. The Centre for mental health estimated that in 2009/10 the economic and social costs of mental health problems in England came to £105.2 million.

This project is funded through the Innovation Grant from NHS East of England and works in partnership with NHS Great Yarmouth and Waveney, Norfolk and the Waveney Mental Health Foundation Trust.

One project on the farm is to plan and plant edible woodland, more commonly known as a 'forest garden'. This forest garden has the capacity to provide a wide range of crops, such as fruits, nuts, berries, edible leaves, fibres, medicinal plants, honey etc and mimics the vegetation layers found in a wood, e.g. canopy layer, shrub layer, ground cover, climbers. This garden, as well as being a potential place for relaxation, also provides produce that may not be grown elsewhere on the farm, providing an environment for education with links to health and wellbeing, the natural environment and engagement with growing healthy food in a rural setting.

The forest garden was designed by the Environment Section at Norfolk County Council and the planting – which they helped organise – is undertaken by the patients, known as farm workers, along with Norfolk County Council. Several farm workers are now employed on a voluntary basis to act as helpers to the other farm workers.

The project is ongoing with the tree planting, groundcover, herb layers and shrub layers near completion. The other planting is scheduled to fit in with seasonality and growing times, to deliver a long-term project. If successful the garden could be extended, together with the planting of a hazel coppice to provide hurdle making and craft material for use on the farm.

Slowing the flow

Slowing the Flow at Pickering is a project that seeks to demonstrate how better land management can help to tackle the flooding problem faced by Pickering in North Yorkshire, in common with many other towns and cities across the country.

Flooding appears to be an increasingly common event and one that could get even worse with climate change. Pickering has been flooded four times in the last 10 years (1999, 2000, 2002 and 2007), with the last flood the most serious to date, causing damage to homes and businesses valued at approximately £7 million. The impact of the 2007 floods was particularly severe across the whole of the Yorkshire and the Humber Region, with the total damage estimated at £2.1 billion.

'Slowing the Flow at Pickering' (Yorkshire) is an experiment exploring a new approach to flood management using woody dams to slow the flow in the forest water courses. It is about working with nature to try and store more water in the landscape and slow its passage downstream. Whilst this will not prevent all flooding, it is expected to reduce the frequency of future floods in Pickering, as well as deliver a range of other benefits to the local environment and community.

Slowing the Flow at Pickering is a partnership project. It is led by Forest Research, closely supported by Forestry Commission England, The Environment Agency, The North York Moors National Park Authority, Durham University, Natural England and the wider community. The lead funder is Defra.

www.forestry.gov.uk/fr/INFD-7YML5R



Annex 1

The management cycle of timber production in accordance with the UKFS has a key role to play in sustainable woodland management: A series of indicators of sustainable forestry, against which it is possible to assess management practices, have been established for the UK which are linked to wider sustainable development indicators.

The UK Woodland Assurance Standard (UKWAS) has been developed jointly by Government and forestry, environmental and social interests for the independent certification of forest management. UKWAS is based on the UK Forestry Standard and enables timber sourced from certified woodland to access markets which are increasingly demanding credible independent assurance that timber products come from sustainably managed sources. Timber from UKWAS certified woodland can carry the Forest Stewardship Council's internationally recognised label of sustainability.

The UK Forestry Standard (UKFS)²⁵ sets out the criteria and standards for the sustainable management of all forests and woodlands in the UK. It is the centrepiece of a system to guide and monitor forestry. It is linked to the developing international protocols for sustainable forestry;

Sustainable management of woodlands:

- Protects natural resources and the cultural environment (for example by protecting soils and archaeological artefacts);
- Creates and sustains biodiversity e.g. to delivering specific public benefits (for example the habitat for woodlark and nightjar populations);
- Provides funding which can be used to offset the cost of providing public benefits (for example the sale of firewood from a coppicing operation that is carried out for dormouse conservation reduces the net cost of the conservation operation);
- Helps to implement international commitments by promoting the use of timber from sustainably managed resources (and in the process reduces our reliance on imported wood and wood products).

Annex 2

Securing the future: delivering UK sustainable development strategy (HMG 2005).

UK Biodiversity Action Plan (HMG 1994b). Ensures the UK meets its obligations under the Rio (earth summit) Declaration. These are in turn reinforced by general guidance given in Planning Policy Statement (PPS) 9 (CLG 2005) and 'A Strategy for England's Trees, Woods and Forests' (DEFRA 2007).

The UK Low Carbon Transition Plan: National Strategy for Climate and Energy (HMG 2009). Published by central government it includes a commitment to plant 15,000 ha of woodland per annum in England for the next 15 years. This equates to something in the order of 250 ha a year of new woodland in Essex.

Woodfuel Strategy for England (FC 2007). This contains a national target of bringing to market an additional 2 million tonnes of wood, annually, by 2020. This represents approximately 50% of the currently unharvested sustainable yield in English woodlands and would save 400,000 tonnes of carbon emissions annually.

Policy Planning Statement (PPS) 9: Biodiversity and Geological Conservation (CLG 2005). Specifically identifies Veteran trees and ancient woodlands as being matters for special consideration and protection, when being considered by the planning process.

PPS 3: Housing (CLG 2006). The Government expects local planning authorities to have greening initiatives. The planting of trees/woodlands and care of existing trees/woodlands near new developments and existing buildings can help meet these requirements.

Planning Policy Guidance (PPG) 17: Planning for open space, sport and recreation (CLG 2001). Advises that local authorities develop strategies for delivering open spaces that meet the needs of local communities. The planting and maintenance of woodlands can help to improve existing sites as well as helping to increase the number of sites within the area.

Most recently the Environment Consultation paper – an invitation to shape the Nature of England states that... England's trees, woods and forests, ranging from individual street trees to networks of woodland in the countryside are a unique asset-rich in bio-diversity, popular places for recreation and leisure, producers of products such as fuel and wood for use in our daily lives and an important part of our response to climate change. We need to manage and expand this resource sustainably – for our generation and for future generations recognising all of these multiple benefits'.

Sustainable Futures-Integrated Sustainability Framework published in January 2009 although now out of date the key challenges still remain valid for communities, local Authorities and Businesses in the East of England. By making the best use of woodland, trees and forests maximising the benefit they can bring it will help to address several of these:

- Promote sustainable growth within environmental limits
- Reduce greenhouse gas emissions
- Adapt to impacts of climate change
- Increase resource efficiency and reduce recourse use and waste
- Conserve and restore the regions natural and built environment
- Promote employment learning, skills and innovation

The Carbon Plan, first published in March 2011, is a Government-wide plan of action on climate change, including domestic and international activity, which sets out department by department, actions and deadlines for the next 5 years. The Carbon Plan has been published initially as a 'draft' that takes account of the first three UK carbon budgets. It outlines the importance of increasing woodland cover and sustainable forest management.

www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/carbon_plan/carbon_plan.aspx



References

D. Egan, Sheffield Hallam University,
K. Harrison, Hallam Environmental
Consultants Ltd & I.D. Rotherham, Sheffield
Hallam University, December 2005 –
The local economic impact of Center
Parcs holiday villages, with particular
reference to the potential local impact of a
proposed holiday village at Warren Woods
Bedfordshire.

CESR(2004) Much more than trees2:
measuring the social and economic
impact of the national Forest, Staffordshire
University Centre for Economic and Social
regeneration.

Companies Act 2006

Countryside Agency 2005, English Leisure
Visits Survey

Footnotes

1. www.woodlandforlife.net
2. [www.decc.gov.uk/en/content/cms/
what_we_do/lc_uk/lc_trans_plan/
lc_trans_plan.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/lc_trans_plan/lc_trans_plan.aspx)
3. [www.tsoshop.co.uk/bookstore.asp?
FO=1159966&Action=Book&Product
ID=9780114973513&From=SearchRe
sults](http://www.tsoshop.co.uk/bookstore.asp?FO=1159966&Action=Book&ProductID=9780114973513&From=SearchResults)
4. www.forestry.gov.uk/planting
5. [www2.defra.gov.uk/environment/
natural/whitepaper](http://www2.defra.gov.uk/environment/natural/whitepaper)
6. [www.woodlandforlife.net/PDFs/
Wfl_Reappraisal%208pp.pdf](http://www.woodlandforlife.net/PDFs/Wfl_Reappraisal%208pp.pdf)
7. www.maweb.org/en/index.aspx
8. [www.statistics.gov.uk/cci/
nugget.asp?id=2001](http://www.statistics.gov.uk/cci/nugget.asp?id=2001)
9. [www2.defra.gov.uk/environment/
natural/whitepaper/](http://www2.defra.gov.uk/environment/natural/whitepaper/)
10. [www.forestry.gov.uk/forestry/infd-
79ek5z](http://www.forestry.gov.uk/forestry/infd-79ek5z)
11. [www.decc.gov.uk/en/content/
cms/what_we_do/change_energy/
tackling_clima/ccas/uk_ets/uk_ets.
aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/change_energy/tackling_clima/ccas/uk_ets/uk_ets.aspx)
12. Mark Broadmeadow, FC, personal communication
13. [www.woodlandforlife.net/PDFs/
Wfl_Reappraisal%208pp.pdf](http://www.woodlandforlife.net/PDFs/Wfl_Reappraisal%208pp.pdf)
14. [www.decc.gov.uk/en/content/cms/
legislation/cc_act_08/cc_act_08.
aspx](http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx)
15. www.renewableseast.org.uk
16. [www.woodlandforlife.net/wfl-
woodbank/DisplayArticle_2304.
html](http://www.woodlandforlife.net/wfl-woodbank/DisplayArticle_2304.html)
17. www.woodfueleast.org.uk
18. [www.woodlandforlife.net/wfl-rep/
default.html](http://www.woodlandforlife.net/wfl-rep/default.html)
19. www.biomassenergycentre.org.uk
20. Woodland Wealth Appraisal 2010, in press
21. Combating climate Change – a Role for UK Forests: [www.forestry.gov.uk/
readreport](http://www.forestry.gov.uk/readreport)
22. This estimate is conservative as the 120,000 green tonnes for biomass energy may be met in part or majority by the processing co-product from sawmilling and from forest management.
23. To assess volume figures from both owner occupied estates and contractors felling over multiple ownerships, we assumed 1ha of hardwood YC4 thinned at 70% marginal intensity will yield 28 m³ on a 10 year rotation from thinning. Where actual figures from estates are available and lower (or volumes are known to come from high volume interventions such as poplar CF or overstood coppice), the lower hectare figures are used. Also assumes 1 green tonne = 1m³
24. [www.naturalengland.org.uk/
ourwork/enjoying/research/monitor/
leisurevisits/default.aspx](http://www.naturalengland.org.uk/ourwork/enjoying/research/monitor/leisurevisits/default.aspx)
25. www.forestry.gov.uk/planting



Woodlandforlife: Monitoring and Action Group members and advisors

Members have come and gone as jobs have changed, but all those listed here have contributed in some way to the latest piece of work.

MAG members

Gerry Barnes, Chair of the FC Regional Advisory Committee (RAC) & Norfolk County Council

Gary Battell, Suffolk County Council

Natalie Bennett, Natural England

Adrian Cannard, East of England Local Government Association (EELGA)

Katy Harbottle, COVER

Dr Peter Hobson, Writtle College

Nigel Hughes, Green Light Trust

David Kenny, English Heritage

Jeff Kew, RSPB

Corinne Meakins, Forestry Commission (Project Manager)

Giovanna Pisano, Environment Agency

Richard Powell, OBE, National Trust (Chair)

Margaret Read, CO East

Milke Seville, CLA

David Sillett, East of England Development Agency

Neil Wood, Department for Health

Advisors

Mark Broadmeadow, Forestry Commission

Steve Scott, Forestry Commission

Jim Smith, Forestry Commission

Edwin Van Ek, Woodfuel East

Credits

Photography

Front Cover:

Bottom Left: Forestry Commission

Top Left: Forestry Commission

Top Right: Forestry Commission

Bottom Right: Michael Murray

Page 2: Michael Murray

Page 3: Forestry Commission

Page 4: Steve Scott

Page 7: Forestry Commission

Page 8: Isobel Cameron

Page 9 (Left): Forestry Commission

Page 9 (Right): Forestry Commission

Page 10: Michael Murray

Page 11: Michael Murray

Page 12: Forestry Commission

Page 13: Forestry Commission

Page 14: Michael Murray

Page 15: Forestry Commission

Page 16: Robert Rush

Page 17: Forestry Commission

Page 18: Forestry Commission

Page 19: Forestry Commission

Page 21: Forestry Commission

Page 22: Forestry Commission

Page 23: Chris Knight

Page 25: Forestry Commission

Page 26: Forestry Commission

Page 28: Forestry Commission

Page 29: Forestry Commission

Page 31: Forestry Commission

Design

Dynamic Creative

www.dynamiccreative.co.uk

Contact

Tel: **01842 819 089**

Prepared for the Monitoring and Action Group by Corinne Meakins,
Regional Development Advisor, Forestry Commission

