

WOODLAND FOR LIFE

THE REGIONAL WOODLAND STRATEGY FOR THE EAST OF ENGLAND

The East of England Regional Woodland Strategy Steering Group:

Countryside Agency; Department for Culture, Media and Sport;
Department for Environment, Food and Rural Affairs (RDS);
East of England Regional Assembly; East of England Development Agency;
English Heritage; English Nature; Environment Agency; Forestry Commission;
The Forestry Commission's Regional Advisory Committee;
Government Office for the East of England; NHS Health Development Agency

Published by the East of England Regional Assembly and the Forestry Commission

November 2003

Contact: 01842 815 282

Info@woodlandforlife.net

Prepared by Mike Render, Regional Strategy Co-ordinator

www.woodlandforlife.net

CONTENTS

CONTENTS	1
VISION.....	2
INTRODUCTION	3
WHAT IS WOODLAND FOR LIFE?.....	3
SUSTAINABLE WOODLAND MANAGEMENT.....	5
WHY HAVE A REGIONAL WOODLAND STRATEGY?.....	6
WHO HAS WRITTEN THE REGIONAL WOODLAND STRATEGY?.....	8
REGIONAL CONTEXT	9
WOODLAND AND TREES	9
HISTORY AND HERITAGE	11
DEMOGRAPHY	12
GROWTH AREAS.....	12
THE STRATEGY	14
1. QUALITY OF LIFE.....	16
A. RECREATION AND ACCESS.....	17
B. HEALTH.....	19
C. LANDSCAPE	21
D. COMMUNITY ENGAGEMENT.....	23
2. SPATIAL PLANNING	25
A. SITE RESTORATION	26
B. URBAN FRINGE AND BUILT ENVIRONMENT	28
C. TRANSPORT INFRASTRUCTURE	30
D. FLOOD MANAGEMENT.....	32
3. ECONOMIC DEVELOPMENT	34
A. TOURISM	35
B. WOODLAND PRODUCE AND TIMBER PRODUCTION AND MARKETING	37
4. RENEWABLE ENERGY.....	43
A. RESOURCE.....	44
B. INFRASTRUCTURE	44
5. EDUCATION & LEARNING.....	46
LIFELONG LEARNING	47
6. NATURAL ENVIRONMENT	50
A. CLIMATE CHANGE	51
B. SOILS	53
C. WATER QUALITY AND SUPPLY	55
D. BIODIVERSITY	57
DELIVERY METHODS	60
MONITORING PROGRESS.....	60
Business and Corporate Planning.....	60
Sustainable Development Framework	60
Strategy Review Process	61
GETTING INVOLVED.....	61
WHO SHOULD BE INVOLVED?.....	61
GLOSSARY	62

VISION



1. Trees and woodland play vital roles in the social, economic and environmental fabric of the East of England.

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, regeneration of derelict and damaged land, and tourism.

The **environmental benefits** chiefly comprise biodiversity, pollution abatement, soil conservation and protection of water resources.

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

3. The Vision will be achieved through:

- enhanced **awareness raising** and education
- **management** of the existing trees and woodlands of the region focussed on the benefits they provide, and
- continued **tree planting** and **woodland expansion**

4. The implementation of this Strategy will depend on **positive partnerships** between all interested parties, particularly regional government departments and agencies, forestry and woodland businesses, woodland managers and landowners, local authorities, local communities and non-governmental organisations.

INTRODUCTION

What is Woodland for Life?

5. This is the Regional Woodland Strategy for the East of England (consisting of the counties of Bedfordshire, Cambridgeshire, Essex, Hertfordshire, Norfolk and Suffolk and the Unitary Authorities of Luton, Peterborough, Southend-on-Sea and Thurrock).
6. It should be of interest to land owners and managers, policy makers, health professionals, landscape specialists, developers, timber processors and users, the recreation and tourism sectors, those interested in renewable energy, educationalists, environmentalists and foresters.
7. The Regional Woodland Strategy for the East of England provides a number of strategies for the enhancement, over the next 20 years, of the benefits that trees and woodlands bring to the people who live and work in the region.
8. With the active participation of woodland owners, the woodlands and trees of the East of England provide a wide range of benefits that have been divided into six broad themes (see **Figure 1**).
9. The Strategy has been drafted to reflect these six themes and at this stage is therefore deliberately thematic rather than spatial in nature (although several of the actions include mapping tasks).
10. The basis of all actions will be **sustainable woodland management**, which is:

the stewardship and use of woodland to meet the social, economic, ecological, cultural and spiritual needs of present and future generations.

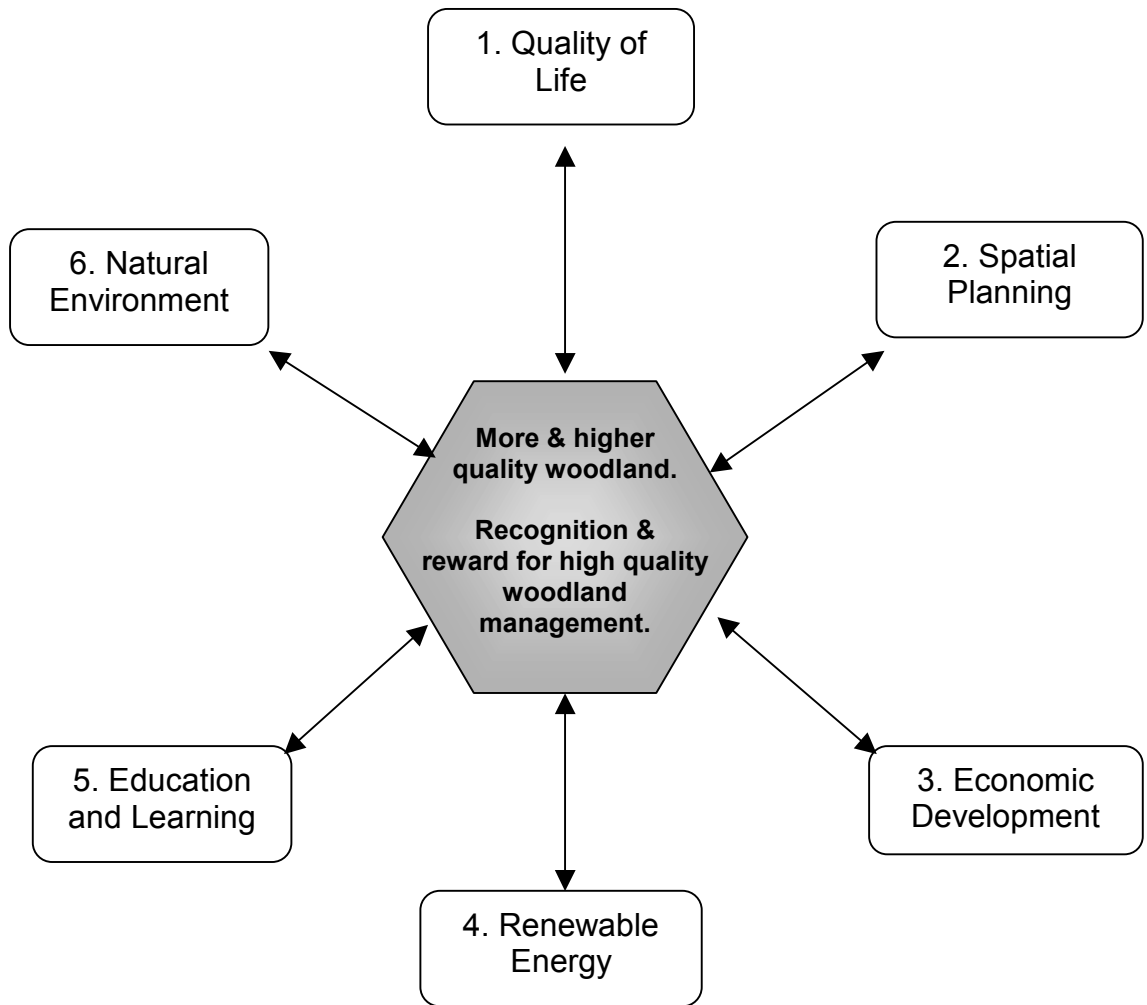


Figure 1 Delivering the benefits of trees and woodland to the East of England

Sustainable Woodland Management

11. Sustainable woodland management is the overall term used for describing how man's use of woodlands can best contribute towards the Government's strategies for sustainable development. More specifically, it represents the basis for supplying economic, social and environmental benefits from woodland management and can complement approaches to integrated land use that are designed to support the delivery of public benefits.
12. The [UK Forestry Standard \(UKFS\)](#) 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.
13. The management cycle of timber production in accordance with the UKFS has a key role to play in sustainable woodland management:
14. 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.
15. 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.

- it protects natural resources and the cultural environment (for example by protecting soils and archaeological artefacts);
- it creates and sustains environments which are favourable to delivering specific public benefits (for example the habitat for woodlark and nightjar populations);
- it 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);
- it 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).

Why have a Regional Woodland Strategy?

16. Trees and woodlands provide a wide range of benefits, more than any other land use can boast:

- recreational opportunities,
- health improvement,
- enhancement of the beauty of the countryside,
- protection of historic assets,
- revitalisation of derelict and degraded landscapes,
- improved settings for housing and industry,
- supply of timber and other products,
- exploitation of food resources,
- opportunities for tourism and sport,
- employment generation,
- a source of renewable energy,
- educational resources,
- wildlife conservation,
- pollution reduction,
- contributing to the stabilisation of the amount of carbon dioxide (a 'greenhouse gas') in the atmosphere,
- protection and improvement of soil and water quality.

17. It is not suggested that trees and woodlands are major contributors to the delivery of health improvement or regional employment for example, but they could play an increasingly

important role. This Strategy aims to direct regional activity to best effect.

18. It does not stand in isolation; there is a plethora of legislation, agreements and policies at global, European and national levels that have a bearing on it. Whilst it is not possible to list all those relevant they cover a range of subjects including forestry, rural and urban living, sustainable development, environmental issues and land use.
19. The key policy document of particular relevance is the [England Forestry Strategy \(EFS\)](#), which sets the Government's four strategic priorities and programmes for the woodlands of England. The production of the EFS led to the establishment of the England Forestry Forum, which recommended the preparation of regional expressions of the strategy, or 'Regional Forestry Frameworks'. Woodland for Life, the Regional Woodland Strategy, is the response of the East of England to this recommendation.
20. This Strategy will help to deliver national policy and interpret it in an East of England context. Whilst it must be guided by national policy it is particularly influenced by regional issues and conditions, it therefore combines 'top-down' and 'bottom-up' approaches.
21. The key to sustainable development in the East of England requires integration of economic development, social progress and environmental quality. This is one of a suite of strategies that together will form the basis of the East of England's Integrated Regional Strategy. The common reference point for all these strategies is the **Regional Sustainable Development Framework** (Figure 2).

22. An important function of this strategy is to influence other regional strategies as they are produced or renewed. This will ensure the roles of trees and woodlands are fully recognised in the delivery of strategic objectives.
23. As this is a regional strategy, it may be necessary to develop some of the proposals at a local level to take account of the great diversity of the East of England in terms of population, landscape and land use.
24. Equally, as a regional strategy, it does not attempt to tackle issues that are national or international in nature. For example, no headway can be made at the regional level in tackling fiscal policy or world timber prices.
25. Whilst it deals with both trees and woodlands, the Strategy does not consider the management of individual urban, garden or orchard trees in any detail. These issues are best dealt with by local authorities and individuals at the local level.



Figure 2 The Regional Woodland Strategy sits within a framework of a suite of strategies that will be brought together and integrated within the East of England Regional Assembly's Integrated Regional Strategy.

Who has written the Regional Woodland Strategy?

26. The preparation of the Strategy has been guided and funded by a steering group comprising:

- Government Office for the East of England (Chair)
- Countryside Agency
- Department for Culture, Media and Sport
- Department for Environment, Food and Rural Affairs (RDS)
- East of England Regional Assembly
- East of England Development Agency
- English Heritage
- English Nature
- Environment Agency
- Forestry Commission
- NHS Health Development Agency
- The Forestry Commission's Regional Advisory Committee

27. Much of the factual content has been underpinned with research undertaken by Professor Paul Selman and his team of the Countryside and Community Research Unit of the University of Gloucestershire. Their report has been published as the "Wood Bank" of the East of England (www.woodlandforlife.net).

28. The strategy has been prepared by Mike Render, employed on a one year fixed term appointment funded by a number of steering group members. Mike is a Chartered Forester with 25 years experience in lowland England, including working on traditional estates, for a local authority, private consultancy and university teaching and research. His particular research interest at Buckinghamshire Chilterns University College, and the subject of his PhD thesis, is the development of policy to deliver sustainable forestry, particularly at the sub-regional level.

29. The process of drafting this strategy commenced with a well-attended conference in December 2002, at which many of the major issues were discussed. There followed wide-ranging consultation with many organisations and individuals before the publication of a 'Draft for Consultation'. Over 1200 copies of the draft were circulated, as well as being available on the web site.

30. The 12-week public consultation elicited about 90 responses, again from a wide spectrum of interests. All of the responses, together with a brief analysis, are available on www.woodlandforlife.net.

31. The strategy, which is a substantially revised version of the consultation draft, and the accompanying Action Plan have both been heavily influenced by the views expressed.

REGIONAL CONTEXT

Woodland and Trees

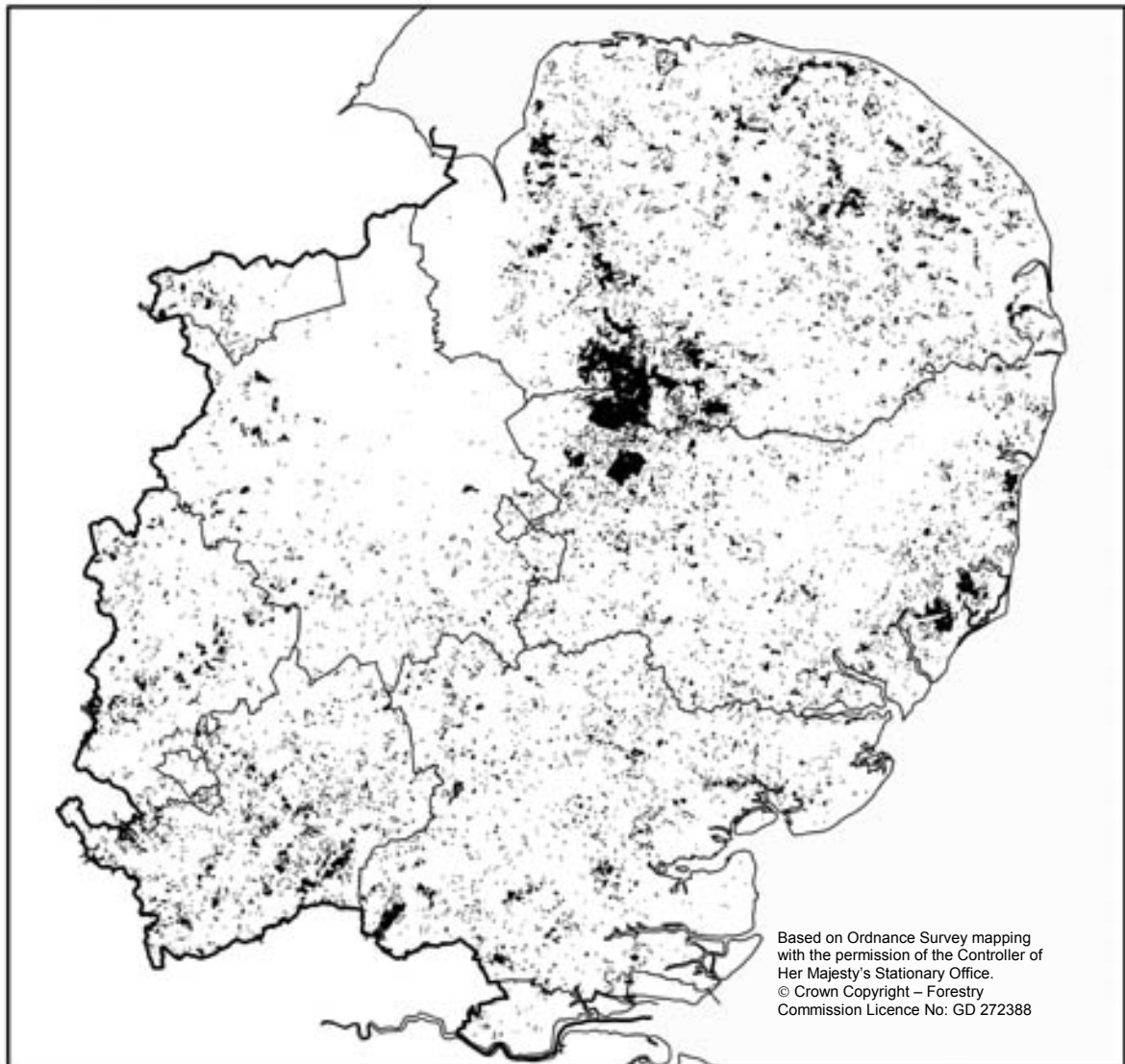


Figure 3 The distribution of woodland of 2 hectares or greater in the East of England

32. There are about 140,000 hectares of woodland in the East of England, or 7.3% 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.

33. The area of woodland in the region 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 a 25% increase in area, over half of this has been through planting small woodland blocks of predominantly broadleaved species.

34. Whilst the extensive coniferous plantations of Thetford forest are the largest blocks, 38% of the total woodland area of the region consists of woodland less than ten hectares in size with 19% being less than two hectares.
35. The East of England has a large number of parklands, areas of wood-pasture and historic landscapes, in which trees and woodlands play a major part, that are of international importance.
36. The majority of the woodland is broadleaved, with the main species being oak and ash. 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.
37. 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.
38. The region's woodlands encompass a rich diversity. 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 beechwoods and is important for many species that depend on a long continuity of woodland cover, particularly plants, fungi and invertebrates.
39. The woodlands of the region provide a very important recreational resource, with an estimated 55 million day visits per year.
40. 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.
41. Trees associated with public green space, streets and private gardens are a vital part of the character of all the towns and cities of the region 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.
42. Of the twelve national Community Forests three (Marston Vale, Thames Chase and Watling Chase) have been established in the region, which have encouraged the creation of multi-benefit woodland in areas that had suffered considerable landscape degradation close to urban centres (**Figure 4**).



Figure 4 Location of the Community Forests in the region.

43. Although the total area of woodland in the region has continued to increase, there are situations where individual woodlands or parts of them have been lost. While removal for conversion to agricultural land has all but ceased, there are three other principal causes of woodland loss in the East of England:

Development pressure, whether for housing, industry or transport infrastructure, can result in felling of trees and woodlands. There is a likelihood that this pressure will continue as demand for housing and infrastructure continues.

Habitat restoration to non-woodland habitats. The removal of recent plantations from important semi-natural habitats (particularly lowland heath) and wet woodland to create reedbeds, 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.

Excessive browsing. The very high deer population in the region is seriously threatening the success of woodland regeneration. Although, in the majority of cases woodlands will continue to exist, their structure and composition are likely to be significantly altered. Unless deer populations are successfully managed in the future, this threat to woodlands will only increase.

44. More recently concern has been expressed over the effects of climate change on trees and woodland.

History and Heritage

45. Trees and woodlands are an integral part of the landscape and history of the East of England. Many of the woodlands of the region have existed for hundreds of years, with a few probably dating back to the original forest that developed after the last ice age, and as such they help define historic landscapes. In parts of the region, 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 –Burghley and Wimpole estates being good examples.
46. As 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.
47. As well as being part of the region's 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 a mediaeval period of agriculture. Care must be taken in the management and restocking of these sites to prevent damage to earthwork features and below ground archaeological deposits. In many cases, the presence of such sites is unknown as few woodlands have been subject to systematic survey and recording.
48. Care should also be taken in the creation of new woodland to ensure it is in keeping with local landscape character and avoids damaging any subterranean archaeological sites.
49. The archaeological features surviving in woodlands have great educational and recreational potential that have been little developed to date.
50. The woodlands of the region 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.
51. Sustainable woodland management practices respect the cultural heritage of the East of England. The Forestry Commission publishes a series of guidelines on this and other subjects and they are consequently not repeated in this Strategy

Demography

52. The East of England's population of 5.4 million is unevenly distributed across the region. Density is greatest in south Essex and Hertfordshire and lowest in the north of the region.
53. Away from London, there are a number of major sub-regional centres, such as Southend, Ipswich, Cambridge, Norwich, Peterborough, Luton and Bedford.
54. With an extensive hinterland of market towns and villages, the region is predominantly rural with almost one third of people living in settlements of less than 10,000. Some of the rural areas of Norfolk are amongst the most sparsely populated in England.
55. Overall, the region is relatively prosperous with some districts in Essex, Bedfordshire and Hertfordshire amongst the least deprived in England. At the same time, ten other districts are included within the 100 most deprived. At a local level deprivation can be intense: a cluster of wards in Great Yarmouth falls within the top five 'hot-spots' in England. There are also significant pockets of rural deprivation, with some rural districts ranking among the most deprived in the country. These are dispersed, small-scale and therefore difficult to detect.
56. About a quarter of the working population of south Essex and Hertfordshire travel to London.
57. The region has a diverse economy in which the sector 'Agriculture, Forestry, Fishing and Hunting' is still a significant, although declining, employer. It is estimated that there are about 1,200 "full-time equivalent" employed in forestry and primary wood processing.
58. The East of England has some of the country's most prestigious research facilities associated with environmental issues, including the Universities of Cambridge, East Anglia and Hertfordshire, and the National Soil Resources Institute at Silsoe, together with a number of well-regarded agricultural colleges.

Growth Areas

59. The population of the East of England is growing rapidly, having increased by 6% in the last decade with a projected increase by a further 9% by 2021. Such a rise would necessitate the building of a substantial number of new homes.
60. In February 2003 Government launched "Sustainable Communities: Building for the Future". This sets out policies, resources and partnerships that will be used to deliver "sustainable communities for all". It deals with the challenges of a rapidly changing population and the needs of the economy. The main elements are sustainable communities, changes in housing supply, new growth areas, decent housing, and countryside and local environments. It expects Local Government to play a crucial part in delivery and sees Local Strategic Partnerships (LSPs) as being at the heart of the strategy.
61. The Sustainable Communities document has indicated four growth areas in which it is suggested that development be concentrated, three of which lie largely or partly within this region: Thames Gateway, London-Stansted-Cambridge and Milton Keynes-South Midlands (which includes the Bedford area), - see **Figure 5**. Overall, there is the possibility that about 750,000 new homes could be built by 2030 within these three areas (not all in the East of England). To accommodate this number of dwellings it is likely that new settlements would be needed. Priority for development would be given to brownfield sites and development focussed within urban areas, but it is also possible that greenfield sites would be required. The emphasis of the Government's proposals is the creation of sustainable communities.

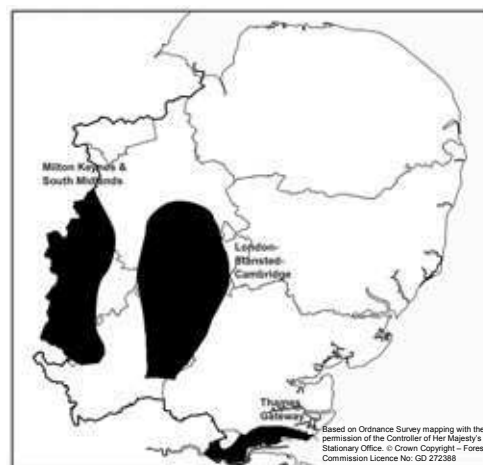


Figure 5 Map of Sustainable Communities Plan growth areas.

62. Associated with this scale of population increase will be infrastructure development, particularly to address the housing and transport needs of growth areas.
63. The fact that trees and woodlands would need to form an integral part of these developments has been fully recognised by Government. The 'Sustainable Communities Plan' includes the following commitments:

"We will promote more and better publicly accessible green space in and around our communities, for example through the creation of new country parks and networks of green spaces within towns and cities. 'Green wedges' and 'green corridors' will be given further protection through the planning system."

"We will encourage regional and local partners, especially in the growth areas and low demand pathfinders, to replicate the success of the 12 Community Forests around our major towns and cities. These forests give communities access to green spaces and woodlands right on the urban doorstep, and help protect and improve the countryside. They also help to boost economic confidence and investment."

64. Two of the three proposed growth areas have existing Community Forests. In the Thames Gateway the Forestry Commission is working in partnership with the Thames Chase Community Forest, Essex County Council, the Countryside Agency and the Thames Gateway South Essex Partnership to produce a 'Green Grid' plan to maintain, develop and link green spaces throughout South Essex. Trees and woodlands will be an important element of the 'soft infrastructure' of which the Green Grid Plan will be the foundation.

65. Regional partners are currently investigating how Thames Chase Community Forest and the Forest of Marston Vale can play an enhanced role in the Sustainable Communities Plan growth areas. In the light of the recommendation in the Plan to replicate the success of the Community Forests, there are opportunities within the region, and especially the growth areas, to roll out the good practice and lessons learnt from the Community Forests. The Green Grid plan approach may also have merit for all three growth areas.
66. In addition, a number of organisations have begun to explore whether the London fringes of Essex and Hertfordshire could be linked through a mosaic of woodlands and other habitats as a so-called "Green Arc" (**Figure 6**).

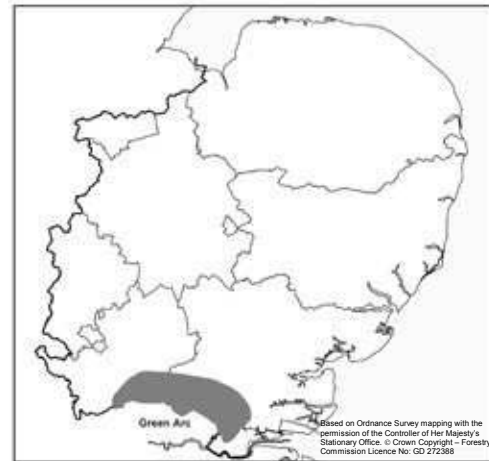


Figure 6 Map of the location of the proposed 'Green Arc'

67. Many of these spatial proposals are reflected in Regional Planning Guidance/Regional Spatial Strategy.

THE STRATEGY

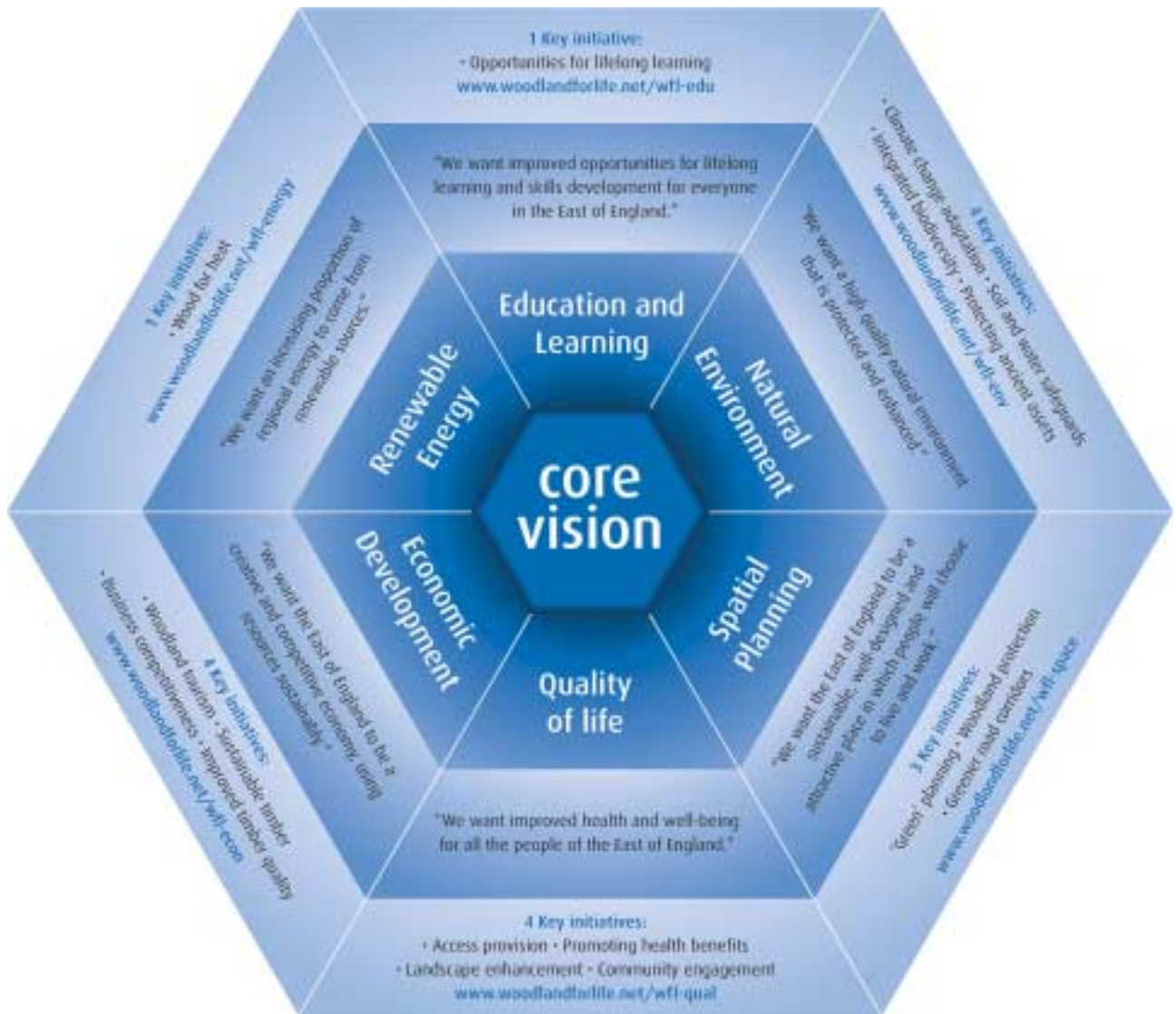


Figure 7 Diagrammatic summary of the relationship of strategic initiatives to the themes and core vision.

68. As detailed in the introduction, this Strategy has a thematic rather than spatial basis.
69. The six broad themes address the benefits that trees and woodlands bring to the East of England:

How trees and woodland can improve the lives of individuals (**Quality of Life**) and the places in which they live and work (**Spatial Planning**).

As well as adding to the general economy of the region, the woodland economy is at the heart of providing the wide range of social and environmental benefits associated with woodlands (**Economic Development**).

The possibility of using wood as an alternative source of energy to fossil fuels is substantial (**Renewable Energy**), offering an enhancement to the rural economy and benefiting the global environment through reduced carbon emissions.

Delivering wider societal benefits using woodlands as resources for learning (**Education and Learning**).

Underpinning everything is the wider environment (**Natural Environment**).

70. The Strategy sets a framework for the next 20 years. It is supported by a five-year Action Plan detailing specific actions, who will be involved in their delivery and the resources required.
71. In a number of sections of this Strategy, the need for further research has been highlighted but none of the issues are specific to the East of England. A wide range of research programmes involving trees and woodlands are being implemented at national and international levels, many of which involve regional research institutes and woodland owners and managers.
72. The benefits that trees and woodlands can provide to the people of the East of England are diverse and inter-related. It is inevitable therefore, that topics and issues considered in one section of the Strategy would be applicable to others. In order to avoid excessive duplication, related sections are indicated within the text. Many of the strategic aims given are also applicable to a number of issues. Likewise a large number of the actions to be undertaken to deliver these aims will be cross-cutting in nature.

1. QUALITY OF LIFE

We want improved health and well-being for all the people of the East of England

73. Trees and woodlands can contribute in many ways to the quality of life of those people who live and work in the East of England. For the purposes of this Strategy, these benefits are taken to be: recreation and access, health, landscape and community engagement.



A. Recreation and Access

(see also Health, Community Engagement, Tourism and Biodiversity)

74. It is estimated that there are about 55 million day-visits a year to woods in the East of England, mostly by regular visitors and of less than two hours duration. Some of the most widely recognised benefits of woodlands are recreation provision which comprise:

- **Leisure.** Visits to woodlands are made for a variety of reasons, from quiet contemplation to noisy, adventurous activities.
- **Health.** Benefits provided by moderate but sustained physical exercise and psychological well being (see Health section).
- **Lifestyle.** Visitors seek particular kinds of emotional and spiritual refreshment.

75. Woodland recreation is defined here as a frequent but generally short-duration activity undertaken close to home. It is usually informal in nature benefiting from the presence of general access or rights-of-way.

76. 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.

77. 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 horseriding but also organised forest walks, forest drives, visitor centres and picnic sites.

78. 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.

79. The great variety of well-preserved archaeological monuments and features within woodlands merit presentation and interpretation as educational assets and visitor attractions.

80. The use of woodlands as a setting for art is becoming increasingly common and includes such events as concerts, plays and sculpture.

81. 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.

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

What is being done for recreation and access?

Many woodlands with public access are being established all over the region (particularly within the three Community Forest areas), but there is scope for much greater provision, especially close to residential areas both urban and rural.

All County Councils are establishing Local Access Forums to consider maps of open access land and registered commons that will be published and to providing strategic advice on access and rights of ways issues including strategic approaches.

A number of woods already make substantial provision for recreation.

Throughout the region, programmes of recreational activities, including many in a woodland setting, are prepared by Local Authorities, Community Forests, Forestry Commission, Wildlife Trusts and other organisations.

Opportunities for recreation and access.

A number of opportunities exist to enhance the recreation provision of the region:

- improving the quality of recreation and 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. It will be important to build on the expertise developed within the Community Forests,
- encouragement of 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, and
- providing formal recreation facilities in larger woodland areas; these should be self-financing as far as possible.

Initiative for Recreation and Access

QL1 Support a strategic approach to access provision, to ensure that woodland is an integral part of wider green-space and access strategies and programmes.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

B. Health

(see also Recreation and Access, Community Engagement and Transport Infrastructure)

83. Trees and woods play an important part in physical, mental and spiritual wellbeing. 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; and
- provision of shade in urban areas so reducing ultraviolet radiation exposure.

84. 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.

What is being done for health?

The three Community Forests in the East of England have been at the forefront of promoting trees and health,

Forestry Commission organises a number of health related events from their High Lodge visitor centre in Thetford Forest. They have "Ladies Walking to Fitness", "Kids in Trim" and a lifestyle course for retired people. Activities include walking, cycle riding, orienteering and the high-wire "Go-Ape" course.

The benefits of moderate exercise for health are being increasingly recognised.

Opportunities for health.

A wide range of initiatives could be undertaken that would have health benefits, among which are:

- promote moderate outdoor exercise and conservation work for health,
- facilitate new hospital developments being set within well-landscaped grounds,
- 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.

Initiative for Health

QL2 Raise the awareness of the benefits of woodland for health and well-being.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

C. Landscape

(See also Site Restoration, Urban Fringe and Built Environment and Biodiversity)

85. Perhaps the ubiquitous public benefit of trees and woodlands is their impact on 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.
86. The scenic quality of the East of England is very diverse, as illustrated in the Countryside Agency's *Countryside Character Initiative*, which has delineated 17 character areas for the Region. There are also nationally important landscape areas within the East of England: the Broads, the Chilterns, Dedham Vale, Suffolk Coast and Heaths, the North Norfolk Coast, and the Brecks.
87. A number of landscape studies have been undertaken throughout the East of England, from which it is clear that:
88. Trees and woodland are thus contributing to both the structure and fine grain of important regional landscapes. There are, however, open landscapes (e.g. much of the coast of the region) that should be retained largely free of tree cover. In other areas the lack of trees diminishes the landscape quality and they should be increased. Elsewhere the existing patterns of land boundaries are of very ancient origin.
89. To take account of these factors, woodland and tree planting may require careful design and planning.

- 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;
- 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.

What is being done for landscape?

The existing varied landscape of the East of England as a whole makes it an attractive place to live and work.

Most counties of the region have produced or are producing landscape character assessments and strategies which will be used to inform development proposals, including the acceptability of woodland planting, to ensure landscape quality is maintained or enhanced as appropriate.

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.

Opportunities for landscape.

- In light of possible climate change and the roles trees and woods may play in flood control and energy production, existing landscape strategies may need to be reassessed, including the current general presumption against woodland planting in river valleys.

Initiative for Landscape

QL3 Enhance, with trees and woodland, the aesthetic qualities of areas of the East of England that have suffered landscape degradation.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

D. Community Engagement

(see also Health, Urban Fringe and Built Environment, Lifelong Learning and Biodiversity.)

90. 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.
91. 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.
92. 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.
93. 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.
94. 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.
95. To co-ordinate action at a local level, the Government promotes the establishment of Local Strategic Partnerships (LSPs). These bring together public, private, voluntary and community sectors. A key role of these partnerships will be the development of Community Strategies to promote or improve the economic, social and environmental well-being of the area.

What is being done for community engagement?

The Community Forests, Woodland Trust and Forestry Commission are leading the way in involving all sectors of the community in woodland creation, management and use.

A number of village design statements have been prepared around the region, some of which have considered the possibility of the creation of new woodland for the community.

Local communities have been involved in the establishment of significant areas of woodland around the region.

Opportunities for community engagement.

- The lessons learned and expertise gained in community involvement and participation could be widely disseminated.
- Greater community participation in the management of woodlands could be encouraged.
- Ensure tree and woodland issues are actively considered in Community Strategies and by Local Strategic Partnerships.
- Establish funding sources to allow community purchase of land for woodland creation

Initiative for Community Engagement

QL4 Support community engagement in woodland issues.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

2. SPATIAL PLANNING

We want the East of England to be a sustainable, well-designed and attractive place in which people will choose to live and work.

96. The role of trees and woodlands in enhancing the environment in which the people of the East of England live and work is of great importance.



A. Site Restoration

(See also Landscape and Urban Fringe and Built Environment)

97. 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. There are circumstances where other habitats may be more appropriate, but there are four principal areas where woodland could often be introduced:

- 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.

98. The benefits of woodland establishment are:

- pollution amelioration;
- improvement of land and property values and the stimulation of inward investment;
- shelter and energy conservation;
- improved community perceptions;
- mitigation of liabilities; and
- savings in the management of landscaping schemes.

What is being done for site restoration?

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.

The three Community Forests (Thames Chase, Watling Chase and Marston Vale) are directly implementing landscape enhancement schemes in some of the most degraded parts of the Region.

Specific proposals are being prepared for a "Green Grid" Strategy for Thames Gateway South Essex.

Opportunities for site restoration.

- Continued landscape enhancement of degraded areas building on the experience and expertise of the Community Forests.

The initiative for Site Restoration is encompassed within that for Landscape (QL3)

B. Urban Fringe and Built Environment

(See also Recreation and Access, Health, Community Engagement and Biodiversity)

99. The urban fringe may be an area of degraded landscape quality, although much is designated as 'greenbelt'. Government is committed to the improvement of such areas, as stated in the Sustainable Communities Plan:

"We will enhance greenbelt land by encouraging local authorities to identify ways to raise its quality and utility, for example by improving its accessibility, biodiversity and amenity value."

100. 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.
101. 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.
102. 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.

103. Among the benefits provided by trees and woodlands in urban areas are:

- the establishment of a green framework within which new developments can be merged with minimal visual intrusion;
- aerial pollution may be reduced;
- extremes of temperature, both warm and cold, can be mitigated, a characteristic that may increase in importance if the predictions of climate change become a reality;
- 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 for businesses can be instrumental in attracting and retaining investment. Access to natural green surroundings can help reduce stress and improve productivity in the workplace;
- they can connect urban residents to the natural world and bring wildlife to the doorstep;
- it has been shown that house prices are increased;
- there is some evidence that community cohesion and stability can be enhanced, and
- wood and timber can be produced.

What is being done for the urban fringe and built environment?

Tree planting in the urban fringe is being undertaken around the region, particularly within the three Community Forests.

The Countryside Agency in partnership with Groundwork is developing a vision and programme for the full social, economic and environmental potential of the countryside closest to urban areas, the 'Fringe Benefits' Programme.

Specific proposals are being prepared for a "Green Grid" Strategy for Thames Gateway South Essex, which seeks to provide an integrated approach to heritage, nature conservation, recreation and other issues.

Many trees and woodlands within urban areas are being managed, although their importance frequently is not fully recognised.

Many town centre improvements include tree planting as a component, but this is rarely a major consideration.

CABE Space, part of the Commission for Architecture and the Built Environment, and the Urban Parks Forum aim to bring excellence to the design planning, management and use of public parks and open spaces in town and cities.

Some new developments, both industrial and residential, do incorporate some accessible green-space which includes a proportion of tree and woodland.

Development continues to be the main cause of woodland loss, despite the Government's policy of presumption against woodland clearance unless there are overriding public benefits.

Opportunities for the urban fringe and built environment.

- Continued tree and woodland planting in the urban fringe throughout the region to provide a wide range of benefits.
- Develop the 'Green Arc' proposal to link the London fringes of Essex and Hertfordshire through a mosaic of woodlands and other habitats.
- Replicate the Thames Gateway Green Grid project within the 'Growth Areas' so that development can be set within established, well designed green space.
- Develop partnerships with industry.
- Ensure all new major residential and business developments incorporate well designed, varied soft landscaping and structural planning.
- Preparation of detailed management proposals, including restocking programmes for all urban trees and woodlands.
- Development of partnerships between public and private sectors to facilitate tree and woodland management, as well as their protection from future developments.
- Strengthen the protection given to existing and particularly ancient woodland under the planning system.

Initiatives for the Urban Fringe and Built Environment

SP1	Promote sustainable developments set within well designed green space of which trees and woodland play a functional part.
SP2	Improve protection of existing woodland and trees.

To support these initiatives a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

C. Transport Infrastructure

(See also Health, Landscape, Urban Fringe and Built Environment and Climate Change)

104. A good road and rail network throughout the East of England is essential to the sustainable development of the region. The transport networks, particularly close to London, are heavily congested at peak times. Transport improvement will be an important part of the development of the growth areas of the region. Whilst such improvements are required they may cause some adverse impacts on the quality of life of people living in close proximity, particularly:

- visual and noise intrusion, and
- increased air pollution.

105. The planting of trees and woodlands along roads can help mitigate some of these effects. Woodland belts can provide very good visual screens and affect the perception of noise.

106. There is growing evidence that trees can trap air pollutants such as ozone, sulphur dioxide and nitrogen oxides. This therefore reduces the concentration of these gases in the atmosphere.

107. Within urban areas, the filtering of particulate air pollution is particularly important. Belts of evergreen species, in particular, between residential areas and busy roads can act as air filters and result in improved air quality

108. It has been shown that driving along tree-lined roads can be considerably less stressful than along those where trees are absent.

109. The presence of trees can reduce the likelihood of fog. Conversely the presence of wet leaves on the road or railway lines in autumn can present a hazard and in severe weather conditions, trees falling onto roads or railways can be a problem.

110. Street trees can greatly enhance the environment by:

- helping to soften harsh townscapes, and
- providing shade.

111. On the other hand, they can also cause problems if the wrong trees are planted in the wrong places, such as interfering with services and dropping of branches.

112. It is evident therefore that the advantages and disadvantages of trees and woodlands in close proximity to highways need to be balanced but the negative impacts can often be mitigated by careful planning.



Figure 8 Map of major roads and urban areas.

What is being done for transport infrastructure?

Major road improvement schemes include landscape enhancement measures, but these are generally limited to planting within the highway boundaries.

All highway authorities manage urban trees within their responsibility, but detailed management proposals including phased removal and replacement strategies are rare.

Opportunities for transport infrastructure.

- Enhanced landscaping associated with highway improvement, including planting away from the highway to overcome problems of trees in close proximity to the road.
- The development of 'Green Highways' – tree lined roads as they enter urban areas.
- Develop a strategic approach to the Thames Gateway, and M25 and M11 corridors to produce green networks.
- Plant trees and woodland adjacent to busy roads within urban areas to act as air filters, principally of particulates.
- Ensure major developments are planned to allow for woodland establishment between major roads and residential areas.

Initiative for Transport Infrastructure

SP3 Create greener road corridors integrated into the wider landscape.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

D. Flood Management

(See also Recreation and Access, Landscape, Biodiversity and Water Quality and Supply)

113. 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. An increasing risk of flooding is one of the most firmly predicted impacts of climate change. At the same time, 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. One option that requires more research is the potential for woodland to help alleviate damaging floods, particularly through 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 the many other benefits provided by floodplain woodland, including enhanced;

- recreation,
- landscape,
- biodiversity, and
- water quality.

Further details of all these benefits can be found in the specific sections.

114. 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. Other constraints on planting within floodplains include:

- protection of other important wetland habitats,
- maintenance of appropriate access to the main river channel,
- protection of buried archaeology,
- maintenance of a navigable channel for boat traffic and
- making sure that summer water flows will not be significantly reduced.

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

116. 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.

What is being done for flood management?

Riparian woodland is being planted around the region, albeit for primary benefits other than flood control.

Proposals for floodplain woods are under consideration, primarily for nature conservation purposes.

Opportunities for flood management.

- Expansion of floodplain and riparian woodland, particularly on land that may be unsuitable for agricultural production due to winter flooding.

Before any specific initiatives can be produced for flood management, it is necessary to undertake further research into the effect of tree and woodland planting in lowland England. Aspects of riparian and floodplain woodland establishment primarily for nature conservation are covered in strategies for the Natural Environment (NE2 and NE3).

3. ECONOMIC DEVELOPMENT

We want the East of England to be a creative and competitive economy, using resources sustainably

117. The economic value of woodland to the East of England Economy is estimated to be in the region of £680 million per year. The majority of this however accrues from the value of the green infrastructure that trees, and woodlands provide (or capital value of woodlands in the landscape). For example, 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.
118. The economic activity of tree and woodland management is much smaller, but it provides a financial return to owners. A healthy, viable and competitive woodland business sector would underpin the provision of the wide range of benefits of trees and woodlands to the people of the East of England. Without the necessary finances to undertake woodland management and planting the delivery of social, environmental, and wider economic benefits would be severely impoverished. Whilst grant assistance is available it is insufficient to support the provision of all public benefits of woodlands.
119. Employment within the timber production and processing industries is about 1,250 full time equivalent posts in the East of England, although much of the processing sector only deals with imported timber. In addition, there are probably another 1,200 jobs arising from the indirect and induced effects of timber production. The number of people employed in other aspects of woodland management, recreation and tourism is not known, but will be significant. Many of the jobs are in rural areas and are thus particularly important within the context of a diversified rural economic base.
120. This section focuses on tourism, wood and timber production, wood-using industries, non-timber woodland products and local marketing.



A. Tourism

(See also Recreation and Access)

121. Tourism is a major economic driver (£3.4 billion in 1997) in the East of England, with woodland widely considered to be a positive contributor to the industry. Although the traditional seaside holiday has been in long-term decline, short breaks, particularly involving countryside and heritage locations are growing. Woodland based commercial recreation (including pheasant shooting and deer stalking) and tourism can add significantly to rural economies, providing employment and downstream benefits.
122. Woodlands form an integral part of many 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.

123. Some wooded areas are already major tourism magnets: Thetford Forest is the third most visited attraction in the region.
124. 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,
- visitor centres, and
- 'safaris' and bird/mammal watching.

125. Woodland size and ownership characteristics are major factors limiting the ability to provide tourist attractions. Large woodland areas or estates have an advantage.

What is being done for tourism?

Many of the most attractive landscapes, and therefore most visited parts, of the region rely on trees and woodland for part of their character.

Woodland plays a significant part in over 100 tourist venues in the region.

Center Parcs at Elvedon is a major holiday centre in a woodland setting, employing up to 1700 staff at full capacity.

Opportunities for tourism.

- Work with the East of England Tourist Board to promote woodland venues.
- Increase the number of visitor centres in major woodland areas. These would provide local employment and increase visitor spend.
- Provide accommodation within woodland settings, such as caravan and camping sites, camping barns and cabins.
- Encourage co-operation between owners to provide tourism facilities.
- Promote sustainable tourism by encouraging co-operation between attractions in close proximity to provide visitor packages.

Initiative for Tourism

ED 1 Encourage an increase in woodland-based tourism.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

B. Woodland Produce and Timber Production and Marketing

(See also Tourism, Renewable Energy and Biodiversity)

126. The production of wood has been the main reason for the continued existence of woodland over the centuries, and for most of 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, with Britain importing about 80% of her requirements. It may seem a paradox therefore that the marketing of British grown timber is becoming harder.
127. Timber and wood products are subject to the global free market and British grown produce must compete, in terms of price, quality and service, with imported material. Production and transport costs in Britain outweigh those of many parts of the world. Even so it is estimated that timber and wood processing from the East of England is worth about £220 million per year.
128. It is not possible at the regional, or national, level to affect the global timber market. The imposition of trade barriers to make home produced timber more competitive is unrealistic with the growing pressure on developed nations to move towards fairer trade policies.
129. There is likely to be a steadily increasing market for 'wood fibre' (for board and paper manufacture for example), which could be produced from lower grade timber. It unlikely that the East of England could grow this in sufficient quantities and at a price that would make it economically attractive because of size of plants and distance to markets.
130. High quality timber, both broadleaved and coniferous is always likely to be in demand, indeed with increasing constraints being placed on the tropical hardwood production for environmental reasons, the market for high quality temperate broadleaved timber could increase markedly.
131. The growth of cricket-bat willow is locally important and one of the few parts of the timber growing industry that shows any substantial profit.
132. The theoretical potential wood availability from existing woodland of the East of England is estimated to be in the region of 450,000 cubic metres per year. This may rise to 520,000 cubic metres by 2040, much of which will be of relatively low quality. Currently estimated production is less than 300,000 cubic metres per year.
133. These figures ignore all urban trees and woods. 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.
134. It is further estimated that about 50,000 hectares of the woodlands of the East of England are currently under managed. In some cases it may be necessary to encourage the better management of these areas if important benefits they provide are under threat. It is, however, hard to find a rationale to encourage wood production from these woodlands when owners with a long history of timber production are having great difficulty marketing their produce at a price which they consider acceptable. There is a strong argument to concentrate efforts on those woodlands that are currently managed but suffering economic hardships with a resultant decline in the quality of the other benefits provided.
135. A number of factors prevent the realisation of the full economic potential of the woodlands of the region:
 - 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,
 - lack of local bulk markets, and
 - diminishing skills base in woodland management, harvesting and haulage.

136. 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.
137. The very high populations of deer and grey squirrels result in further reduction in value due to browsing and bark stripping damage, indeed many owners now consider the growing of many broadleaved species to be unviable.
138. 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.
139. 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.
140. 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.
141. 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.
142. The current very poor timber markets are making matters worse. Timber harvesting is frequently being delayed in the hope that markets will improve. This has a knock-on effect on restocking and subsequent maintenance. The lack of assured work has caused many contractors to seek other forms of employment outside the forestry industry and it is unlikely that many will return when markets improve and felling rates increase.
143. The lack of assured harvesting contracts prevents investment in necessary plant and machinery.
144. It cannot be expected that this Strategy will solve the very severe national problems of economic management of woodland. It will always be difficult to market low quality timber at economic levels. Finding a bulk market at an attractive unit price for such material will be essential if the woodlands of the region are to have any economic significance and thereby provide the wide range of other benefits included within this Strategy (see section on renewable energy). 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 and control of pest species.
145. 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 are currently investing 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.
146. Other wood using industries include manufacturers of:

- furniture,
- fencing,
- garden furniture and buildings,
- craft products, and
- cricket bat blanks (the East of England provides the raw material for many of the world's cricket bats).

147. Only a minority regularly use local timber, with the main reasons for not doing so being:

- poor quality, particularly of hardwood timber,
- lack of consistency in quality,
- uncertainty of supply, and
- lack of awareness.

148. Little can be done to improve quality in the short term. It may however be possible to increase the quantity of higher-grade material by better grading of what is produced.

149. The issue of supply has long been argued as a constraint to use of British timber and is to some extent related to the nature of woodland ownership. It should not be an insurmountable problem however.

150. Increasing awareness of availability of local timber should be relatively easy to achieve. Care should be exercised however, as initiatives to achieve this in the past have failed due to the inability to deliver on raised expectations.

151. 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:

- venison,
- other animals, (including pheasants)
- fungi,
- fruit and berries, and
- foliage for floristry.

152. 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, but the populations of all species are rising. The marketing of venison is a natural next step. The Scottish Wild Venison Quality Assurance Scheme has set very high standards for this product in terms of methods of culling, storage, butchery and packaging. These are necessary if the meat is to satisfy the requirements of the food retailing industry. This has not been deemed feasible in England. At present only the

Forestry Commission and very large estates can meet the standards, particularly in relation to deer larders. If the market for venison does increase in volume, it could make a contribution to one of the most serious woodland management problems.

153. 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.

154. The provision of pheasant shooting and deer stalking are principal woodland management considerations for many woodland owners. These activities are most likely to generate significant income, and thus strongly influence management decisions and provide considerable contributions to local rural economies and employment. On average, shooting holdings have three times as much woodland as non-shooting and 3.5 times the average level of woodland for England. 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, and are especially noticeable where sport is the main objective. Management for pheasant shooting tends to lead to greater woodland retention and planting.

155. As pheasant shooting is a well-established activity it is not deemed necessary to include any strategic aims for it.

156. 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.

157. Woodlands are the habitat for a wide range of fungi, many of which are edible. There is a thriving 'cottage industry' based on the collection of woodland fungi, although rarely is it regulated nor does it generate any income for the woodland owner. It is also possible to artificially raise fungi within woodlands for niche markets. There is however concern over the impact of such collection on woodland fungal communities.
158. As with fungi, most fruit and berries are collected on an *ad hoc* basis. Whilst such collection is unregulated the possibility may exist to establish markets for these products, as is common on the continent.
159. The collection of foliage for use in floristry can be of considerable local importance.
160. There is increasing interest in promoting the use of local produce, as evidenced by the Countryside Agency's 'Eat the View' initiative. This aims to reconnect the supply of food commodities to the local landscape. This approach may have some resonance with wood usage.
161. Sustainable woodland management is now the norm, and certified timber is becoming more readily available. The environmental implications of long distance transport, however, are only just starting to be considered in the wider sustainability debate.
162. One potential avenue for the promotion of local timber is through the concept of "ecological footprinting". Measuring our "ecological bottom line" is critical to the definition and measurement of sustainable development. The most rigorous and useful way of measuring this is through "ecological footprint analysis". Such analysis measures the impact of human activity upon nature, expressed as the land area required to provide the resources consumed. For the purposes of ecological footprint calculation, land and sea area is divided into four basic types. One type, "energy land", is partly comprised of the forested land required for the absorption of carbon emissions (i.e. woodland is used to mitigate the negative effects of some other land uses).
163. Interestingly, data can be used to model different scenarios and examine their impact on the footprint. Sustainable woodland management has much to offer in reducing ecological footprints, for example in providing a renewable energy source, in reducing transport distance and providing a sustainable raw material source.
164. The group charged with the preparation of the Sustainable Development Framework has agreed to undertake an ecological footprint project for the East of England. There would be merit in building on this approach to promote the role of sustainable woodland management.
165. The Sustainable Communities Plan promotes sustainable living and sustainable construction, including new houses that meet the Building Research Establishment's 'EcoHomes' standard. An increased use of wood in house construction could be part of this. There may not currently be much construction grade timber in the East of England but efforts could be exerted to increase its future availability. There is however, the potential to use local wood for a range of other construction related products, such as fencing materials.
166. There is a continuing need for indigenous, and preferably local, hardwoods for the restoration and repair of traditional buildings.
167. There may be considerable potential to improve local markets through substitution of imported material. It has been shown that wood products traded in the East of England within garden centres, DIY sheds, garage forecourts and farm shops were valued at about £23.7 million in 2001. Most of these products were manufactured outside the region, but many of the items traded, for example fencing, tubs and planters, bird tables, charcoal and firewood could be manufactured locally from timber grown in the East of England.
168. It is encouraging that buying British and environmentally friendly products is gaining in importance for the consumer. It must be stressed however that quality and price are still highest in a list of priorities and given much greater weight than place of manufacture or environmental credentials. If the use of local wood is to be promoted, it is therefore essential that it can compete favourably in terms of both quality and price with alternative sources.
169. The lack of credible labelling of the origin of wood and of retailers specialising in local produce make local sourcing for wood users very difficult.

What is being done for Woodland Produce and Timber Production and Marketing?

Woodland management activity in the region for wood and timber production is considerable and diverse, and it would be fruitless to try to summarise it here.

The Forestry Commission is developing a new project based grant under the Woodland Grant Scheme to support businesses engaged in harvesting, processing, marketing and promotion of outlets for timber products. The grant will also provide support for the formation of groups, co-operatives or woodland associations. The grant will enable forest holders and forest businesses to become more competitive by promoting sustainable forest management, encouraging added value at the point of timber production and improving the supply chain through co-operative working.

The Forestry Commission is actively progressing the issues of squirrel damage with the England Squirrel Forum. It is proposed that the East of England should adopt the measures resulting from these policy and practice discussions.

The Forestry Commission has entered into long-term supply contracts from its own estate with customers. This has both prevented export substitution and allowed some processors to invest in new equipment to the potential benefit of other local growers.

Timber parcels from a number of owners are being combined which permits better grading to extract sufficient high quality material to attract purchasers.

An increasing area of woodland is being independently certified as being sustainably managed thus allowing "green" labelling of wood products.

A number of awareness raising initiatives have been established and still exist.

Venison production is now quite widespread, but frequently uncoordinated except within the Forestry Commission.

Pigs and wild boar are reared within a number of woodlands, although with nature conservation benefits as the prime reason in many cases.

Experimental work is under way to investigate the raising of poultry in woodlands.

A number of owners are raising specialist fungi, including truffles and shitake mushrooms.

Licences for the collection of fungi are issued by a number of woodland owners, primarily to ensure they are not over exploited.

National guidelines are being drawn up on sustainable procurement of timber for all government organisations including local authorities.

A number of small scale wood fairs take place around the region that promote the purchase and use of local timber.

Opportunities for Woodland Produce and Timber Production and Marketing.

- 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.
- Expansion of deer and grey squirrel management programmes.
- Joining up the supply chain - reconnecting the elements of the wood chain and in particular woodland owners with their markets, and strengthening the links between the various element of the woodchain through co-operation and working.
- Working with the sector to strengthen the links between the various elements of the woodchain through greater co-operation and joint operations.
- 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.
- Improved culling, production and marketing of venison.
- Development of silvopastoral systems in suitable woodlands.
- Development of niche markets for fungi, fruit and berries.
- 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.

Initiatives for Woodland Produce and Timber Production and Marketing

- | | |
|------|--|
| ED 2 | Help public and corporate organisations in the region understand issues of sustainable timber and certification. |
| ED 3 | Increase business competitiveness in the woodland and timber industries. |
| ED 4 | Promote and support silvicultural and management systems to improve the quality of timber grown in the region. |

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

4. RENEWABLE ENERGY

We want an increasing proportion of regional energy to come from renewable sources

(See also Urban Fringe and Built Environment, Woodland Produce and Timber Production and Marketing, and Climate Change)

170. The UK Energy White Paper sets out the Government's policy for moving towards a low carbon future. The Government has committed itself to the Kyoto process and reducing carbon emissions and the impact they have on the global and UK environment.
171. The key mechanisms to achieve a reduction in carbon emissions are to reduce energy consumption through increased energy efficiency and moving to renewables. Biomass, which includes wood and short rotation coppice, is seen as the second most significant resource for the country behind wind.
172. In the White Paper, great importance is placed on the role of renewables in the production of electricity. At a regional/local level however one of the most efficient ways of using woodfuel is in the generation of heat, or combined heat and power, rather than electricity.
173. Indeed, 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.



A. Resource

174. The East of England Round Table for Sustainable Development produced regional targets for renewable energy, based on an assessment of the region's capacity to generate electricity from all potential renewable sources. Biomass was viewed as making a key contribution in the region. They estimated that if a 14% renewable energy target by 2010 was adopted, the region would have to produce 700 GWhr/yr from biomass. This would require 92,000 hectares of woodland, either existing or specially planted short rotation coppice. The East of England has about 140,000 hectares of existing woodland, although about 50,000 hectares are currently not managed to produce much, if any, timber. As discussed in the section on wood and timber production, there is a perceived need of a bulk market for low quality timber in the region. The development of a renewable energy market could provide that bulk outlet.
175. It is evident that there is a substantial resource available for energy generation. There are, however, a number of constraints to this being forthcoming:

- Price offered for wood,
- 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.

176. The production of woodfuel from some woodlands would enhance biodiversity and opportunities for shooting.
177. To improve its viability, and ensure carbon neutrality, wood for fuel should not be transported great distances, a common maximum distance quoted being 20 kilometres. It is also likely that production from very small woodlands could only be viable if supplying a very local user.

178. There is the potential for a considerable increase in the area of woodland, particularly short-rotation coppice specifically for energy generation, as a form of farm diversification. The establishment of coppice of this type will probably be dependent on the existence of a reliable market.
179. Co-products of the softwood saw-mills of the region are a further potential source of wood fuel which could also improve sawmill viability and hence log prices.

B. Infrastructure

180. The technology for burning wood to produce heat and power is well developed, tried and tested throughout Europe with examples in Britain. Much of the effort in Britain has been targeted at the development of large 'power stations', but these have only been moderately successful. There are however much more positive results from smaller scale installations, either wood fired boilers or combined heat and power plants (CHP). The consensus within the East of England appears to be in favour of the development of widespread small-scale operations rather than further power stations relying on wood fuel.
181. Wood is generally fed into burners as chips but, increasingly, small boilers tend to use wood pellets, as they are easier to store and feed into the burners. Currently wood chipping is widely undertaken in the East of England, primarily by arboriculturalists, but with an industrial scale operation at Thetford. The technology of wood chipping is also well advanced. The production of wood pellets uses a lot of energy and the energy balance is poor, unless use is made of waste heat from other processes or material that has already been dried. There are currently no pellet production facilities in the East of England.
182. If woodfuel is to be advanced as a significant source of renewable energy in the East of England, a well-developed supply-chain will be needed, something that does not currently exist. Wood will need to compete with fuels such as oil and natural gas in terms not just of price, but of ease of purchase, delivery and use.

What is being done for renewable energy?

Nationally DTI, Defra, and the New Opportunities Fund have developed a range of schemes to support investment in bio-energy including capital grants for the development of biomass energy plants, support for the supply chain infrastructure, community and household grants, and support for producer groups and growing energy crops.

Research has been commissioned to estimate the woodfuel resource available in Britain from woodlands, energy crops and arboricultural material.

'Renewables East' has been established which will promote business development and take-up of renewable energy.

The strategic report, 'Woodfuel in the East of England, Prospects and Potential' will be published in 2003.

There is an existing well-developed market for firewood in the East of England, although some of this is imported into the region from as far afield as West Yorkshire. It is estimated that over 60,000 tonnes are produced each year.

The Fibrowatt power station at Thetford burns the largest consumption of wood chip for power in the country but there may be opportunities to increase this.

A biofuel plant at Eye has received planning permission.

Opportunities for renewable energy.

- Promote the use of wood for heat and power generation.
- Continue to make the case for including heat production when considering use of renewable energy and setting targets for reduction in carbon emissions.
- Establish woodfuel heating and CHP demonstration installations around the region.
- Encourage the use of wood for heat in public buildings, schools, leisure centres, glasshouses, armed forces bases, prisons, rural estates and farms.
- Use the planning system to actively encourage the use of wood for heat and power generation in major new developments.
- Support the development of the contractor supply chain and infrastructure.
- Support the development of technical training packages for end users, specifiers and heating installation specialists.
- Mitigate the high initial cost of wood boiler plant through focussed grant support.
- Develop a dedicated resource to provide a clear and unbiased information, facilitation and networking service for woodfuel development in the region, (similar to the Advantage West Midlands funded 'Marches Wood Energy Network' in the West Midlands)
- Develop regional woodheating opportunity maps based on the woodland resource, natural gas grid and existing/planned wood heating facilities.

Initiative for Renewable Energy

RE1	Promote the use of wood for heat generation.
-----	--

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

5. EDUCATION & LEARNING

We want improved opportunities for lifelong learning and skills development for everyone in the East of England

183. Woodlands have important educational values both as immediate settings for schools and as places to visit for outdoor learning.



Lifelong Learning

(See also Recreation and Access, Health, Community Engagement and Woodland Produce and Timber Production and Marketing)

184. Profound links have been demonstrated between the quality of playspace 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. Some recent research in Norway suggests that spending part of school time in small woodlands have a positive influence on children's (5 to 7 years) motor development skills. It was found that natural landscapes had qualities to meet children's needs for a stimulating and varied play environment, with a positive relationship between landscape components and play activities. Children are thus enabled to develop more fully in a range of ways, both as individuals and as part of society.
185. Play is a vital part of learning, especially for pre-school, nursery and key stage 1 children. Woodlands can provide perfect surroundings for play if there are adequate open space and facilities.
186. The Forest School concept has developed from this work. In essence, each Forest School provides a permanent, natural but safe setting in which children have freedom to roam and to experience the natural world through practical activities. Children visit the woodland regularly throughout the year and in all weathers. 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. There are currently no Forest Schools in the East of England.
187. The Forest Education Initiative (FEI) is a partnership between the Forestry Commission, Woodland Trust, Timber Trades Federation, Forest Industries Development Council, BTCV, 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.
188. 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. The Government's Connexions programme is designed to keep 13-16 year old children in school through reward, incentives and positive career advice. Each region has a Connexions co-ordinator.
189. Learning does not cease at the point students leave school or college; it is a lifelong process. Trees and woodlands can play an important role in this. As well as being popular places to visit for recreation there is a widespread, and unfulfilled, desire for information and knowledge.
190. 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.

191. Woodlands can provide settings for adult learning, particularly those who don't learn in formal educational environments.
192. Woodland management can uniquely demonstrate global and local sustainability issues, use of natural resources and illustrate such topics as the carbon and water cycles.
193. The range of opportunities is considerable but includes;

- guided walks,
- interpretative material in woodlands,
- workshops,
- training courses,
- working holidays, and
- woodland craft holidays.

What is being done for lifelong learning?

There are a large number of environmental education providers in the East of England using woodlands as the basis of, or background to, their work. These include Forestry Commission, Green Light Trust, Woodland Trust, Wildlife Trusts, Community Forests, National Trust and agricultural colleges.

Some private owners encourage school visits to their land.

The Forest Education Initiative has three local groups, or 'clusters', in the East of England; Suffolk/Norfolk based on Thetford Forest, North East London/Hertfordshire based on Epping Forest and Bedfordshire (which is part of the Northants cluster).

A wide range of organisations provides guided walks and interpretative material for those visiting woodlands.

Many organisations and individuals give talks, lectures and courses related to woodlands, trees and wood usage.

Organisations such as BTCV, National Trust and Wildlife Trusts facilitate practical involvement.

Opportunities for lifelong learning.

- Develop a number of Forest Schools.
- Increase the number of FEI clusters linked exclusively to one or more Forest Schools, so that the whole region is covered.
- Increase access to other woodlands for educational purposes
- A fully co-ordinated approach to lifelong learning using woodlands could be developed at a regional level.
- Improved visitor facilities at major woodland recreational sites
- Improved information and interpretation in accessible woodland
- Development of the Forest School philosophy coupled with wider woodland engagement.
- Development of an outreach network, possibly using 'Community Rangers' to encourage community participation in woodland events.

Initiative for Lifelong Learning

EL1	Develop opportunities for lifelong learning through trees and woodland.
-----	---

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

6. NATURAL ENVIRONMENT

We want a high quality natural environment that is protected and enhanced.

194. Trees and woodlands are a vital part of the natural 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. Trees may have a significant role in mitigating some of the effects of climate change.



A. Climate Change

(See also Landscape and Biodiversity)

195. There is clear and compelling evidence that, because of human activities, the global climate is changing. It is also becoming evident that these changes are likely to be particularly acute in the East of England.

196. By the end of the century, it is likely 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.

197. These changes will have a direct impact on the growth of trees and woodlands of the region:

- 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. Grey squirrels will benefit more than red.

198. Although some types of woodland in the region may be threatened by climate change, a number of opportunities for the use of trees and woodlands to mitigate its effects are likely to arise.

199. Trees and woodlands play a significant role in moderating the flux of greenhouse gases, particularly carbon dioxide, between the land and the atmosphere. They can serve in three ways, as:

Reservoirs: by storing carbon in biomass, litter and soils;

Sinks: when uptake of atmospheric CO₂ is increased – for example by increasing the area of productivity;

Sources: when the burning or decay of biomass and disturbance of woodland soils results in the emissions of greenhouse gases.

200. Woodland management practices can affect the accumulation of CO₂ in the atmosphere. These practices can be grouped into three categories:

Conservation management: retaining existing carbon reservoirs through woodland conservation and sustainable harvesting;

Storage management: developing sinks by increasing the woodland area, increasing the forest carbon stored per unit area through silvicultural measures (such as longer rotations and increased tree stocking densities), and extending the time over which harvested wood remains in use;

Substitution management: there are two forms of substitution:

- Substituting woodfuel from sustainably managed woodlands for fossil fuels,
- Substituting wood products for more energy-demanding products, such as steel, concrete, aluminium, glass and plastics.

201. Carbon sequestration through afforestation or forest management is not viable as a major mitigating measure for the UK (just one year of UK CO₂ emissions, if stored in woodland, would occupy the entire East of England). Moreover, carbon sequestration as a means to stabilise greenhouse gases in the atmosphere has some serious shortcomings:

- there is no guarantee of **permanence** (woodland may be lost through felling, disease or fire)
- sinks **saturate** (i.e. there is a finite limit to the amount of carbon they can mop up)
- **'leakage'** can occur (a policy of having more trees here might result in having fewer trees elsewhere).

202. Hence, the UK and other EU Member States are firmly of the opinion that policy priority should be given to reducing emissions at source.

203. Nonetheless, 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.

204. The concept of trading in carbon offsets (whereby businesses or individuals offset the 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 UK Emissions Trading Scheme (ETS), a number of voluntary schemes include woodland planting. The expansion of such schemes may provide opportunities to bring more investment into woodlands but their relationship to grant aid needs to be carefully examined. It would also be appropriate to keep a range of sequestration options (like the “Greenfund” project sponsored by the Dutch government) under review for opportunities to link them into the wider ETS.

Initiative for Climate Change

NE1 Adapt to the likely impact of climate change on trees and woodland in East of England.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

There is no specific initiative for Carbon Sequestration as tree and woodland establishment and management are not viable as major mitigating measures. The improved woodland management and increase in tree cover that will result from the implementation of the strategy however will have positive, although minor, impacts on carbon storage.

B. Soils

(See also Flood Management and Water Quality and Supply)

205. 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. Soil performs many functions, including :

- modulating the water cycle,
- affecting biogeochemical cycles (including the carbon cycle),
- buffering and reducing pollutants.

206. 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.

207. 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.

208. 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.

209. There is a need to further investigate the impact of harvesting systems on the soils of ancient woodland sites (notably on clays) to develop appropriate guidelines. Existing guidance is based primarily on upland peat and gley soils and therefore not particularly appropriate to the East of England context.

210. 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.

211. 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).

Initiative for Soils

NE2 Promote woodland planting and management to help protect other natural resources as part of integrated sustainable land management.

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

C. Water Quality and Supply

(See also Flood Management and Soils)

212. The East of England is one of the fastest growing regions 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.
213. The East of England is the driest area of the country and climate change predictions indicate that this is likely to get worse with resultant demand on water that will impact on all uses including domestic and agricultural production.
214. The Environment Agency, the body responsible for maintaining and improving the quality and quantity of water supply, is developing a number approaches to water management, including Catchment Abstraction Management Strategies and River Basin Management Plans.
215. Trees and woodlands can impact on:

Water quality:

- 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.
- 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.

Water quantity can be modified in two ways:

- **Modification of flow.** Due to greater soil permeability and enhanced infiltration rates, rainwater tends to enter watercourses much more gradually than from arable land or hard surfacing, thereby reducing the impact of flash floods. Woodlands can therefore help to balance out water flows.
- **Substitution of crops.** 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.

Initiative for Water Quality and Supply

The initiative for water quality and supply is incorporated within:

NE2 Promote woodland planting and management to help protect other natural resources as part of integrated sustainable land management.

D. Biodiversity

(See also Recreation and Access, Health, Landscape, Community Engagement, Urban Fringe and Built Environment, Flood Management and Woodland Produce, Timber Production and Marketing)

216. 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). ASNW has been continuously wooded since at least 1600 and in many cases since the last ice-age, and consist 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 underestimate the true resource as wood-pasture was generally omitted from the original list, as were all woodlands under two hectares in area. 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 under-storey, 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 (see **Figure 9**).
217. The biodiversity interest is not limited however to these two woodland categories. The extensive conifer plantations of the Sandlings have been designated and Thetford a candidate as SPAs due to their international importance for woodlark and nightjar.
218. 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.
219. All woodlands can provide habitats for a range of flora and fauna. 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.
220. The importance of biodiversity is increasingly being recognised and international, national and local initiatives have been instigated in response. The international process originated at the Rio "Earth Summit" in 1992 to which the UK government responded in 1994 with the publication of the UK Biodiversity Action Plan (UKBAP).
221. 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). Targets in these plans are increasingly being dispersed to a local level to give Local Biodiversity Action Plans (LBAPs) guidance to allow them to play their part in delivering UKBAP. Some LBAPs were developed ahead of the national HAPs and SAPs however so there may be some discrepancies between them.
222. 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.

223. Three Habitat Action Plans for woodland relevant to the East of England have been or are in the process of being prepared:

- Wet Woodland,
- Lowland Beech and Yew Woodland,
- Lowland Mixed Deciduous Woodland.

224. There are also HAPs for Lowland Wood Pasture and Parkland, and Hedges, both of which have implications for woodland management.

225. Collectively the region's Local Biodiversity Action Plans contain many actions that are likely to affect woodland management. These relate to:

- 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.

226. One of the Government's headline indicators of sustainable development, included within the biodiversity strategy, is the population of wild birds. The objective being the reversal of the long-term decline in populations of farmland and woodland birds. An East of England regional version of the index exists.

227. The East of England has a number of key areas in which conservation bodies are keen to see the restoration or re-creation of lowland heath, another habitat for which a national HAP has been prepared. Most of these areas are currently covered by woodland, with the Forestry Commission having the major landholding interest. There is continued and increased pressure on landowners to convert woodland or forested land into heathland.

228. Despite the challenging HAP target for the restoration and creation of wet woodland in the Region, over 180 hectares of such woodland has been felled to recreate fen or reed bed habitats since 1997.

229. The very high deer population of the region presents a severe threat to the ecological importance of many woodlands, particularly ASNW. Without effective management, it is expected that deer numbers may double within the next few years, with resultant greater impact on woodlands.

230. There is anecdotal evidence that the high grey squirrel population has an adverse impact on the populations of breeding woodland birds and on the regenerative capacity for a number of tree and shrub species.



Figure 9 Map of Ancient woodland

What is being done for biodiversity?

There is no lack of woodland management activity in the region for biodiversity and it would be fruitless to try to summarise it, but a number of key regional developments are however in progress.

Targets for the maintenance, restoration and creation of semi-natural woodland have been agreed by the East of England Biodiversity Forum.

Habitat	Maintain	Restore	Create
Lowland mixed deciduous woodland	100% of existing	1250ha by 2010	1250ha by 2010
Wet woodland	100% of existing	200ha by 2010	150ha by 2010
Wood pasture and parkland	100% of existing	250ha by 2010	Expand 18 key sites by 2010

No targets for lowland beech/yew HAP have been included. Climate change evidence for the East of England indicates that beech will be 'unsuitable' across much of the region.

English Nature, EEDA, the Forestry Commission, the RSPB and other partners have begun to discuss a means to identify the 'best' sites for heathland re-creation at the regional scale.

A partnership of the regional Wildlife Trusts have been contracted by the Forestry Commission to identify three clusters of ASNW and PAWS in each of the six counties that could be targeted for restoration and expansion.

Research into management of deer and squirrel populations is ongoing at the regional and national levels.

Opportunities for biodiversity.

As with existing activity, there are many opportunities for biodiversity enhancement. Most of these are included in existing Local Biodiversity Action Plans and do not need repeating here. Other issues, particularly research and policy development into the impact of high deer and squirrel populations on woodland habitats need to be undertaken at a national level. Some activities however could be instigated at the regional level:

- Develop opportunity maps for habitat restoration and re-creation that include both woodland and non-woodland habitats.
- Heighten awareness of the importance of trees and woodlands in biodiversity, particularly within urban areas.
- Ensure woodland SPAs, SACs and SSSIs are brought into favourable condition.

Initiatives for Biodiversity

- | | |
|-----|---|
| NE3 | Promote the establishment and management of woodland within an integrated functional landscape to protect the historic environment and enhance biodiversity. |
| NE4 | Help deliver Habitat Action Plans and Species Action Plans particularly through the management of native or ancient woodland, wood pasture and veteran trees. |

To support this initiative a series of actions will be taken. Each action will require resources and partners to achieve it. Please refer to the Action Plan that accompanies this Strategy (www.woodlandforlife.net/wfl-action).

DELIVERY METHODS

231. The vision of this Strategy can only be realised through positive partnerships between all interested parties.
232. The strategy is supported by an Action Plan and a number of methods will be utilised in its delivery:

- direct action by public sector bodies on land they own or manage. The Forestry Commission is likely to be a major player in this respect with both existing woodland areas and possible land acquisition, as has happened in Thames Chase;
- use of the planning system to achieve woodland management and planting is association with development;
- targeted grant assistance, both geographical and by objective, particularly to the private sector;
- partnership development and working; combining expertise, effort and resources may improve the ability to implement proposals and attract enhanced funding sources;
- community involvement in decision making and implementation;
- extension services (i.e. advice and support networks);
- market development to improve economic viability, and
- 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

233. Dozens of organisations and hundreds of individuals are already involved in the delivery of the 17 strategic initiatives included within this strategy. Not surprisingly therefore it will be a mammoth task to monitor the actions and achievements of these partners, but without feedback it will not be possible to determine relative success as initiatives are pursued.
234. A monitoring process has been adopted using three complementary channels:

Business and Corporate Planning

235. Every partner organisation that has signed up to the 2004-2009 Action Plan will contribute to one or more of the actions. In due course these will be reflected in that organisation's own business planning processes. Progress with the various initiatives will thus be monitored through their annual reporting cycle. Partners will be requested to post, at least annually, their progress to the Woodland for life web site, using the following address:
www.woodlandforlife.net/wfl-action
236. Alternatively reports can be emailed to info@woodlandforlife.net. These reports will be collated and the implications for the overall strategy evaluated.
237. In due course, when a new edition of the Action Plan is required, all of these reports and assessments will be used to inform the development process.

Sustainable Development Framework

238. The East of England Regional Assembly (EERA), which is one of the joint publishers of this strategy, is presently monitoring a series of regional trends against its Sustainable Development Framework. A number of the key strategy initiatives will be adopted by EERA and measured using this tool.

Strategy Review Process

239. It is intended that a Steering Group will monitor the progress on key initiatives. This group will note all significant developments and ensure that the Action Plan section of the Woodland for life web site is updated accordingly.
240. Whilst this strategy has a 20-year life span the Action Plan will be thoroughly reviewed every five years to accommodate changing circumstances. At present, the intention is to commence this formal process during 2007 and determine the effectiveness of actions by repeating the baseline study, the Wood Bank, which underpinned the strategy.
241. The use of all three of these channels will ensure developments are accommodated and the Action Plan modified accordingly.
242. To check out progress, or to receive updates about specific initiatives, visit the 'Getting Involved' page of the web site and register to receive automatic email updates. To review the overall situation you will need to visit: www.woodlandforlife.net/wfl-action

Getting Involved

243. The benefits to be realised from the woodlands of the East of England are potentially enormous. They will only be secured however if there are sufficient partners on the ground. That is why the Steering Group wants to encourage as many people as possible to contribute to the wide range of programmes currently underway, or proposed.

Who should be involved?

244. Practitioners are needed who recognise they could make a contribution, via the region's woodland resource, to benefit those who live or work in the east of England.
245. If your specialism or interest is in any way involved with quality of life, spatial planning, the timber or tourism businesses, renewable energy, education or the natural environment you could have a valuable role and the Steering Group would like to hear from you.
246. Woodland owners and managers are key to the success of this Strategy. The Steering Group realises just how difficult it is to dissect a document like this to see exactly how it might relate to an individual circumstance. If you would like to make more of your woodland then please make contact.

GLOSSARY

AONB	<p>Areas of Outstanding Natural Beauty are areas of the finest landscapes of England and Wales, designated under the National Parks and Access to the Countryside Act 1949, specially protected to conserve and enhance their natural beauty for future generations.</p>
ASNW	<p>Ancient Semi-natural Woodland (see AW)</p>
AW	<p>Ancient Woodland is land that has had continuous woodland cover since at least 1600 AD. It is subdivided into two categories: Ancient Semi-natural Woodland (ASNW) if the native tree and shrub cover is retained; and Plantation on Ancient Woodland Sites (PAWS) where the original native tree cover has been felled and replaced by planting, frequently with conifers.</p>
Biodiversity	<p>Biodiversity encompasses the whole variety of life on Earth. It includes all species of plants and animals, but also their genetic variation, and the complex ecosystems of which they are part. It is not restricted to rare or threatened species but includes the whole of the natural world from the commonplace to the critically endangered.</p>
BAP	<p>Biodiversity Action Plan (See UK BAP)</p>
Biogeochemical cycles	<p>Biogeochemical cycles are essentially the continuous transport and transformation of materials in the environment. Materials are transported through life, air, sea and land in a series of cycles. These cycles include the circulation of elements and nutrients upon which life and the earth's climate depend. The most important biogeochemical cycles are those of water, carbon, nitrogen and certain other trace gases.</p>
Brownfield Action Plan:	<p>Within Government's Sustainable Communities Plan, these are to be developed by Regional Development Agencies and English Partnerships in co-operation with local authorities and other relevant agencies and statutory bodies, to guide the remediation and restoration of brownfield land for economic, commercial, residential and leisure uses.</p>
BTCV	<p>British Trust for Conservation Volunteers, is the UK's largest practical conservation charity.</p>
Carbon sequestration	<p>Carbon dioxide concentrations in the atmosphere can be lowered by taking it out and storing in it terrestrial or aquatic ecosystems.</p>

CHP	<p>Combined Heat and Power is the simultaneous production of electricity and heat using a single fuel. The heat produced from the electricity generating process (for example from the exhaust systems of a turbine) is captured and utilised to produce steam. The steam can be used as a heat source for both industrial and domestic purposes and can be used in steam turbines to generate additional electricity (combined cycle power).</p>
Community Strategy	<p>Part I of the Local Government Act 2000 places a duty on principal local authorities to prepare 'community strategies', for promoting or improving the economic, social and environmental well-being of their areas, and contributing to the achievement of sustainable development in the UK.</p>
EcoHomes	<p>EcoHomes provides an authoritative rating for new, converted or renovated homes, and covers houses, apartments and sheltered accommodation. It balances environmental performance with the need for a high quality of life and a safe and healthy internal environment.</p>
Ecological Footprint	<p>The ecological footprint is the area of land and water that is required to support indefinitely the material standard of living of a given human population, using prevailing technology. Ecological footprints demonstrate that we utilise ecological capacity for food, fibres, energy, waste absorption etc. In industrial regions, a large part of these flows is imported.</p>
Ecological Site Classification	<p>ESC provides a method of assessing site quality based on three principal factors: climate, soil moisture regime and soil nutrient regime.</p>
EFS	<p>England Forestry Strategy, A New Focus for England's Woodland's (Forestry Commission, 1998), which sets four strategic priorities and programmes for the woodlands of England.</p>
Forest Education Initiative	<p>A partnership between the Forestry Commission, Woodland Trust, Timber Trades Federation, Forest Industries Development Council, British Trust for Conservation Volunteers and Groundwork that aims to increase young people's understanding of the local and global importance of trees, woodlands, forest environments, forest industry, timber trade and wood products industries.</p>
Forest School	<p>A permanent, natural but safe setting in which children have freedom to roam and to experience the natural world through structured practical activities.</p>

GIS	Geographical Information System is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information.
Green exercise	Undertaking physical activity in a natural environment.
HAP	Habitat Action Plan. (See UK BAP)
Landscape Character Assessment	A technique that has been developed to facilitate systematic analysis, description and classification of the landscape. It involves identification of those features or combinations of elements that contribute to the character of the landscape, thereby enabling the special character and qualities of an area to be understood.
LBAP	Local Biodiversity Action Plan. (See UK BAP)
Local Strategic Partnership	A single non-statutory, multi-agency body, which matches local authority boundaries, and aims to bring together at a local level the different parts of the public, private, community and voluntary sectors.
PAWS	Plantation on Ancient Woodland Site. (See AW)
SAC	Special Areas of Conservation are areas designated under the European Community Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (92/43/EEC), commonly known as the Habitats Directive. They are designed to conserve natural habitats and species of animals and plants which are rare, endangered or vulnerable in the European Community
SAP	Species Action Plan (See UK BAP)
Silviculture	The science, art and practice of caring for woods with respect to human objectives.
Silvopastoral	Silvopastoral systems combine trees with forage and livestock production. The trees are managed for high-value sawlogs and at the same time provide shade and shelter for livestock and forage, reducing stress and sometimes increasing forage production.
SPA	Special Protection Areas are areas designated under Article 4 of the European Community Directive on the Conservation of Wild Birds 1979 (EC79/409), commonly known as the Wild Birds Directive. SPAs are intended to safeguard the habitats of migratory and certain particularly threatened species of birds.
SSSI	Site of Special Scientific Interest (SSSI) is the main nature conservation designation in Great Britain. These sites are special for their plants or animals or habitats, their rocks or landforms or a combination of these.

[Sustainable Communities Plan](#)

The Sustainable Communities Plan, (Sustainable Communities: Building for the Future) published in February 2003, is an initiative from the Office of the Deputy Prime Minister. This brings together new policies and makes links with many existing programmes and policies, all aimed at making communities better places – making them more attractive, safer, more prosperous and creating a better defined sense of community. While concentrating mainly on housing and planning, it also makes links with regeneration and neighbourhood renewal programmes, as well as programmes aimed at improving the “liveability” of the communities in which we live.

[UK BAP](#)

The UK Biodiversity Action Plan was published in January 1994 in response to Article 6 of the Biodiversity Convention, to develop national strategies for the conservation of biological diversity and the sustainable use of biological resources. It committed Government and its agencies to programmes or tasks: to conserve species and habitats; to develop public awareness and understanding; and to contribute to biodiversity work in the European and global context. To deliver the UKBAP three types of Action Plans have been developed which set priorities for nationally important and locally important habitats and wildlife - Species Action Plans, Habitat Action Plans and Local Biodiversity Action Plans.

Veteran tree

A tree that is of interest biologically, culturally or aesthetically because of its age, size or condition.

Wood pasture

Wood-pasture is the product of historic land management systems. Typically, this structure consists of large, open-grown or high forest trees (often pollards) at various densities, in a matrix of grazed grassland, heathland and/or woodland floras.