

Working with the grain of nature

A biodiversity strategy for England



DEFRA

Department for
**Environment,
Food & Rural Affairs**

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Contents

Foreword	6
Executive summary	7
Chapter 1 Introduction: a new biodiversity vision for England	9
Chapter 2 Biodiversity indicators measuring achievement	
Chapter 3 A holistic approach	13
Essay 1: How to manage non-native species	33
Sustainable management by sector	34
Chapter 4 Agriculture	35
Chapter 5 Water and wetlands	42
Chapter 6 Woodland and forestry	48
Chapter 7 Towns, cities and development	53
Essay 2: The effects of climate change on biodiversity	60

Chapter 8	
The coasts and seas	62
The importance of people	67
Chapter 9	
Local and regional action	68
Essay 3: Biodiversity for recreation, health and well-being	72
Chapter 10	
The economics and funding of biodiversity	74
Essay 4: Biodiversity and sustainable tourism	79
Chapter 11	
The engagement of business	80
Chapter 12	
Promoting education and public understanding	87
Essay 5: Involving children and young people	91
Appendices	93
Glossary	175

Foreword



*By the Rt Hon Margaret Beckett MP
Secretary of State for Environment,
Food and Rural Affairs*

In the ten years since the Convention on Biodiversity was signed at the Rio Earth Summit, a massive effort has been made in this country to address and reverse serious declines in our biodiversity. A UK Biodiversity Action Plan was adopted in 1994, resulting in the establishment of recovery plans for over 400 species and habitats. About 100 local biodiversity action plans have also been adopted covering almost all of England. To give even better protection to our most precious wildlife sites we have legislated to give increased powers for positive management for Sites of Special Scientific Interest and proposed to the European Commission 220 sites in England for the strongest protection which must be given under the EU Habitats Directive. We are now also actively looking at what needs to be done to conserve the wealth of biodiversity in the seas around our coasts and beyond, an area hitherto largely neglected.

We have seen some encouraging success stories. In Yorkshire this year the corncrake, one of Europe's rarest birds, bred for the first time in England in decades. Our rivers are the cleanest they have been since the industrial revolution and there are numerous examples of local biodiversity initiatives making real improvements to people's quality of life.

At the World Summit on Sustainable Development in Johannesburg this summer, we committed ourselves to achieving a significant reduction in the current rate of biodiversity loss by 2010. But we are still far from achieving our goals, and we have been very conscious that we have not hitherto articulated a coherent strategy for action across the Board. We have also been conscious that designated sites and species and habitat action plans are not enough; we can only make the difference we want by fundamental shifts in policy and behaviour across the board.

This Biodiversity Strategy for England seeks to do just that. It builds on the foundations we have already laid, but recognises that we need to "mainstream" biodiversity into all our activities. We want to work as far as possible with the grain of nature through our policies for example in agriculture, water, fisheries and woodland management and in urban areas. In many of these spheres we now have historic opportunities.

We in Government are immensely grateful to the very wide range of partners that has worked with us in putting this Strategy together. This is a unique partnership which has been critical of us at times but has challenged us to think ambitiously. We intend to continue to take this inclusive approach in moving towards successful implementation; indeed in many instances we will rely on our partners to help achieve the vision.

This Strategy sets out a work programme for the next five years. I am asking the England Biodiversity Group to take stock of progress every year and to publish a full report in 2006. I am hopeful that the turn of the millennium will be seen by history as a turning point for biodiversity in England.

Worldwide, there is still a long way to go if we are to reverse the trends of biodiversity decline that we have seen in our own lifetimes. This Strategy aims to reaffirm our commitment in England to achieving that goal.

A handwritten signature in black ink that reads "Margaret Beckett".

Rt Hon Margaret Beckett MP

Executive summary

Our vision is for a country – its landscapes and water bodies, coasts and seas, towns and cities – where wild species and habitats are part of healthy functioning ecosystems; where we nurture, treasure and enhance our biodiversity, and where biodiversity is a natural consideration of policies and decisions, and in society as a whole.

We have made good progress in recent years in protecting and enhancing biodiversity in England, with greater protection for Sites of Special Scientific Interest through the Countryside and Rights of Way Act; through the development and implementation of 436 individual Action Plans for priority habitats and species; through implementation of the Habitats Directive and through increasing use of agri-environment programmes. Challenging Public Service Agreement targets have been set to bring 95% of SSSIs into favourable condition by 2010 and to reverse the decline in farmland birds. A comprehensive review of nature conservation in the marine environment is underway, with an ambitious demonstration project taking place in the Irish Sea, as part of the Government's vision to make a real difference to the quality of our oceans and seas within a generation. But we must recognise that we can only secure the long-term health of biodiversity that is needed to bring a truly sustainable future by also achieving fundamental changes to public policy and in the behaviour of people across society as a whole.

The Biodiversity Strategy for England sets this fundamental shift in train by ensuring that biodiversity considerations become embedded in all the main sectors of economic activity, public and private. Agriculture is particularly important, and the Strategy capitalises on the opportunities presented by the report of the Policy Commission on Food and Farming and the current review of the Common Agricultural Policy. But the Strategy also sets out a programme for the next five years for the other main policy sectors, to make the changes necessary to conserve, enhance and work with the grain of nature and ecosystems rather than against them. It takes account of climate change as one of the most important factors affecting biodiversity and influencing our policies.

This Strategy is a Government strategy, but it has been prepared with the active partnership of a broad range of stakeholders in the public, voluntary and private sectors. We will continue this partnership approach, which is vital to successful implementation.

Chapters 4–7 of the Strategy set out a series of actions that will be taken by the Government and its partners to make biodiversity a fundamental consideration in:–

- **Agriculture: encouraging the management of farming and agricultural land so as to conserve and enhance biodiversity as part of the Government's Sustainable Food and Farming Strategy**
- **Water: aiming for a whole catchment approach to the wise, sustainable use of water and wetlands**
- **Woodland: with the management and extension of woodland so as to promote enhanced biodiversity and quality of life**
- **Marine and coastal management: so as to achieve the sustainable use and management of our coasts and seas using natural processes and the ecosystem-based approach**
- **Urban areas: where biodiversity needs to become a part of the development of policy on sustainable communities, urban green space and the built environment**

The Strategy also looks at ways of engaging society as a whole in understanding the needs of biodiversity and what can be done by everyone to help conserve and enhance it. To deliver our

Strategy, we must ensure there are other frameworks and principles in place. Other Chapters set out programmes of measures on:

BETTER INFORMATION ABOUT BIODIVERSITY

- **We shall aim to measure biodiversity trends, the effects of our policies and the value of biodiversity to people. The Strategy includes plans for a new web-based Biodiversity Action Reporting System (BARS) to be launched in 2003**

THE DEVELOPMENT OF OBJECTIVES AND INDICATORS

- **We will continue to work to meet the biodiversity targets in the Habitat and Species Action Plans and, with clear policy goals and objectives, use these and other relevant indicators to measure our progress**
- **A new set of biodiversity indicators will be published within a year**

ACHIEVING PARTNERSHIP

- **Government alone cannot achieve the objectives. We will continue to support, build and rely on the widest possible partnership across the statutory, voluntary, private, academic and business sectors**
- **An essential part of the Strategy is developing and supporting biodiversity partnerships in the English regions and at more local levels; examples of the work of Local Biodiversity Action Plan partnerships will be published in the coming months**

INVOLVING EVERYBODY

- **We will encourage business to act for biodiversity in the boardroom, through the supply chain, in their management systems, in their annual reports and accounts, and on the ground**

- **We will help make biodiversity part of people's everyday lives through information, communication and education**

- **We will establish a mechanism to involve children and young people in the development of biodiversity policy**

SKILLS AND EXPERTISE

- **We will make sure that we use the best possible and most up to date scientific information and professional, technical and academic expertise to support our actions, applying the precautionary principle where scientific evidence is not conclusive**

The England Biodiversity Group, which includes the principal stakeholders from the public, voluntary and private sectors, will oversee the Strategy's implementation. The Strategy is intended to be a living document, subject to regular review and roll-forward.

- **We shall appoint policy focal points from within Government or a relevant statutory agency to monitor and report to the England Biodiversity Group on implementation in the main policy sectors**
- **We shall establish new Strategy implementation groups to take forward the cross-cutting work programmes for local and regional action; economics and funding; business and biodiversity; and education and public understanding**
- **We shall issue daughter documents on targets and indicators, on information strategies and on other issues where further elaboration is needed**
- **The England Biodiversity Group will take stock of progress annually and publish a first full report in 2006**

Introduction

A NEW BIODIVERSITY VISION FOR ENGLAND

1.1 Biodiversity – the variety of life on earth – is at the heart of our aim for a more sustainable future. We have a duty to ensure a diverse and thriving natural environment, for it is essential to the economic, social and spiritual health and well-being of this and future generations.



(Mike Hammett, English Nature)
Bees put a buzz into an English summer as well as providing a free pollination service for some crops and wild flowers.

1.2 England's biodiversity suffered heavy losses in the 20th century. Increasing demands on natural resources and systems, the pressures of urban and infrastructure expansion and the intensification of agricultural production all contributed to declines in the extent and quality of wildlife habitats and to declines in the population

of many of our wildlife species. In addition we have significantly affected the size, abundance, distribution and composition of marine communities. Over the years society has made the choices that produce these effects. But many of these choices were made without sufficient understanding as to the wholesale biodiversity losses that would result. The effects have been well documented, for example:

- Farmland bird populations fell by almost half between 1977 and 1993 – though have been relatively stable since
- By the 1980s, unimproved lowland meadows had declined by 97% over the previous 50 years. Declines have continued since at a rate of 2-10% per year
- By 1980, over a quarter of upland heathland had been lost in England, with losses of 36% in Cumbria. Widespread declines in the condition of the remaining habitat still continue
- Between 1978 and 1998 the diversity of plants in infertile grasslands in England and Wales declined by 20%
- Breeding populations in England of the marsh fritillary butterfly have reduced by 66% in the 10 years to 2000 as a result of over-grazing or inappropriate management¹
- Water voles have disappeared from 94% of the sites where they were previously recorded

1.3 The task ahead is great, and there are many uncertainties. In some instances the precise cause and effect of biodiversity decline is still unclear. Recently, the news that the once-ubiquitous house sparrow has suffered an overall 40% decline in the last 30 years and a 97% decline in some urban areas has shocked people – the more so because we do not yet understand what has caused it. What is more, there are fresh

¹ Hobson *et al* 2001 British Wildlife Vol 13 No 6 Aug 2002

challenges ahead, particularly climate change, which could have dramatic effects on our biodiversity and pose difficult questions on how far particular habitats and species can be conserved in their current locations in the long term.



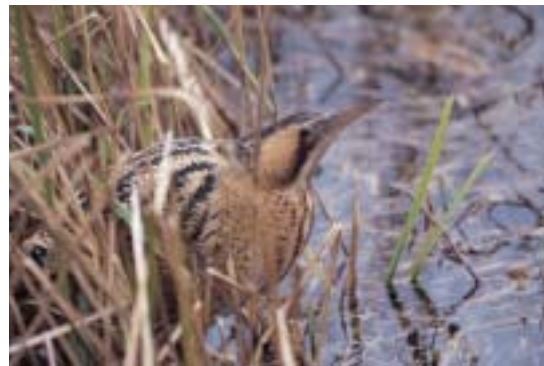
(Chris Gomersall, RSPB Images)
The house sparrow has declined dramatically in the last 30 years.

1.4 Historically, the conservation of nature has been held as separate from, and often in conflict with, economic and social development. Truly sustainable development means recognising that we must continue to strive for economic and social development but increasingly find ways of going about our business with the grain of nature and natural systems. Indeed, in some cases biodiversity can be a key determinant or driver of social and economic development. Above all, we must recognise that the quality of our natural surroundings enhances the quality of our lives in the town, the country, on the coast and at sea.



(Peter Wakely, English Nature)
Working with nature we can create wildlife habitats and provide coastal defence.

1.5 These principles were fundamental to the UN Convention on Biological Diversity (CBD) signed at the Earth Summit in Rio de Janeiro in 1992. They have been reaffirmed by the World Summit on Sustainable Development held in Johannesburg in 2002, with agreement reached to significantly reduce the rate of biodiversity loss by 2010 and to implement strategies to support ecosystems. There was also a strong commitment to urgently restore fish stocks, no later than 2015 where possible .



(Andrew Hay, RSPB Images)
Bitterns are booming, they have recently been seen at both Barn Elms and Rye Meads in London.

1.6 The UK Biodiversity Action Plan was published in 1994 in response to the CBD's requirements². Through a series of Action Plans for priority habitats and species (HAPs and SAPs), it established recovery targets for our most threatened species and habitats, identified the reasons for their decline and prioritised the work that was needed to bring about improvements in each case. As a result, better co-ordinated action has led to some spectacular recoveries in the fortunes of some species which had been on the brink of disappearance in the UK. Otters and salmon have begun to re-colonise our cleaner rivers; the stone curlew has already met one of its targets and cereal field margins are improving. There have even been sightings of the elusive bittern in central London. We hope that history will show that the turn of the millennium proved to be a turning point for biodiversity after historic declines.

² Biodiversity, the UK Action Plan HMSO 1994



(Peter Wakely, English Nature)

Starfruit: formerly found at over 100 sites it declined to only one pond by the early 1980s but intense conservation action has now restored it to 10 sites.

1.7 The UK Biodiversity Action Plan continues to be taken forward under the UK Biodiversity Partnership. But devolution has meant that the focus of biodiversity, as with many other policies, rests with the different countries of the United Kingdom. In the new situation it is important to have a strategy specifically for England, to look more closely at how we will integrate biodiversity considerations across the range of policies and programmes over the next five years and beyond. In addition, this Strategy is the principal means by which the Government will comply with its duties under section 74 of the Countryside and Rights of Way Act 2000. These are:

- to have regard to the purpose of the conservation of biological diversity in the exercise of Government's functions
- to take, or promote the taking by others, of steps to further the conservation of the habitats and species which together are of principal importance for the conservation of biodiversity

The list of habitats and species required by section 74(2) are published separately³.

Green Ministers biodiversity checklist

In 2000, the Committee of Green Ministers issued a checklist⁴ for all Government Departments to identify how they could take action for biodiversity on their own estates, as employers and in their policies and programmes. Government Departments and agencies have responded to the checklist, for example:

- The Highways Agency issued its Biodiversity Action Plan for the trunk road and motorway network in March 2002, investing £15m and setting targets for species and habitats
- The Home Office is developing a Biodiversity Action Plan for the Prison Service, in partnership with English Nature and the Wildlife Trusts, in stages across the whole of the prison estate
- National Police Training Colleges all have biodiversity plans
- The NHS Purchasing and Supply Agency's Environmental Management System includes a requirement to preserve and promote biodiversity on the Agency's estate, mainly through the encouragement of wildlife gardens
- Large areas of MOD land are managed with biodiversity in mind and an overarching MOD Biodiversity Action Plan is in preparation

This Strategy builds on these beginnings by seeking to integrate biodiversity into policy across the board.

³ Countryside Rights of Way Act 2000: Section 74 Lists of Habitats and Species of principal importance for England Defra 2002

⁴ Making biodiversity happen across Government: Green ministers biodiversity checklist DETR March 2000

1.8 The aim of the Strategy is to ensure:

- *A halting, and if possible a reversal, of declines in priority habitats and species, with wild species and habitats as part of healthy, functioning ecosystems*
- *The general acceptance of biodiversity's essential role in enhancing the quality of life, with its conservation becoming a natural consideration in all relevant public, private and non-governmental decisions and policies*

IMPLEMENTATION THROUGH PARTNERSHIP

1.9 The Government has worked with the England Biodiversity Group (Appendix 11) to prepare this Strategy. The Group brings together representatives from the Government and statutory agencies, conservation organisations and the private sector. The Group established a number of work streams to consider the main policy sectors and cross-cutting issues. Each work stream leader consulted a wide range of relevant interests, nationally and locally, to identify the principal concerns and to propose strategic directions. They worked with the England Biodiversity Group's Strategy Management Group to bring the Strategy together into a coherent whole.

1.10 The Government considers this approach to be a model of partnership and participation. We are optimistic that, as a result, we have achieved joint ownership of the Strategy across the Government and among key stakeholders. The England Biodiversity Group will continue to apply this inclusive approach in overseeing the implementation and regular review of the Strategy.



(Hugh Clark, English Nature)
Successful conservation of the Water Vole requires input from a broad partnership.

1.11 The England Biodiversity Group will be augmented by policy leads from within Government or a relevant statutory agency who will be the main focal points for monitoring the implementation of the key policy sectors covered by the Strategy. In addition, new Strategy implementation groups will be established, reporting to the England Biodiversity Group, to take forward the cross-cutting work programmes for local and regional action; economics and funding; business and biodiversity and education and public understanding.

- **The England Biodiversity Group will take stock of progress annually and publish a first full report in 2006.**

1.12 Through partnership, the Strategy will be implemented by a range of players inside and outside Government. The Strategy aims to be aspirational and challenging in its vision for the future. In some longer-term cases, the specific funding sources for the activities in the programmes of action have not yet been identified or earmarked. However, in general, the philosophy of integrating biodiversity across the range of policies and programmes should mean that these main programmes will increasingly be the vehicle of delivery for biodiversity objectives. For example, the 2002 Spending Review settlement made substantial provision for the implementation of the fundamental reforms to food and farming that will increasingly deliver the biodiversity gains we want to see in that sector. The Strategy implementation group looking at economics and funding will, as part of its own work programme, look closely at the extent to which there are specific gaps or shortcomings in funding programmes that could inhibit the delivery of the Strategy. These will then be taken into account in the considerations of future spending reviews and programme allocations.

1.13 This Strategy does not introduce any new proposals that change the regulatory framework for businesses, charities or the voluntary sector. If future implementation gives rise to such proposals, Regulatory Impact Assessments will be published as appropriate.

Biodiversity indicators measuring achievement

2.1 The success of the Strategy will depend on continuous, sustainable improvement. Indicators will allow us to monitor progress and to measure success.

Defra's objectives and performance targets

A key Defra objective is: to protect and improve the rural, urban, marine and global environment and lead on the integration of these with other policies across Government and internationally.

Under this objective, key targets are: to care for our natural heritage, make the countryside attractive and enjoyable for all and preserve biological diversity by –

- reversing the long-term decline in the number of farmland birds by 2020, as measured annually against underlying trends
- bringing into favourable condition by 2010 95% of all nationally important wildlife sites

2.2 The Government is already committed, in its Quality of Life Counts⁵ indicators, to using key indicators to measure progress with sustainable development in the UK. The ones that are particularly important for biodiversity are:

- The populations of wild birds
- The condition of Sites of Special Scientific Interest
- Progress with Biodiversity Action Plans
- Area of land under agri-environment agreement
- Biological quality of rivers

- Fish stocks around the UK fished within safe limits

We have adopted these quality of life indicators as **headline indicators** for England's Biodiversity Strategy. Two further indicators:

- Progress with Local Biodiversity Action Plans
- Public attitudes to biodiversity

will complete a set of eight headline indicators (H1–H8). Where possible and appropriate the indicators will be calculated for England.

Current trends in each of the headline indicators and a summary assessment are presented below.



(Chris Gomersall, RSPB Images)
The linnet, one of a number of farmland birds in long-term decline.

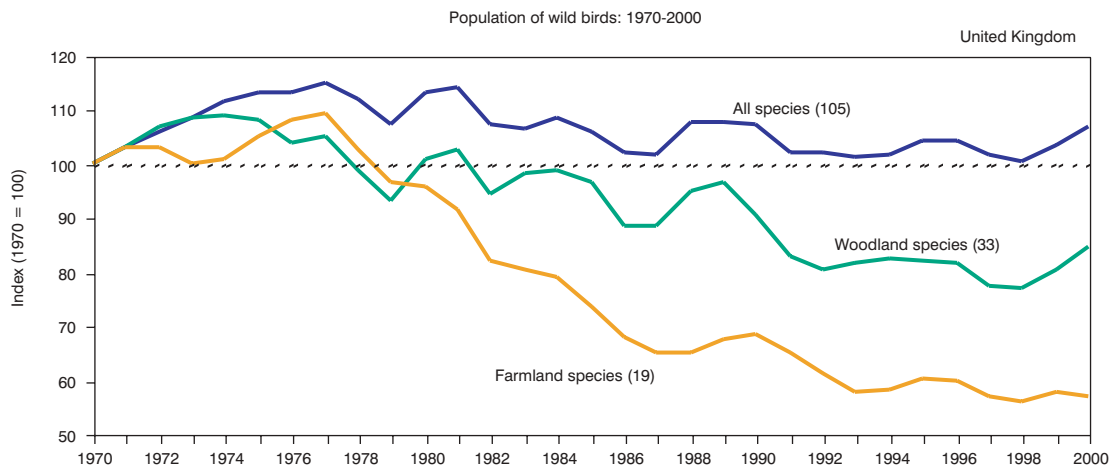
2.3 Using data as and when it becomes available, a range of additional targets and indicators are proposed in later sections of the Strategy so that progress in those particular areas can be more closely monitored. In particular, the wild birds and SSSI indicators will be broken down by sector – as has already happened with farmland and woodland birds – so that the relative contribution of each of the sectors can be compared against the headline index. Progress with Habitat and Species Action Plans will also be broken down by sector.

⁵ Quality of Life Counts DETR December 1999

2.4 Many of the indicators proposed require some development before they can be used.
We shall publish a full set of biodiversity

indicators for England, showing trends where possible, within the next year.

H1 Populations of wild birds



Source: RSPB, BTO, DEFRA

Figures in brackets show the number of species included in each category

2.5 Bird populations are considered as a good indicator of the broad state of biodiversity because they occupy a wide range of habitats, they tend to be near or at the top of the food chain and considerable long-term data on bird populations have been collected. We want to reverse previous declines in bird populations.

2.6 Indicator H1 shows that the index for all species⁶ has remained at or above 1970 levels over the past thirty years. However, there have been sharp declines in farmland and woodland birds since the mid-1970s. The farmland species index in 2000 was 43% below 1970 levels, with the most severe declines in populations of tree sparrow, grey partridge and corn bunting. The index for woodland species in 2000 was 15% below 1970 levels, with the largest population

declines in tree pipit and lesser redpoll. Woodland birds have shown some signs of recovery in recent years.

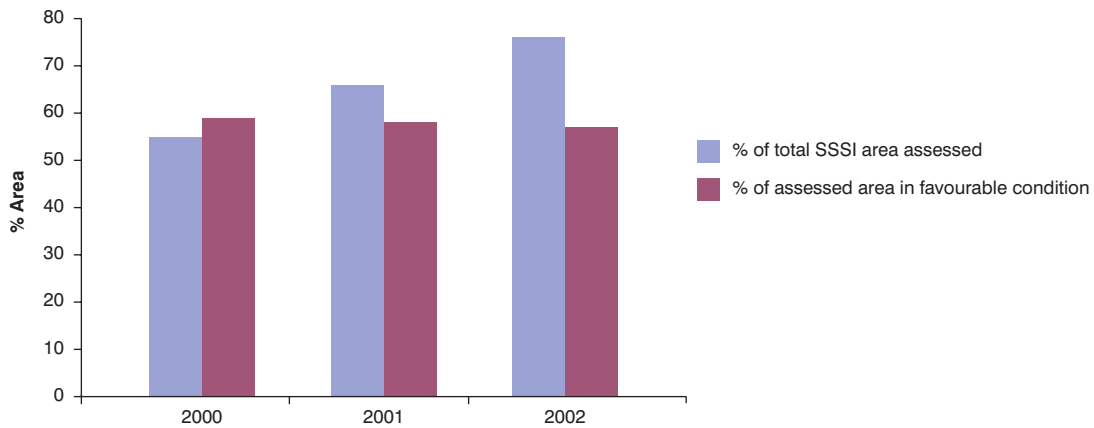
2.7 Declines in farmland birds have been linked to changes in agricultural practices, especially during the 1970s and 1980s. Reasons for declines in woodland birds are less certain.

One of the Government's Public Service Agreement targets is to reverse the decline in farmland birds by 2020. Actions intended to reverse declines in farmland and woodland birds are presented in Chapters 4 and 6, respectively.

2.8 The indicator is currently based on data from UK-wide surveys and will be revised on the basis of survey data for England only.

⁶ The index for all species includes 105 bird species from a wide range of habitats, for which consistent data are available across the UK.

H2 Condition of Sites of Special Scientific Interest (SSSIs) in England

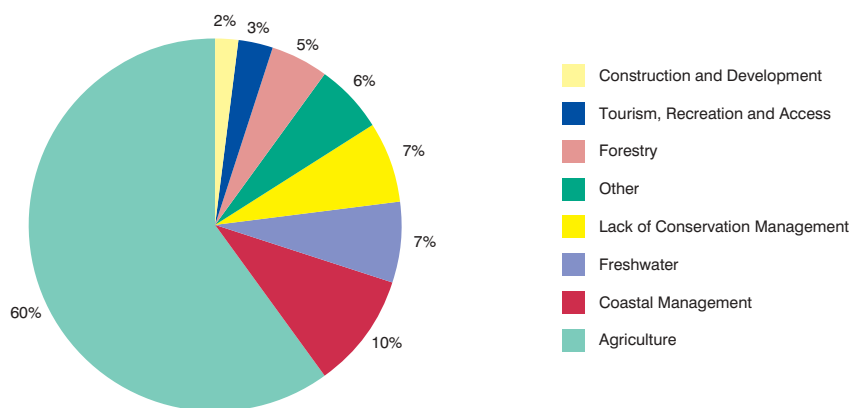


Source: English Nature

2.9 Sites of Special Scientific Interest (SSSIs) are intended to safeguard the best of England’s wildlife and geology. There are 4102 sites covering about 1 million hectares, around 7.7% of the total land area of England. A six-year programme to assess the condition of all SSSIs was started by English Nature in 1997.

2.10 Indicator H2, condition of SSSIs, shows that as the area of SSSIs assessed increased from 55% in 2000 to 76% in 2002, the proportion of these SSSIs in favourable condition has remained at around 56–59%. **The Government’s Public Service Agreement target is to bring 95% of nationally important wildlife sites into favourable condition by 2010.**

Reasons for unfavourable condition by sector
% area of SSSIs assessed in 2000-2002

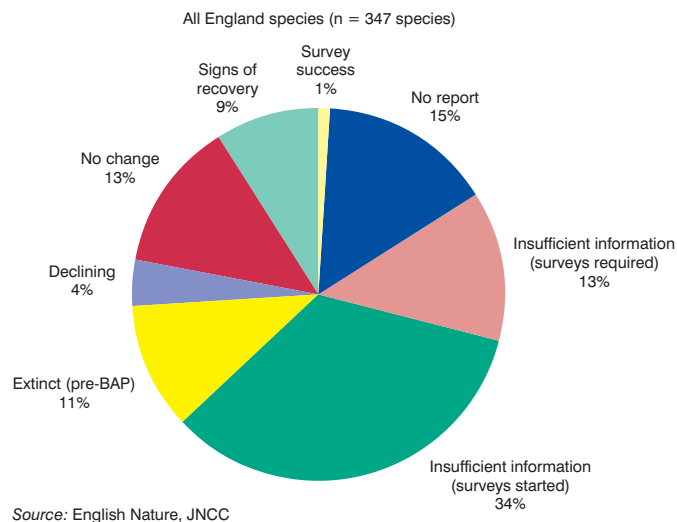


Source: English Nature

2.11 Amongst the reasons why sites are in unfavourable condition, agricultural management, in particular over-grazing of upland sites, predominates. In consultation with English Nature

and other key partners we are developing a comprehensive approach to delivery of the target, addressing all the various factors that are currently affecting sites. See Chapter 3 for further details.

H3 Progress with Biodiversity Action Plans

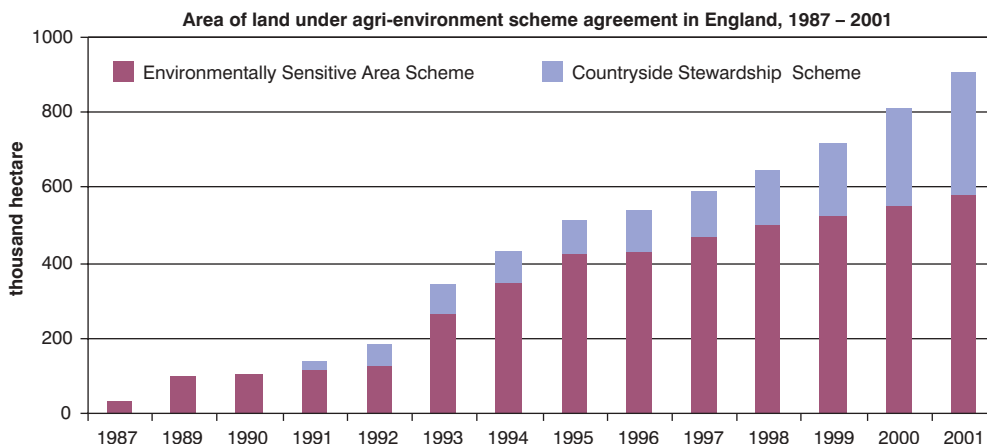


2.12 As part of the UK Biodiversity Action Plan, quantified, biological, time-limited targets have been agreed in Species and Habitat Action Plans (SAPs and HAPs) for 391 priority species and 45 priority habitats. Action Plans were published in a series of tranches between 1995 and 1999. 347 of the SAPs are relevant to England. The first reports of progress with SAPs and HAPs were made in 1999. A further reporting round is currently under way.

thought. A further 9% of species showed signs of recovery. However, for nearly half of the species insufficient information on biological status was available to assess achievement. No reports were produced for a further 15% – mainly the more-recently published SAPs. Habitat Action Plans are not so far included because too few plans were assessed in the 1999 reporting round. The results are not unexpected because few targets were to be achieved within the first reporting period and many plans had only just got underway. The indicator will be developed further to include an index of interim progress towards targets as well as achievement of targets.

2.13 Indicator H3, progress with Biodiversity Action Plans, shows limited progress towards achieving biological targets in the first reporting round. Surveys have shown 3 species (1%) to be substantially more common than previously

H4 Area of land under agri-environment agreement

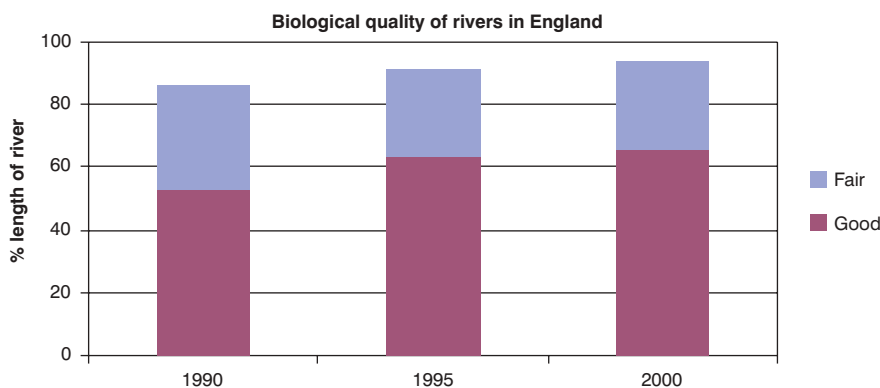


2.14 Since 1987, a number of voluntary agri-environment schemes have been introduced to provide payments to farmers to protect and enhance biodiversity, landscapes and historic features and to promote public access. Schemes have also been introduced to encourage the management of woodlands to benefit wildlife. We want to see an increasing proportion of total farmed land and woods under positive environmental management, and a situation where most farmers participate in at least the entry level agri-environmental schemes.

2.15 Indicator H4, area of land under agri-environment agreement, shows a steady increase to 907,000 ha, 7% of the land area of England in 1998 . The Government is reviewing the current framework of agri-environment schemes in England to develop a revised structure that will enable them to contribute effectively to solving current and future environmental problems. Chapter 4 gives further details of the programme of action.

2.16 Indicator H4 will be developed to include the Woodland Grant Scheme and to show the area of BAP Priority Habitats under agri-environment scheme agreement.

H5 Biological quality of rivers



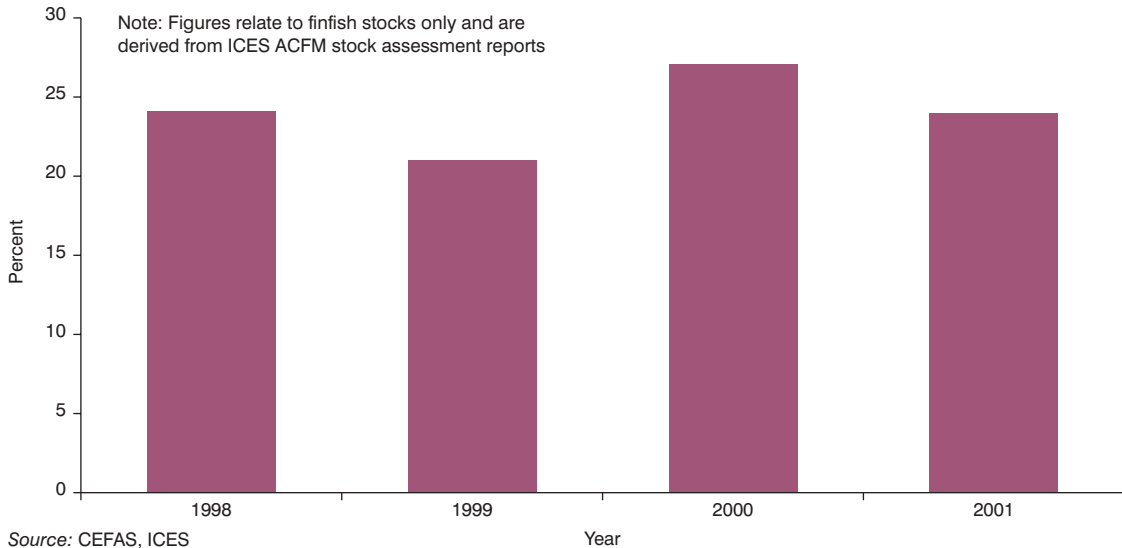
Source: Environment Agency

2.17 The ecological health of the water environment is a key test of its sustainable management. Nutrient, sediment and pesticide inputs to rivers and lakes, derived from both point and diffuse sources, have caused deterioration in water quality and damage to aquatic wildlife. We want to see a continuing trend towards improving biological quality of rivers and lakes.

2.19 Assessment of the condition of surface waters is a requirement of the new EU Water Framework Directive. We therefore intend to replace the indicator of biological quality of rivers with a more comprehensive indicator of the proportion of surface waters in good condition when new data become available.

2.18 Indicator H5, the proportion of river length in England classified as good or fair biological quality, has increased from 86% in 1990 to 94% in 2000, reflecting major investments in and control of point source pollution, especially sewage plants. But despite recent improvements, 55% of rivers still have high phosphate levels and 32% have high nitrate levels, factors which may cause eutrophication problems.

H6 Fish stocks around the UK fished within safe limits



2.20 Fish are a major component of marine biodiversity. They are also important in the food chain for sea birds, seals and cetaceans and, of course, as a source of food and employment for people. We want responsible and sustainable fisheries that ensure healthy marine ecosystems and provide a livelihood for those in the industry. We want to see an increase in the percentage of fish stocks fished within safe limits.

2.21 Indicator H6 shows that in 2001 only 24% of fish stocks around the UK⁷ were fished within safe biological limits, with little change over the past four years. This indicator demonstrates that the EU Common Fisheries Policy (CFP) has failed to meet its objectives. We will work with the European Commission and EU partners to implement the EU Biodiversity Action Plan for Fisheries⁸ and to ensure that the review of the CFP gives full weight to sustainability and biodiversity matters.

H7 Progress with Local Biodiversity Action Plans (LBAPs)

2.22 Delivery of the Strategy will require the full integration of biodiversity considerations within local and regional policies, strategies and programmes. We need healthy and flourishing broad partnerships that champion, promote and enhance local and regional biodiversity and its distinctiveness and help to deliver national priorities. We want all Local Biodiversity Action Plan programmes to demonstrate that partnerships have been established, that local and national priorities have been identified and frameworks are in place for monitoring progress.

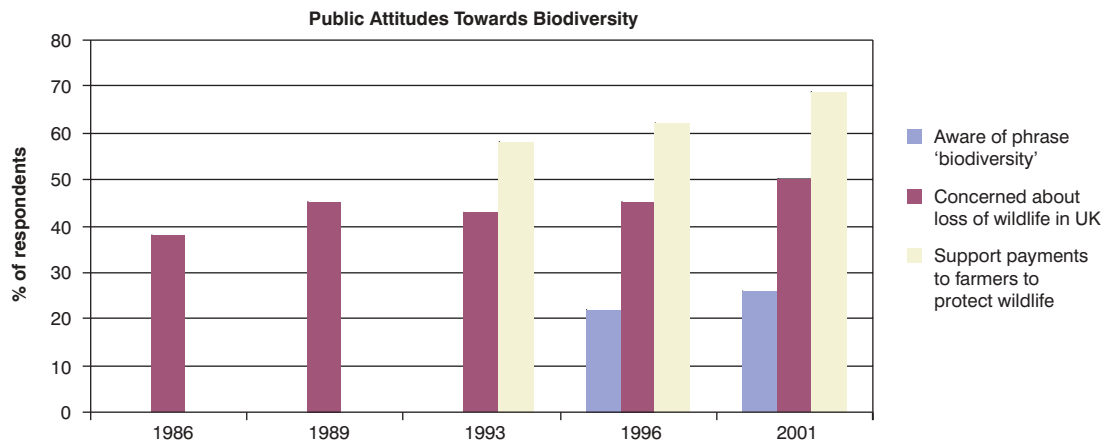
2.23 Since 1995 approximately 100 Local Partnerships, covering most of England, and 9 Regional Biodiversity Partnerships have been established.

2.24 Indicator H7, progress with Local Biodiversity Action Plans, will be developed to measure LBAPs against a set of principles for comprehensive and sustainable plans. Information will be gathered as part of the Biodiversity Action Reporting System (BARS),

⁷ Statistics are gathered for UK waters.

⁸ Biodiversity Action Plan for Fisheries: COM (2001) 162 Final. Volume IV/V

H8 Public attitudes to biodiversity⁸



Source: DEFRA

which is being piloted in 2002.

2.25 The success of this Strategy will depend largely on creating opportunities for the population as a whole to understand the value of biodiversity for their life and well-being.

2.26 Indicator H8, public attitudes to biodiversity, shows that the proportion of respondents in England concerned about loss of wildlife in the UK has risen from 38% in 1986 to 50% in 2001. Respondents who agree with the policy to pay farmers to protect wildlife has increased from 58% in 1993 to 69% in 2001. The term 'biodiversity' was introduced into public policy at the Earth Summit in Rio in 1992. It is still a relatively unfamiliar word but awareness in respondents has increased from 22% in 1996 to 26% in 2001. The indicator shows that awareness, concern and willingness to pay for biodiversity is increasing.

⁸ The chart shows the responses to questions asked in the Public Attitude Survey in England and Wales in 1986, 1989, 1993 and 1996/7 and in England only in 2001. *Aware of phrase 'biodiversity'* shows the % of respondents answering 'yes' to the question 'which of these phrases have you heard of' including 'biodiversity'. *Concerned about loss of wildlife in UK* shows the % of respondents 'very worried' when asked 'how worried do you feel personally about loss of plants and animals in the UK'. *Support payments to farmers to protect wildlife* shows % of respondents who 'strongly supported' or 'slightly supported' the policy to 'pay farmers to protect and regenerate landscapes and habitats'.

Chapter 2
Biodiversity
indicators measuring
achievement

Summary assessment of headline indicators			
Headline Indicators		Update Frequency	Assessment
H1	The populations of wild birds	Annual	≈
H2	The condition of Sites of Special Scientific Interest	Annual	≈
H3	Progress with Biodiversity Action Plans	3 Yearly	≈
H4	Area of land under agri-environment agreement	Annual	✓
H5	Biological quality of rivers	5 Yearly	✓
H6	Fish stocks around the UK fished within safe limits	Annual	X
H7	Progress with Local Biodiversity Action Plans	3 Yearly	≈
H8	Public attitudes to biodiversity	3 Yearly	✓
✓	indicator trend moving towards objective		
≈	indicator trend uncertain or insufficient data		
X	indicator trend not moving towards objective		

2.27 Three of the headline indicators, H4, H5 and H8 show clear positive trends towards their respective objectives. H6, fish stocks, shows no improvement over the four year period 1998-2001. For indicator H1, the index of farmland and woodland birds remains well below 1970 levels. There has been a recently improving trend in woodland birds but no sign of improvement in farmland birds. The current trend of H1 is therefore assessed as uncertain. The remaining three indicators, H2, H3 and H7, are based on new data for which a time series is not yet available.

A holistic approach

THE CHANGING EMPHASIS OF NATURE CONSERVATION

3.1 In the past, policy on the conservation of biodiversity tended to concentrate on designating areas for conservation and on the protection of species at risk. However, the UK Biodiversity Action Plan, 1994, prepared in response to the Convention on Biological Diversity (CBD) recognised that to halt and reverse biodiversity losses would require a combination of actions and policies that affect the environment as a whole. Biodiversity policy has been based on a number of programmes, including:

- The protection of nature conservation sites
- Specific plans for the conservation of priority habitats and species through the UK BAP
- Provisions to protect species at risk, including from wildlife crime
- Measures against non-native and invasive species
- The extension of protection to marine conservation areas, which had hitherto been relatively neglected
- Systematic collection, collation and dissemination of information about trends in biodiversity

3.2 These all remain an essential part of our biodiversity programme and current policies on each are described briefly below. But a holistic approach, that ensures that biodiversity is an integral part of all policies and programmes, and which is necessary to protect habitats and species from damage resulting from policy or market failure, has not been fully developed. The aim of this Strategy is to ensure that in future biodiversity is built into all policies and programmes in a

positive way. This is essential to ensuring that conservation is implemented across the board – for instance ensuring that special sites sit within a wider ‘wildlife-friendly’ landscape that reduces fragmentation of habitats, helps species populations to disperse and regenerate and supports wide ranging species in healthy ecosystems. The Countryside and Rights of Way Act 2000 began the change in focus of nature conservation from defensive protection against damage to positive management and restoration. The Strategy takes this process further by developing plans for each of the main sectors of economic and social activity that affect biodiversity as a whole.



(Peter Wakely, English Nature)
A diverse, vibrant countryside and urban greenspace can encourage people to take up and maintain exercise.

3.3 The Strategy is based on the premise that healthy functioning ecosystems provide benefits to people. Some relate directly to economic activity, such as tourism or countryside services, but many are not immediately apparent, are not reflected in market prices and yet have real value to our lives. For example, essential cliff protection and flood defence services are provided by intertidal habitats absorbing the energy of the waves, and functioning wetlands and floodplains can also reduce flood risk. It is also becoming clear that protecting and enhancing biodiversity has social benefits in providing quality accessible natural

green space close to where people live and work, and attractive countryside that can improve both physical and mental well-being.

3.4 A primary aim of habitat restoration is to link existing areas of high habitat quality, so increasing their viability. For example, heathland can be extended through the removal of plantation woodland. Habitat creation can seek to maximise the opportunities provided by changes in land-use

or new development to enhance biodiversity, for example, through the creation of new wetlands, after gravel extraction. There is an increasing number of projects in the pipeline led by nature conservation bodies and engaging a wide range of stakeholders to create larger areas for biodiversity. At present most of these are relatively small-scale but in the future such action may be possible at a landscape scale, to support broader public policy objectives.

Wet Fens for the Future

The 3,400km² of the East Anglian fens were substantially drained by the mid-19th century. Today, less than 1% of the historic resource remains, mainly as small relic fenland and washlands, of which the Ouse and Nene Washes are the largest.

With increasing recognition of the value of wetlands for flood alleviation, biodiversity, public enjoyment and tourism, several bodies have joined to present a vision for fenland restoration. *Wet Fens for the Future* seeks the large-scale restoration of fenland such that, once again, wetlands play a significant role in the economic, social and environmental life of the Fens. It is being led by the Countryside Agency, English Nature, the Environment Agency, Cambridgeshire and Lincolnshire County Councils and the RSPB.

Several key projects are helping to realise this vision.

At **Wicken Fen** the National Trust is expanding their property, aiming to acquire 3700 ha of neighbouring farmland for biodiversity and a 'green lung' for the people of Cambridge and Newmarket. Recently 168 ha at Burwell Fen Farm – wetland until a 'dig for victory' conversion to agricultural in the 1940s – have been acquired.

Just south of Peterborough, the Cambridgeshire Wildlife Trust, English Nature and the Environment Agency are working to expand and link the remnant wetland sites of **Woodwalton and Holme Fen** National Nature Reserves.



(Andrew Hay, RSPB Images)
Habitat re-creation is bringing life back to Lakenheath Fen.

At **Lakenheath Fen** the RSPB have acquired almost 300 ha including former carrot fields and Botany Bay SSSI, one of the last remaining fragments of 17th century fen. Over 100 hectares of wetland including meres, reed-fringed channels and wet grassland have already been created.

Meanwhile, at **Needingworth** a pioneering collaboration between Hanson Aggregates, Cambridgeshire County Council and the RSPB is leading to major wetland restoration. The project involves the creation of the largest freshwater reedbed in the UK following sand and gravel extraction. This development will provide space for bitterns and other special wildlife and 32km of rights of way for walkers, cyclists and horse riders.

In the future, it is likely that further wetland creation will be possible to provide for washland storage to help flood alleviation of urban areas, and as compensation for freshwater wetland habitats lost due to coastal squeeze.

THE PROTECTION OF NATURE CONSERVATION SITES

3.5 A coherent network of designated sites remains vital to nature conservation. These sites safeguard the best of England's wildlife and geology, providing safe havens for our biological resources and demonstrating the geological processes that shaped the earth.

Sites of Special Scientific Interest (SSSIs)

3.6 SSSIs are at the heart of our system of designated conservation areas. The enactment of the Countryside and Rights of Way Act (CRoW Act) in 2000 provided new tools to enable the positive management of SSSIs to combat damage arising from neglect, and a statutory duty on public authorities to further the conservation of SSSIs in the exercise of their functions. English Nature is working with the Government, landowners and public bodies to achieve the Public Service Agreement (PSA) target of 95% of SSSIs in England being in favourable condition by 2010.



(Peter Wakely, English Nature)
In England, 56.5% of SSSIs are currently in favourable condition.

3.7 The discussion of indicator H2 in Chapter 2 shows the major factors that influence the condition of the 4,102 SSSIs in England. The influences are often the same as those that impact on biodiversity generally. So the programmes for the integration of biodiversity into other policy sectors set out in this Strategy will naturally contribute to the achievement of the PSA target on SSSI condition. The duty on public authorities under s28G of the CRoW Act 2000 will also contribute substantially to this goal. In addition, the improved tools now available to English

Nature will result in positive management regimes being put in place wherever they are needed.

International Sites

3.8 The EC Habitats Directive provides for the identification, designation and protection of the Natura 2000 network of Special Areas of Conservation (SACs), including Special Protection Areas (SPAs) designated under the EC Wild Birds Directive. The UK has virtually completed the identification of its proposed contribution to this European network. There are 220 candidate SACs and 79 SPAs in England (all also designated as SSSIs), which constitute 5.5% of the country and 72% of SSSI land. Work is now underway to enhance and extend the coverage of Natura 2000 to the marine environment within and beyond territorial waters, although there is some way to go before a coherent marine Natura 2000 network is established.

3.9 Natura 2000 represents the highest level of protection given to sites in the UK, in recognition of their importance at the European level. Inclusion of sites within the European network also enables collaboration with other European countries in monitoring the range and health of habitats and species of European importance to maintain and restore them to favourable condition. Member States are working with the European Commission to develop an approach to co-funding for the management of these sites. Other international designations are also important, especially the 66 Ramsar wetlands of international importance, the great majority of which are also Natura 2000 sites.

National Nature Reserves

3.10 SSSIs and internationally designated sites are complemented by a variety of other national and local designations. The 213 National Nature Reserves (NNRs) are areas of national importance that are managed by English Nature or bodies approved under s35 of the Wildlife and Countryside Act 1981. The specific purpose of NNRs is for the conservation of flora, fauna, physiographical and geological features and to provide special opportunities for study and research into flora and fauna and their habitats including geological or physiographic features.



(Paul Glendell, English Nature)
Inner Farne Islands, part of the network of National Nature Reserves.

Local Nature Reserves

3.11 Local Nature Reserves (LNRs) are designated by local authorities under s21 of the

National Parks and Access to the Countryside Act 1949. Over 660 LNRs have been declared in England, covering an area of over 30,700ha, and they range from heathlands and mudflats, to cemeteries and old railway cuttings. Many are used specifically for educational purposes, and are an important tool for biodiversity and geology conservation in both rural and urban areas.

Local Wildlife Sites

3.12 Selected for their nature conservation value, Local Wildlife Sites provide important wildlife refuges and stepping stones in the site network, linking different habitats and helping to maintain biodiversity. Local sites play a key role in Local Biodiversity Action Plans and in community strategies. Defra is currently considering responses to draft guidelines issued for

Spotlight National Nature Reserves

The majority of National Nature Reserves (NNRs) already have some form of public access but English Nature is investing in a programme to provide better access and information facilities on more than 30 Spotlight NNRs. These key sites offer the best opportunities for people to experience wildlife and the countryside, and are all identified on English Nature's website at www.english-nature.org.uk.

Nature-on-line

The 'Nature On-line' project is funded through the Treasury's Capital Modernisation Fund. By April 2004, English Nature will be able to make a wealth of information about the natural environment available on its website. Interactive maps will allow users to locate special sites for habitats, species and geology in any area of England. They will be encouraged to visit NNRs and Local Nature Reserves (LNRs) both on-line and in person. Web users will have access to information about SSSIs and engage in English Nature's policy-making through e-consultations and e-research. Educational material for teachers and pupils will be made available and communities will be able to apply for grants on-line.

Wildspace! Local Nature Reserves

LNRs not only support a rich and vibrant local biodiversity, they provide accessible natural green space that is essential to people's well being and their quality of life. Wildspace! is English Nature's grant scheme which aims to make LNRs accessible to everyone. By 2006, Wildspace! will have distributed more than £5 million, mostly from the New Opportunities Fund, reconnecting communities in deprived areas with the wildlife on their doorsteps and helping them to improve, care for and enjoy their local environment. Wildspace! is funding:

- the employment of Community Liaison Officers for community action in LNRs
- habitat management and other projects, such as initiatives with schools and better access for all on LNRs
- land purchase to establish new LNRs or extend existing ones

consultation in 2002. The guidelines will provide a standard for site identification, selection, management, protection and monitoring to ensure a consistent approach. The standards for selection are based primarily on nature conservation value, but also recognise the social and cultural importance of many local wildlife or geological sites to the local community as green space and for the educational opportunities that may exist.

The Global Strategy for Plant Conservation

The 6th Conference of the Parties of the CBD in April 2002 agreed a Global Strategy for Plant Conservation. It sets 16 quantifiable targets for:

- Understanding and documenting plant diversity
- Conserving plant diversity
- Using plant diversity sustainably
- Promoting education and awareness of plant diversity
- Building capacity for the conservation of plant diversity.

Many of the actions required under the Global Plant Strategy are already in train in this country, for example through the conservation of areas important for plant diversity found within SSSIs and recovery of threatened plants listed on the Species Action Plans. In addition, action arising from the current review of non-native species will be relevant to the Plant Strategy's delivery. England's Biodiversity Strategy gives new opportunities for considering the Plant Strategy's requirements, particularly in taking forward its cross-cutting themes, such as those relating to education and public understanding and to biodiversity and business. The reporting and review processes planned for HAPs and SAPs in 2005 will help determine progress towards meeting the Plant Strategy's targets (which are listed on www.biodiv.org/decisions).

KEY OUTCOMES

- Progress towards SSSI PSA target
- Progress towards establishment and favourable condition of Natura 2000 sites, including beyond territorial waters
- Issue and adoption of guidelines for Local Wildlife Sites

THE UK BIODIVERSITY ACTION PLAN

3.13 Under the UK Biodiversity Action Plan, there are 391 individual Species Action Plans (SAPs) and 45 Habitat Action Plans (HAPs) with specific actions and targets for priority species and habitats. Of these, 347 SAPs and 42 HAPs are relevant to England. Continued implementation of these plans through their steering groups is a major priority for this Strategy. The extent to which we progress towards the targets in the HAPs and SAPs will be the central ongoing measure of success.

3.14 The UK Biodiversity Group's Millennium Biodiversity Report (MBR) publication, *Sustaining the Variety of Life*¹⁰, recorded that, UK-wide, on the basis of reports submitted in 1999, 54% of the plans were already showing progress towards their targets. It also concluded, however, that there were significant information gaps for the majority of the plans and that widespread species were still more likely to be declining than those with restricted ranges. Encouragingly, the MBR provided good evidence that action plans work; species with longer established plans tended to be further on the road to recovery. It is expected that the next, limited, reporting round in 2002 (leading to a summary report in 2003) will show significant further moves towards the targets and point towards the likely progress that will be revealed in the full-scale reporting round and review planned for 2005.

¹⁰ Sustaining the Variety of Life: 5 years of the UK Biodiversity Action Plan. UKBG March 2001

¹¹ Government response to the UK Biodiversity Group Report, Sustaining the Variety of Life: 5 years of the UK Biodiversity Action Plan, Defra August 2002



(Peter Wakely, English Nature)
England has most of the UK's chalk rivers, which support species such as otter, salmon, and the white-clawed crayfish.

3.15 The MBR set out the aims and objectives for the proposed new UK Biodiversity Partnership and these have been accepted by the Government in its response to the Report, published on 27 August 2002.¹¹ These UK-level aims (at Appendix 10) establish the context for this Biodiversity Strategy for England. The HAP and SAP targets, which are the main measures of the UK BAP, are being disaggregated as far as possible by country so that they can inform the policies of the different country administrations and be used as measures of progress. The England Strategy will continue to be pursued in the context of the UK BAP.

3.16 The lead partners and agencies for the HAPs and SAPs are at the heart of our partnership. Partnerships at local and regional levels, working mainly through Local Biodiversity Action Plans, are also essential to delivering the UK BAP goals, the coverage of Local Biodiversity Action Plans being now virtually 100% in England. This Strategy aims to support and add value to the continuing work of all these partners by identifying the areas of policy that are common to many and need to be taken forward at strategic level, and how that will be achieved. This will enable the Action Plan Steering Groups and LBAP groups to concentrate on work programmes for actions that are more clearly within their capacity to deliver.

3.17 Section 74(3) of the Countryside and Rights of Way Act 2000 requires the Secretary of State, following consultation with English Nature, to publish a list of species and habitats which are of principal importance for the conservation of biodiversity. English Nature has advised the Secretary of State and the list is being published. The list of species and habitats are those which have already been identified as priorities under the UK BAP.

3.18 Although much work for species can be achieved through the protection and management of the habitats on which they depend, many species are so localised that targeted species specific recovery work is the only viable way of recovering their status. English Nature's Species Recovery Programme, in place since 1991, has played a key part in stimulating conservation work for threatened species. The work is carried out both by English Nature itself and voluntary sector partners. There are currently 379 species in the programme.



(Roger Key, English Nature)
The hazel pot beetle is one of the species to benefit from English Nature's Species Recovery Programme.

KEY OUTCOMES

- **Maintenance of lists of priority species and habitats as required by s74 of the Countryside and Rights of Way Act 2000, and associated Action Plans**
- **Progress reports on HAP and SAP implementation in 2003 and 2006**

Green shoots – shooting and biodiversity

In July 2000, the British Association for Shooting and Conservation (BASC) launched Green Shoots – a biodiversity action plan which recognises and builds on the shooting community's to biodiversity conservation. Green Shoots is helping biodiversity by:

- Developing the use of seed mixtures and promoting them to BASC members to help specific farmland birds
- Gamekeepers helping identify bat roost sites for the national bat monitoring programme and carrying out relevant habitat management
- Developing a co-ordinated mink control strategy. Gamekeepers will be trapping mink and carrying out habitat management to benefit water voles
- BASC and English Nature jointly funding a Project Officer on the Somerset Levels and Moors to improve biodiversity on shooting land
- In Cheshire, BASC surveyed its members and found that shooting had management influence over 690km², equivalent to 28% of the county. Over 6,200 biological records have been generated and shared with the LBAP. BASC members and other partners are working to increase biodiversity through 120 individual projects.

THE PROTECTION OF SPECIES AT RISK.

3.19 Part I of the Wildlife and Countryside Act 1981 contains the main legal provisions for the conservation of species at risk. This is further enhanced by the provisions in the Conservation (Natural Habitats &c) Regulations 1994 for European protected species. Strict provisions are laid down on the interference with and the taking of and trade in wild animals and plants. The 1981 Act and the Habitats Regulations continue to provide a firm and effective basis for the

protection of birds and other animals and plants. But some improvements to their operation are being pursued.



(Peter Wakely, English Nature)
The great crested newt is protected under UK and European Law.

3.20 Defra is in particular committed to reviewing the provisions in the 1981 Act to rationalise the identification and protection of rare and endangered species. A process of consultation will begin shortly. Defra is also consulting on changes to the current licensing regime in relation to European protected species on development sites.

3.21 The provisions in Part I of the Wildlife and Countryside Act 1981 and the Habitats Regulations are enforced primarily by the police service. Most forces now have at least one part-time Police Wildlife Liaison Officer (PWLO) who co-ordinates or investigates any reports of wildlife crimes. The Government supports the network of PWLOs through the Partnership for Action Against Wildlife Crime, a multi-agency body comprising representatives of all the statutory and voluntary bodies involved in wildlife law enforcement in the UK.

3.22 The Government administers the annual conference of PWLOs and has published a number of handbooks and other training and advice material. As well as increasing the penalties for many wildlife offences, the Countryside and Rights of Way Act 2000 introduced tougher enforcement powers for police officers, including in some circumstances, a power of arrest.

A successful prosecution for wildlife crime

The collecting of wildlife specimens such as birds' eggs, orchids and butterflies is still a serious threat to the survival of several protected species. For example, it is estimated that there are some 300 collectors actively pursuing the eggs of rare breeding birds in the United Kingdom. Penalties for such offences in England and Wales have recently been increased and now include the option of a custodial sentence for offences involving scheduled species. A recent case investigated by the Police and RSPB resulted in a six-month custodial sentence for an egg collector found in possession of over 400 eggs. These had been collected over a 20 year period and included those of roseate tern (a BAP priority species), little tern, chough, goshawk, peregrine, osprey, golden and white-tailed eagle, all of which are species afforded special protection by the Wildlife and Countryside Act.

THE REVIEW OF NON-NATIVE SPECIES POLICY

3.23 Next to habitat loss, the introduction of non-native species is a main cause of species extinction globally, through predation, hybridisation, competition and the introduction of disease. In the UK, predation by the introduced North American mink for example has been a major factor in the decline of water vole. The escape of invasive non-native aquatic plant species, such as the Australian swamp stonecrop, is causing great concern due to their impact on aquatic ecosystems. With increasing globalisation of trade and movement of people for business and pleasure, the risk to biodiversity from non-native species is increasing.

3.24 Defra is currently carrying out a fundamental review of UK policy on non-native species with the involvement of other Government Departments, industry, conservation bodies and the general public. The review is likely to make a number of detailed recommendations and is expected to

conclude shortly. The Government will consider its findings carefully, and may need to adjust both its policy approach and its research programme in the light of its conclusions and recommendations.

KEY OUTCOMES

- **Non-native species review report and appropriate implementation of recommendations**

REVIEW OF MARINE NATURE CONSERVATION

3.25 The Review of Marine Nature Conservation was established because of the need to do more to protect the UK's marine environment. The Review's Working Group is made up of a broad range of stakeholder interests from the commercial sector, conservation and recreation groups, and Government. It is charged with evaluating the success of previous marine nature conservation measures and putting forward proposals for improvement. The Working Group has considered various options, including an implementation framework for national marine conservation measures.

3.26 The Review's Interim Report¹² recommended a pilot scheme at regional sea scale to test some of the ideas developed during the course of the Review. The Irish Sea is the chosen location for the pilot, which began in May 2002 and is expected to last until the end of 2003. It will attempt to determine the limits of existing systems and look at ways of implementing an ecosystem-based approach to marine nature conservation. Most notably it will examine how we can integrate biodiversity into key marine sectors to make an effective contribution to sustainable development.

3.27 The Government has already indicated its support in Parliament for the principles of legislation that would allow for the identification and management of marine conservation sites of national importance. We will be looking to the Review of Marine Nature Conservation to make further recommendations, should additional legislation be necessary to safeguard the marine environment and secure sustainable management of key resources.

¹² Review of Marine Nature Conservation Interim Report March 2001 DETR

KEY OUTCOMES

- **Completion of Regional Seas Pilot Scheme in the Irish Sea and consideration and appropriate application of findings**
- **A coherent legal and administrative system for nature conservation in the marine environment**

INFORMATION FOR BIODIVERSITY

3.28 Our ability to make the best possible decisions on policies and programmes for biodiversity depends upon the accuracy and relevance of our information. This includes information about the current status and trends of species and habitats, the threats they face, the types of conservation activities that are underway, and the results of relevant scientific research.



(Joe Sutton, Plantlife)
England is blessed with a precious tradition of amateur natural history recording. Volunteers' enthusiasm needs to be harnessed and developed.

Biological Recording and Inventory

3.29 England has a large amount of survey information, with records for some species stretching back for more than a century, largely as a result of the enthusiasm of volunteer naturalists. These data help us understand the national status and distributions of many species. However, it is

only relatively recently that records have been collected at a sufficiently fine scale to help with on-the-ground management decisions. Better data are now being collected by professionals and volunteers involved in recording schemes across the country, often working to help assess local and national BAP targets. There are however recognised information gaps in terms of lower plants, marine and soil biodiversity, including their taxonomy.

3.30 The challenge is to sustain, develop, integrate and interpret this tremendous resource of information so that it is readily accessible to those who need it. Biodiversity information should be made widely available at a variety of geographical scales and for a multitude of uses, whether to inform the decisions of conservation professionals, planners and politicians, or to improve understanding and enjoyment of wildlife by members of the public. To achieve this, we wish to promote:

- More consistent approaches to data recording and maintenance so that locally collected information, especially information from habitat surveys, can be aggregated at different geographical levels
- Improved quality of biological records, in particular in recording less charismatic species and marine biodiversity. This is likely to require greater emphasis on the teaching of identification skills (taxonomy) and supporting volunteers through training
- Co-operative working by all relevant organisations, Government departments, agencies, voluntary organisations, business, academics and research institutes, in developing information systems to support decisions

3.31 Several initiatives are currently underway that will help us meet these challenges:

- The National Biodiversity Network (NBN) aims to develop standards and internet technology to enable sharing of biodiversity information between the data gatherers and users, at local and national levels. The NBN involves the relevant Government agencies, national societies and schemes, Local Record Centres, research institutes and museums and collections

- MAGIC (Multi-Agency Geographical Information for the Countryside) is a collaborative project between Government departments and agencies in England which has created an on-line geographical information system of designated sites (such as SSSIs and other land-based approaches like agri-environment schemes). The web-based mapping tool will enable biological information from the NBN to be viewed alongside designation and scheme boundaries
- The South West Pilot is a component project of the NBN looking at the availability of habitat surveys and remote sensing data from various sources, including Local Record Centres, to develop GIS datasets that describe the distribution of BAP priority habitats

Biodiversity Monitoring and Surveillance

3.32 As well as understanding the distribution and general status of biodiversity we also need to assess the effects of our policies and management and to understand how biodiversity is changing as a consequence. Information from such monitoring initiatives will be used to assess the achievement of biodiversity targets and produce the indicators proposed for measuring the success of this Strategy.

3.33 Designing monitoring schemes that are cost-effective, accurate and reliable is a considerable challenge. Information requirements vary widely, including for example:

- monitoring of rare species populations that occur on very few sites, as well as widespread species which are found throughout the country
- assessment of the condition of the national network of SSSIs, as well as the condition of habitats in the wider countryside
- reporting of the outcomes of actions within Action Plans
- assessment of the effectiveness of agri-environment schemes
- monitoring the effects on biodiversity of longer term environmental impacts such as global climate change

3.34 Monitoring and surveillance approaches are often most appropriately designed at a national (UK) level. National schemes are already in place for monitoring particular species groups including birds, butterflies, moths, bats and other terrestrial mammals, mostly relying on co-ordination of volunteer efforts. There are also a number of initiatives for habitat surveillance including Common Standards for SSSI assessment, River Habitat Surveys, Countryside Survey and agri-environment scheme monitoring. Further work is required to develop common approaches and improve co-ordination of habitat monitoring so that it is more comprehensive and robust including marine ecosystems.

3.35 Understanding the impacts on biodiversity of large-scale and long term environmental change is particularly challenging as it requires precise measurements of biodiversity and other environmental variables. The Environmental Change Network provides a national network of sites established for long term observations of environment change, including biodiversity. Ongoing research is reviewing the adequacy of existing monitoring for the early detection of climate change impacts.

3.36 The Biodiversity Action Reporting System (BARS), to be launched in 2003, is a web-based information system that will establish a common format for planning, monitoring and reporting BAP delivery at national and local level and for all those, including businesses, who have their own Biodiversity Action Plans.

Biodiversity Research

3.34 Correct use and interpretation of biodiversity information requires a good scientific understanding of the underlying ecosystem dynamics and the impacts of human activities. Better links are needed between the conservation and research communities to ensure that conservation decisions are based on good science and that science and science programmes are relevant to policy needs. The recently established UK Biodiversity Research Platform will enable improved exchange of information and co-ordination of research.

KEY OUTCOMES

- **The National Biodiversity Network established as a working tool to support biodiversity action and policy development**
- **Improved co-ordination of national and local surveillance of habitats**
- **Comprehensive monitoring systems in place to enable assessment of the Strategy, including development and implementation of the Biodiversity Action Reporting System and the early detection of climate change impacts**

New Atlas of British and Irish Flora

The *New Atlas of British and Irish Flora* contains maps and accompanying text for over 3300 flowering plants and ferns in Great Britain, Ireland, the Isle of Man, and the Channel Islands. It presents a comprehensive, up-to-date summary of the range of British and Irish plant species, replacing the Atlas of the British Flora (1962) and demonstrating the large changes in the range and frequency of many species since the previous Atlas.

All native species and all the commoner hybrids and introduced species are covered, together with a wide range of sub species. The 910-page volume and accompanying CD-ROM has been produced from nine million records. The New Atlas contains 750 species not listed in the previous volume.

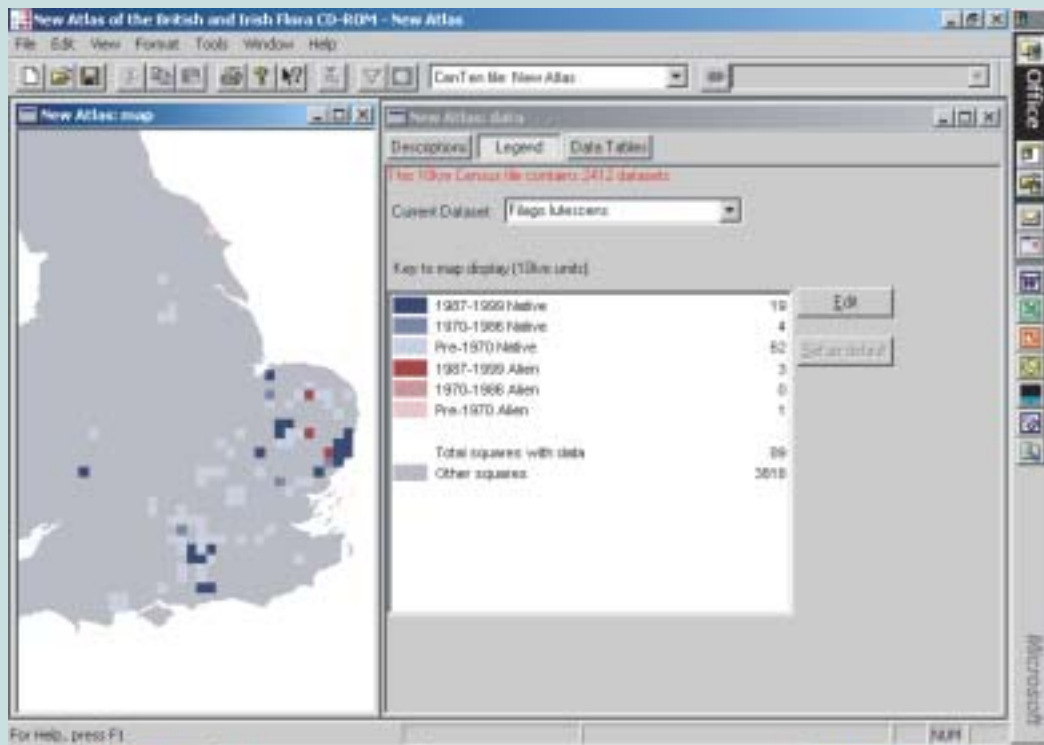
Such a tremendous resource was only possible through partnership. Volunteers collected the vast majority of the 5½ million records between 1996 and 1999 with some recorders spending up to 100 hours in a single 10-km square. The principal funder in England was Defra and the collection

and collation of the records was the responsibility of BSBI and CEH. English Nature also provided support for the project.

The New Atlas is a comprehensive and authoritative reference. It complements the more detailed information that is available on the rare and scarce plant species and other information sources such as the Countryside Survey and data being made available by National Biodiversity Network and MAGIC.

Defra is working with the National Biodiversity Network Trust and the BSBI to facilitate rapid access to the data collected by volunteer recorders over the Internet using the NBN Gateway.

With the CD-ROM that accompanies the New Atlas, users can view and print distribution maps, captions and associated data tables, as well as manipulate the data to produce additional maps such as co-incidence maps, and add overlays containing environmental information.



Distribution of Red-tipped Cudweed *Filago lutescens*

How to manage non-native invasive species

The impact of non-native invasive species is one of the most critical issues for biodiversity conservation today. It was a major theme of the 2002 conference of the parties of the Convention on Biological Diversity. Many of the sectors covered by this strategy identify alien species as a particular problem to be addressed in their work programmes. The threat from non-native invasive species is identified in 8% of species action plans. Defra is carrying out a fundamental review of policy on non-native species with the involvement of other Government Departments, industry, conservation bodies and the general public. The review process will:

- *Evaluate the effectiveness of current statutory or non-statutory procedures for dealing with the introduction and establishment of non-native species and identify examples of current best practice within the UK and abroad*
- *Identify the main vectors for the introduction and spread of non-native species*
- *Put forward practical and proportionate costed proposals for improving measures to limit the ecological and economic impact of non-native species in Great Britain and recommend measures to limit the impact of the introduction of native species beyond their natural range. These could include proposals for statutory or non-statutory measures in areas of research and monitoring, trade, and control of non-native species*
- *Identify appropriate organisations to take forward any measures recommended*

The CBD Conference of the parties agreed a series of Guiding Principles for States¹³ to take into account in their non-native species policies, and the review has taken these fully into account. Because of the extremely detailed nature of the work, the group set up three sub-groups to look at the following specific areas:

- *Prevention*
- *Monitoring and risk assessment*
- *Remedy and control*

The review is likely to make a number of detailed recommendations. It has already recognised that there is currently a wide range of organisations that have inspection, enforcement and control activities in relation to non-native species. These are mixed up across species groups, limited to individual sectors addressing specific issues. The overriding view is that this sectoral approach has not worked; some central co-ordination of policy would bring together all of the different sectors, make the most of the regimes in place and ensure a more consistent and coherent approach. Another crucial factor will be increasing public awareness and understanding of the issue. This will assist in almost every area, from prevention, through monitoring and alertness to the presence of non-natives, to acceptability of any control programmes put in place.

The review is expected to conclude shortly. Defra will consider its findings carefully, and may need to adjust both its policy approach and its research programme in the light of its conclusions and recommendations. Of course, some non-native species have considerable benefits to society, for example the trade in agricultural, horticultural and forestry crops, the pet industry and other sectors. Many of our best-loved plants, such as arable wild flowers, were introduced to Britain before 1500 and are now subject to recovery plans. Non-native species have also contributed positively to the biodiversity of urban and suburban areas; many people's daily contact with the natural world is often with such species. In addition, in an increasingly multi-cultural country, the language around and responses to 'aliens' and 'non-natives' needs to be used with sensitivity. The recommendations of the review must be proportionate, and address the threats posed without unnecessarily hindering legitimate activities.

¹³ CBD Decision V1/23 Alien species that threaten ecosystems, habitats or species

Sustainable management by sector

The quality of England's biodiversity is dependent not just on nature conservation programmes, but on a whole range of other policies and measures. The influence, for example, of agricultural practices, woodland, water and marine management and urbanisation on biodiversity are pervasive. This means we must look carefully at these other programmes themselves, and the policies that drive them, to see how they can be progressed in ways that are consistent with our biodiversity conservation objectives. This is an essential part of our overall aim to create a socially, economically and environmentally sustainable future.

Thus this part of the Strategy seeks to integrate concern for biodiversity into the key economic sectors that most affect it. In Chapters 4-8 we look at biodiversity in agriculture, woodland and forestry, water and wetlands, our towns and cities and on the coasts and seas and set out objectives and programmes for delivery in each.

Agriculture

VISION

4.1 An economically viable agriculture industry in which farmers and growers maximise, and are valued for, their contribution to the conservation and enhancement of the biodiversity associated with farmed and semi-natural habitats.

Our aims are:

- To improve the quantity and quality of biodiversity on agricultural land in England
- To reduce the negative effects, and enhance the positive effects, of agriculture on the wider environment
- To promote the conservation and enhancement of biodiversity as part of a sustainable food and farming strategy in England
- To promote a whole farm approach by land managers to the conservation of species and habitats in England

The UK BAP has Action Plans for:

82 priority species – including the skylark, the tower mustard and the adonis blue butterfly; and

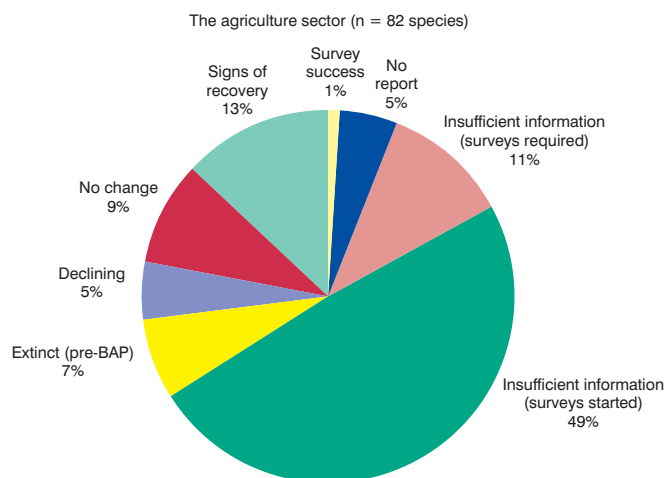
9 priority habitats, including cereal field margins, ancient species-rich hedgerows and upland hay meadows

that are associated with farming or agriculture in England.

THE NATURE OF THE CHALLENGE

4.2 Today's countryside has been shaped and maintained largely by farming and most semi-natural areas have historically been managed with agriculture (primarily food production) as a prime motive. Agriculture is a key determinant – and is the most significant potential deliverer – of biodiversity in England. Over 70% of the English land surface is farmed. But the influence of

Figure 1: Progress with Biodiversity Action Plans



Source: English Nature, JNCC

agriculture on biodiversity goes far beyond farmed land itself, as the majority of semi-natural habitats are linked to the surrounding agricultural land, and may be fragmented or isolated within the larger agricultural landscape. We must address the impact of agriculture on biodiversity at a landscape scale, and ensure that an economically viable industry and wildlife can both enjoy a sustainable future.



(Peter Wakely, English Nature)
Unimproved hay meadows underwent a significant decline in the 20th Century; associated species, like corncrake, also declined as the management of their habitat changed.

4.3 The current depression in agriculture and, in particular, the effects of currency movements on world prices and price support, weakens UK farmers' and land managers' abilities to make their contribution to our environmental goals. The Government needs to provide, and increase use of, tools to encourage and enable farmers and land managers to meet the demands of the market place in a sustainable manner.

4.4 Agriculture policy in the UK operates within a number of binding international agreements. In particular, individuals' decisions on land management are currently constrained by the

European Union's Common Agricultural Policy (CAP) and environmental legislation, World Trade Organisation (WTO) rules and a multitude of other international policies and agreements.

4.5 The main concerns for biodiversity associated with agriculture are:

- Deterioration in the quality of many semi-natural habitats as former types of management were abandoned or replaced with more intensive systems
- Loss, fragmentation and isolation of semi-natural habitats through agricultural intensification or development
- Loss of important farmland features such as hedges, ponds, ancient trees and copses
- Deterioration in the biodiversity value of agriculturally productive land as production methods have changed
- Damage to soil, water and other ecosystems by agricultural pollution, compaction, erosion, pesticides and fertilisers; and agriculture's contribution to climate change



(Jane Smart, Plantlife)
Changes in agriculture have led to a dramatic reduction in the distribution of the Cornflower, which formerly occurred on arable land throughout England.

Enhancing the biodiversity of grouse moors

Until the 1950's High Moor near Macclesfield had been a managed moorland with annual grouse shoots. Increasing sheep numbers then resulted in a severe loss of heather to be replaced by dominant stands of purple moor grass. This was unpalatable to sheep and the result was that the value of the moor for grouse, wildlife and sheep had suffered a huge decline.

The owner wanted High Moor restored to its former glory, with the aim of producing a harvestable surplus of game from a thriving heather moorland. During the 1980's he experimented with grass spraying and the heather regeneration was so good that, in 1991, he joined the Countryside Stewardship Scheme to restore the whole moor.

Sheep were encroaching, so over the first 4 years 2 miles of stone wall were rebuilt. From 1994 spraying and topping of the grass began and heather started to reappear. This was supplemented with some scraping and seed enhancement. Heather coverage is now approaching 80% and burning will start in autumn 2002 to create more structural diversity. Sheep grazing will also be re-introduced in 3 or 4 years to help maintain the intricate mosaic favoured by grouse.

An adjacent overgrazed moorland block of 400 acres within the National Park has been purchased and similar management will be undertaken starting with the restoration of 500m of wall. It was decided to introduce 20 pairs of red grouse in December 2000. The females were radio-tracked which showed that 7 hens stayed at High Moor with 4 breeding the following season. Black grouse were also released in autumn 2001. With the presence of species including bilberry, skylark and now curlew there is no doubt that this project is producing excellent results for biodiversity.

WHAT WE WANT TO SEE

4.6 This Strategy has developed the programme of action at Appendix 1 which aims to achieve:

- The retention and good condition of semi-natural habitats within farming systems
- The promotion and reward of appropriate land management techniques that benefit semi-natural habitats, either directly or indirectly
- Preservation, management, restoration, creation and joining up of matrices of semi-natural habitats in a way that will allow wildlife to thrive
- A halt to the losses of farmland features of value to wildlife and the positive management of all such features including habitat re-creation



(Peter Wakely, English Nature)

The results of the Countryside Survey 2000 suggest that the loss of hedgerows that had continued into the early 1990s, was being reversed during the latter half of the decade as agri-environment incentives started to take effect.

- A sustained increase in the biodiversity value of agriculturally productive land
- The achievement of best environmental practice to limit the incidental impact of agricultural practices on wider biodiversity across all of England's farmland

OUR PROGRAMME

4.7 The Government's overall programme of action for the agriculture sector contains various elements that will benefit biodiversity. Not all of them are new, but some deserve special mention here as evidence of our determination to quickly halt and reverse the damage done to biodiversity by past policies.

- **The report of the independent Policy Commission on the Future of Farming and Food in January 2002¹⁴ recommended providing incentives for the production of environmental public goods, including biodiversity, which would otherwise be under-provided by the market.** The Commission recommended that public payments should be shifted towards reconnecting farming with the countryside. Reform of the CAP was seen by the Policy Commission as a way of providing funds for environmental and social public goods through rural development programmes. Through its discussion document *Sustainable Food and Farming: Working Together*¹⁵, the Government has invited stakeholders to submit their views on how to take forward issues identified in the Policy Commission's report. Stakeholder responses, together with the recommendations of the Commission, are making a major contribution to the Government's new food and farming strategy.
- **The Government is committed to delivering a new Strategy for Sustainable Food and Farming in England, to be published shortly.** In addition to the recommendations made in the report of the Policy Commission, the strategy will be informed by wide ranging engagement with key players. The 2002 Spending Review settlement provides the resources to deliver the Government's commitment to more sustainable, competitive and diverse food and farming industries which will shift the balance more in favour of biodiversity.

4.8 **The Agenda 2000 mid term review offers a tremendous opportunity to secure further change in the CAP to achieve the shifts in favour of the environment that we want.** In the EU, the CAP, costing over €40bn per year,

continues to send outdated signals to land managers with over €10bn being spent on market price support and over €25bn on direct payments. The European Commission's proposals for **CAP reform**, published in July 2002, mark an important next step in the future of EU Agriculture policy. The Government fully supports the European Commission's vision of a CAP that delivers economic viability, environmental improvement and rural development. But while the document reflects the Government's thinking on a number of topics it falls short of our expectations in others.

4.9 The UK as a whole has long called for a further shift in support from production-linked subsidies to wider **agri-environment** and **rural development** measures, and the European Commission's proposals make a significant step in that direction. The proposal to decouple payments from production is a brave and radical move, which would remove some of the perverse incentives to over-production in the present system and could provide opportunities to "green" payments under pillar 1 of the CAP. But in several key areas we do not think that the Commission's document goes far enough. There is no proposal for the progressive annual reduction in subsidies that is required to deliver budgetary savings, and put the CAP on a sustainable footing as we take forward our environmental and rural development objectives. In addition, the proposal to limit total subsidies payable to an individual farmer is framed in a way that will inhibit restructuring and discourage improvements in efficiency.

4.10 **The review of agri-environment schemes in England, concentrating on the Countryside Stewardship Scheme (CSS) and Environmentally Sensitive Areas (ESAs)** will feed into the forthcoming review of the England Rural Development Programme. This will shape the future of rural development policy in this country. Agri-environment schemes have made a major contribution to the conservation and enhancement of biodiversity on farmed land, through for example:

- Creation and good management of BAP priority habitats such as hedgerows and cereal field margins

¹⁴ 'Farming and Food a sustainable future': Policy Commission on the Future of Farming and Food January 2002

¹⁵ Defra March 2002

- Restoration of habitats such as lowland heath and species-rich grassland in predominantly arable areas
- Special projects for BAP species like the curlew and stone curlew
- Encouraging the adoption of beneficial grazing and cutting regimes
- Encouraging farmers to leave wildflower-rich stubbles and fallow arable land

The review will develop a revised structure for agri-environment schemes that will enable them to contribute effectively to solving current and future environmental problems.



(Chris Gomersall, RSPB Images)
England supports the entire UK population of stone curlews, this species has benefited from a special project under the Countryside Stewardship Scheme.

4.11 A key Policy Commission recommendation, central to the new food and farming strategy, is the development of a new entry level agri-environment scheme. Pilots for the new scheme will be rolled out from 2003 onwards, and it will then be made available to as many farms as possible in England. The design of the entry level scheme is still evolving, but it is likely to provide rewards to farmers for the continuing stewardship of their existing assets, be available to all farmers without the need to compete to enter the scheme, and encourage all farmers to make environmental enhancements. The scheme aims to provide a means of scaling up agri-environment activity to make a real difference to the way most land is managed, and

to contribute to solving a number of widespread environmental problems. Possible measures to benefit biodiversity could include:

- Grass field margins which benefit small mammals, a range of invertebrates and the birds that feed on them
- Conservation headlands – areas planted with a crop but left unsprayed, which greatly benefit farmland bird species and rare arable plants
- Buffer strips along watercourses, which not only benefit wildlife but also can help to reduce the flow of eroded soil into watercourses



(Chris Gomersall, RSPB Images)
The Policy Commission on Food and Farming highlighted the need for sustainable farming that takes account of biodiversity.

4.12 The Organics Action Plan, which aims to help the home-grown organic food and farming sector develop sustainably, is crucial. Drawn up following recommendations of the Policy Commission report, the Plan looks at the organic food chain as a whole and seeks to address the key issues that will assist the development of the sector. An enhanced Organic Farming Scheme,

new research funding, and an undertaking by the major retailers to work with producers to increase the UK organic market are key components of the Plan. Organic farming can make a major contribution to farmland biodiversity through:

- Increased organic content in soils
- Increased invertebrate numbers and densities
- More arable wildflowers
- Increased crop and field diversity
- Use of important habitats such as field margins and boundaries (hedges and trees) in boundary management and weed and pest control

4.13 In addition to working to reform the system which provides financial incentives to farmers for environmental enhancement, the Government is also implementing a range of **regulatory measures** to further the control of pollution from agriculture and spearhead a drive to improve the quality of water courses throughout England. The measures will contribute to the protection of fish, plants and other wildlife in streams, rivers, lakes and coastal waters. The EC Water Framework Directive establishes the strategic framework for managing the water environment. Its implementation will put in place a common approach to protecting and setting environmental objectives for all ground and surface waters.

4.14 The Government is developing an overall **strategy to tackle diffuse water pollution** by agriculture in England, which will implement cost-effective policy measures to reduce pollution from agriculture to levels that meet existing commitments and encourage sustainable farm practices. 58% of the country has now been designated as Nitrate Vulnerable Zones. This extension of the designated area will help to prevent and reverse the impacts of eutrophication which are damaging to biodiversity. Better control of manure spreading will cut microbiological inputs to water, while more efficient use of fertilisers and manure will provide some offsetting economic benefits for farmers.

4.15 We know that to deliver this programme, we will need to work in partnership with a range of organisations and individuals, across the private, public and NGO sectors. We will value innovative approaches and welcome new ideas.

White and Wild – Milk on the Wildside!

White and Wild is a brand-new milk product for the Wildlife Trusts which aims to use the consumer market to give dairy farmers a significant financial incentive to conserve and enhance biodiversity on their farms. The milk sells for a small premium – for each litre bought 3p goes to the farmer and 2p to the Trusts. The farmer undertakes to keep to environmental standards set by the Wildlife Trusts and FWAG. This will lead to at least 10% of the farm being managed for wildlife and a whole farm BAP being implemented on the farm. White and Wild is currently in Sainsbury's and will shortly be available in over 500 stores across the UK. The supermarkets have enthusiastically welcomed this innovative approach in the dairy sector.



CONSTRAINTS AND UNCERTAINTIES

4.16 There are a number of risks and uncertainties that will affect progress over the next 5 years. The outcomes of future Government spending reviews and the financial limitations of the pillar 2 of the CAP will govern the resources that will be available. Because this area is so substantially influenced by international agriculture, environment and trade policy, the success of the policies set out in this strategy will depend on the UK's negotiating success. Crucially, continuing poor returns from farming will affect farmers' own ability to contribute financially to preserving and enhancing biodiversity. Uncertainties about the impact of future technological change (including the introduction of novel crops and biotechnology) and the effects on agriculture of climate change (e.g. the response to increased flood risk, water demand and shifting patterns of land use) will have impacts on biodiversity as yet unknown.

TARGETS, MILESTONES AND INDICATORS

4.17 This strategy will contribute to Defra's Public Service Agreement target to:

- Reverse the long-term decline in the number of farmland birds by 2020, as measured annually against underlying trends. This will be part of the headline indicator (H1)

4.18 But new objectives are needed to measure progress towards our vision. We want:

- An increasing proportion of total farmed land under positive environmental management
- A situation where most farmers participate in at least the entry level aspects of English agri-environmental schemes
- The majority of farmers to adopt a whole-farm approach which fully integrates biodiversity as a consideration in the management of their land

The following indicators for this sector will be adopted:

- Area of land under agri-environment scheme agreement in England (H4)
- Progress towards farmland HAP/SAP targets in England (A1)
- Condition of farmland SSSIs (A2)
- Extent and condition of farmland habitat features (e.g. hedgerows, individual trees, ponds) (A3)
- Trends in plant diversity in fields and field margins (A4)
- Number of farms with LEAF audit; number of farms achieving Assured Farm Standards (A5)

Water and wetlands

VISION

5.1 Healthy and biologically diverse rivers, lakes and wetlands in a landscape managed for the sustainable use of water. This means a holistic approach to land and water management, with active support from local communities, recognising and benefiting from the social, economic and environmental gains.

5.2 Our aims are:

- To promote policies that tackle the root cause of damage to water and wetlands, harness natural processes rather than resist them, and thus reverse historical habitat degradation and fragmentation and restore the functioning and quality of wetland ecosystems.
- To achieve a whole catchment approach to land use and water management, focusing efforts

where environmental risks are greatest and actions are most likely to result in significant benefits

- To promote the principle, established in the Water Framework Directive¹⁶, that the ecological health of the water environment is a key test of its sustainable management

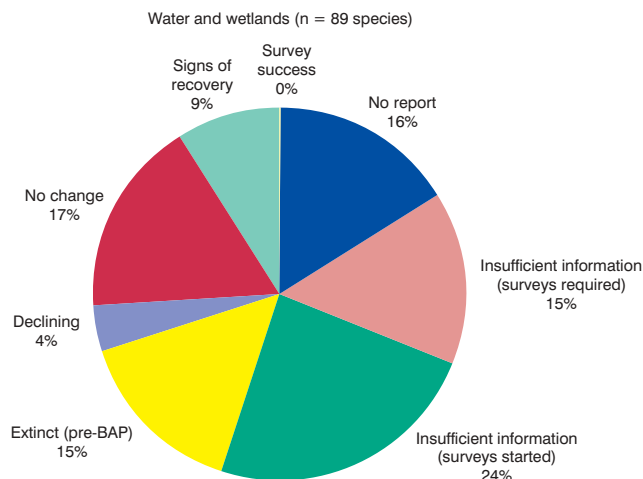
The UK BAP has Action Plans for:

89 priority species – including the water vole, the allis shad and the southern damselfly; and

9 priority habitats – including chalk rivers, lowland raised bogs and reedbeds,

that are associated with the fresh waters and wetlands in England.

Figure 2: Progress with Biodiversity Action Plans



¹⁶ EC Water Framework Directive (2000/60/EC)

THE NATURE OF THE CHALLENGE

5.3 Clean, fresh water is a fundamental human need. Water also provides an essential raw material for agriculture, commerce and industry. Consequently water and wetland features have determined where people have settled, and how communities and economies have grown.

5.4 As the demand for water and land has increased with population growth and economic development, so have pressures on the water and wetland environment. For example, we have deployed technical and engineering solutions to keep land and property dry, and to maintain and improve the quality and quantity of drinking water supplies. As a consequence, reservoirs, land drainage, river embankment and canalisation have radically re-shaped our landscape.

5.5 Until recently, the ‘wise use’ of water, a principle which acknowledges the central importance of wetland ecosystems, has been marginal to mainstream water management. As a result:

- Water quality, flood defence and water abstraction problems have often been treated separately, with local solutions delivered on a piecemeal basis. This has hindered the development of catchment management using the natural functioning of water and wetland habitats at a landscape scale
- Nutrient, sediment and pesticide inputs to rivers and lakes, derived from both point and diffuse sources have caused deterioration in water quality and damage to aquatic wildlife
- Land drainage, to maximise agricultural production, and flood defence, to protect expanding urban areas, have changed the natural dynamics and behaviour of river systems, which have contributed to the degradation, fragmentation and loss of aquatic and wetland habitats
- Water abstraction in some areas has exceeded the natural ability of ground and surface waters to be replenished, with potential impacts for several freshwater habitats, particularly in drought years

The state of water and wetlands in England

Rivers

- 94% of rivers of good or fair quality in 2000 (up from 86% in 1990)
- despite recent improvements 55% of rivers still have high phosphate levels and 32% have high nitrate levels, which may lead to eutrophication problems
- 85% of lowland rivers have been physically altered, with channels often disconnected from their floodplain
- Wild salmon have declined in southern chalk rivers but increased in the post- industrial north. (The River Tyne is now the best salmon river in England)

Lakes

- 46% of English lake SSSIs are affected by nutrient enrichment

Wetlands

- There are approximately 200,000ha of grazing marsh, 5,000ha of reedbed and 1500ha of floodplain meadow, representing a small fragment of the wetland that has been lost
- Undrained fenland has reduced from 3,380km² in the 1700s to 10km² in 1984
- Undisturbed raised bog has reduced by 94% to 200ha
- 500 SSSIs on floodplains need appropriate water level management

Ponds

Following dramatic declines in 1960-80 the number of lowland ponds in England has stabilised at around 200,000 but half are badly affected by nutrient enrichment



(Mike Hammett, English Nature)

The white-clawed crayfish is dependent on good water quality and is also under threat from introduced North American crayfish.

5.6 Past reliance on fixing local symptoms rather than tackling the root causes has proved expensive, not only in terms of the loss of biodiversity, but also because the recurrent nature of the problems has often proved costly to remedy. For example, the annual cost of sediment-related problems in urban drainage systems is estimated to be about £50m, whilst dealing with nutrient enrichment (eutrophication) problems in water costs in the order of £100m a year.

5.7 The long-term social, economic and environmental benefits we could gain by developing landscape-scale solutions for the wise use of water are now more widely recognised and need to be encouraged further. This strategy aims to help in the process, making the link between environmental management and the social and economic and biodiversity gains we can expect.

WHAT WE WANT TO SEE AND HOW WE WILL ACHIEVE IT

5.8 The main statutory and policy drivers for improving biodiversity through effective pollution control, sustainable abstraction and water level management are already in place. Increasingly, implementing the EC Water Framework Directive will bring clear benefits for aquatic and wetland wildlife.

5.9 There has already been considerable progress. For example companies' programmes for 2000-2005 allow for £5bn of investments in quality improvements in sewerage. River water quality is now the best since the industrial revolution. Water abstraction problems are also being resolved in some wetland SSSIs. The biodiversity targets set for flood defence operating authorities that are applicable to all flood defence capital schemes have resulted in net gains of more than 150ha in both freshwater habitats, such as chalk rivers, and coastal and intertidal habitats, such as saltmarsh. Progress has also been made in securing our remaining peatland resource from further destruction. A number of river and wetland restoration projects involving voluntary conservation bodies, government agencies and water companies have been started in the last ten years.

Wise use of floodplains: the Parrett catchment

The EU LIFE-Environment programme has part-funded a major project to create new ways of achieving sustainable water management for the benefit of all stakeholders in the River Parrett catchment – the largest river system in Somerset – which has suffered from severe flooding in the recent past. The Somerset Levels and Moors is the most important lowland wet grassland in England and 10% of its 64,000ha is designated as a Special Protection Area (SPA).

The Environment Agency, English Nature, the RSPB and Somerset County Council have worked with the Levels and Moors Partnership (LAMP), representing local community interests, and have established a statement of common ground. The partnership aims to encourage integrated catchment management and the Water Level Management Action Plan for the day-to-day management of water in the Levels and Moors.

Over the life of the project it will:

- **Initiate a debate among stakeholders on the future of farming in relation to environmental change**
- **Analyse the practicalities and economics of creating washlands on the floodplain and mid-catchments**
- **Produce sustainability indicators to monitor the effectiveness of changes in water and land management**
- **Examine the economics of achieving favourable condition of the SPA**
- **Produce the philosophy and design for an Integrated Catchment Management Plan for the Parrett system**
- **Design a 'catchment-care' programme to maintain stakeholders' involvement in the management of their catchment**

5.10 We need to build on this momentum and, using knowledge from effective monitoring and assessment, to secure cost-effective investment of financial and management effort that will benefit biodiversity and people. Landscape-scale countryside management will be necessary to tackle diffuse agricultural pollution which is harming aquatic wildlife, and to reverse the fragmentation of river corridors and the past loss of wetlands.



(Peter Wakely, English Nature)
Diffuse pollution from agriculture is an important issue for the wetland environment.

Protecting peat bogs for posterity

Raised peat bogs are amongst the most valuable habitats for biodiversity, supporting species found rarely elsewhere, such as sphagnum mosses and cotton grass. They also support invertebrates and offer feeding areas for birds such as the nightjar. The greater part of England's raised bog resource has been drained and taken into agriculture, forestry, peat mining or landfill. It is estimated that 94% of that which existed in the 1900s has been lost.

In recognition of the importance of the habitat, in March 2002 English Nature and Defra bought out the rights for peat extraction at three of the largest worked bog sites in England from Scotts Ltd at a cost of £17.3m. Peat cutting at Wedholme

Flow, Cumbria, and Thorne Moor, South Yorkshire, has now ceased. There will also be a phased withdrawal from a third site at Hatfield, with harvesting stopping there altogether by autumn 2004. This action protects the three sites that jointly cover over 4000 hectares.

As part of the agreement, Scotts Ltd has committed itself to secure employment through the processing of peat alternatives, and to work with English Nature to restore the peat-forming capabilities of the sites. This will guarantee protection for three Natura 2000 sites and prevent any further damage caused by large scale commercial peat extraction, whilst at the same time safeguarding local employment.

5.11 Given the landscape-scale influence of land management on the quality of water and wetland habitats, changes in agricultural practice will hold the key to much of the improvement sought for water and wetland habitats. The Strategy's work programme for agriculture, for example through implementation of the the Nitrates Directive and the Government's Sustainable Food and Farming Strategy, should help to secure better environmental conditions for aquatic and wetland wildlife.

5.12 Above all, however, we need to recognise that healthy, fully-functioning ecosystems are a pre-requisite for truly sustainable water management and that this can only be achieved through further development of a catchment-scale approach. The European Commission's Biodiversity Action Plan for Natural Resources¹⁷ identifies the EC Water Framework Directive (WFD) as the main new means by which this will be put into practice at community level. The WFD will increasingly set the context for the other policy initiatives outlined in our programme of action for water and wetlands.

The programme of action at Appendix 2 sets out what we are doing now and what we need to do in the future to tackle these concerns.

5.13 In particular:

- Biodiversity will be an important element of the Government's Water Policy Document to be published shortly
- We will encourage links between catchment-scale biodiversity targets and the River Basin Management Plans prepared by the Environment Agency for the Water Framework Directive through the development of pilot sub-plans linked with relevant Local Biodiversity Action Plans
- We will take full account of the water quantity requirements of wetland SSSIs and species identified to meet BAP targets at a catchment level, and consider them in abstraction and water level management planning decisions
- We will identify policy instruments to address diffuse pollution from agriculture, considering

the role of regulation, economic instruments and advice with the aim of reducing nutrient run-off, soil erosion and flood risk, helping to increase biodiversity interest

- We will develop and implement biological based water quality objectives to help protect priority species and habitats and also include them as an element of condition assessment for water-dependent SSSIs
- We will promote wetland conservation and enhancement in policies, plans and projects for water level, flood management and waterways regeneration activities, looking in particular for opportunities to create wetland habitats as part of catchment-scale land management solutions that harness natural processes
- We will, through provisions in the Water Bill, seek improvements in regulating abstraction which will encourage sustainable water resources management
- We will ensure that biodiversity is properly taken into account as a driver in Ofwat's forthcoming review of water prices for 2005-2010
- We will continue to tackle, through the Environment Agency's review of consents, the pollution, harmful abstraction and other water management problems affecting Natura 2000 sites
- We will promote pond conservation measures through agri-environment schemes and recognition of Local Biodiversity Action Plans in the land-use planning system through the revised PPG9
- We will take account of the findings of the Government's review of non-native species in respect of those that threaten wetland ecosystems, considering awareness campaigns and a programme of prevention, containment and management as appropriate
- We will continue to promote and encourage the use of peat alternatives to safeguard the peatland resource

¹⁷ Commission document COM(2001) 162 final Volume II/V

CONSTRAINTS AND UNCERTAINTIES

5.14 A major concern is that current problems may well intensify as a result of climate change. Uncertainties about temperature regimes and local rainfall patterns could exacerbate potential competition for water, whilst more intense storm events will inevitably increase soil erosion, nutrient and pesticide run-off, and heighten public anxiety about floods. Chalk streams were identified in the MONARCH study as particularly vulnerable to climate change.

5.15 There are also still considerable uncertainties over the precise ecological requirements of several species and habitats. Further scientific research is needed to determine the most effective risk-based approach to tackling this uncertainty, thereby allowing us to be more confident about setting achievable cost-effective targets and tracking progress towards them. The threat to native wildlife posed by invasive introduced species could be a significant future problem which, for some species, may be compounded by climate change.

TARGETS, MILESTONES AND INDICATORS

5.16 The biodiversity indicators that we will use for this sector are:

- Biological quality of rivers in England (H7)
- Progress towards water and wetland HAP/SAP targets in England (including the contribution of high level flood management targets) (W1)
- Condition of water and wetland SSSIs in England (W2)
- Populations of water and wetland birds in England (W3)
- Trends in riverine plant diversity in England (W4)
- Nutrient levels in rivers and lakes (W5)
- Number of rivers meeting conservation targets for salmon (W6)

Woodland and forestry

VISION

6.1 Woodland and forests, managed and created to enhance both woodland and non-woodland species and habitats, that at the same time provide sustainable goods, environmental services and recreational benefits enhancing people's quality of life.

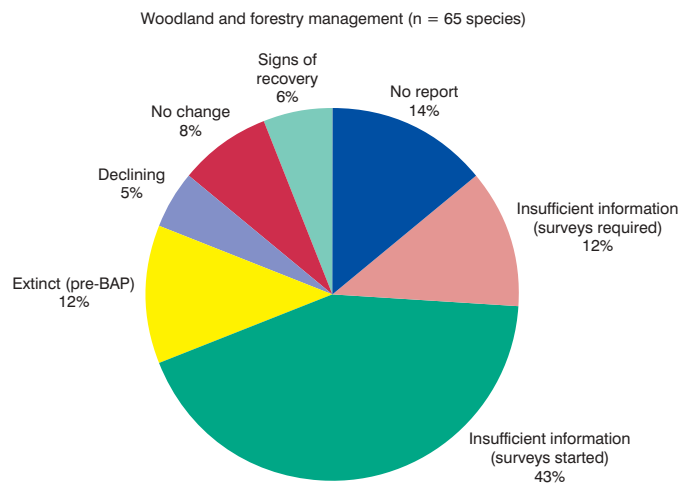


(Mike Hammett, English Nature)
England supports most of the UK population of the dormouse, a species of coppice woodland.

Our aims are:

- To conserve the biodiversity of all woodland types, particularly ancient semi-natural woodland, veteran trees and wood pasture
- To protect biodiversity-rich woodland from external threats from industry and surrounding land uses to ensure its role is fully recognised in development proposals
- To ensure that forestry and woodland management and creation enhances non-woodland habitats and species, and contributes to the conservation of biodiversity at a wider, landscape scale
- To fulfil the potential of forestry as one of the best examples of sustainable development and to increase woodland's role in enhancing people's quality of life

Figure 3: Progress with Biodiversity Action Plans



The UK BAP has Action Plans for the following habitats and species associated with woodland and forests in England:

65 priority species associated with woodland – including the high brown fritillary butterfly, the red squirrel and the bullfinch.

5 priority habitats– upland oakwoods, upland mixed ashwoods, wet woodlands, lowland beech and yew woodland, wood pasture and parkland.

A new HAP for lowland mixed deciduous woodland is currently in preparation.

THE NATURE OF THE CHALLENGE

6.2 There are two main threats to biodiversity associated with this sector:

- Threats to the biodiversity of ancient trees and native woodland, including subtle decline, lack of appropriate management, and – occasionally – total loss
- The negative impacts of certain types of forestry (plantations in particular) and forestry practices on non-woodland habitats and species

The programme of action at Appendix 3 sets out what we are doing now and what we need to do in the future to tackle these concerns.



(Chris Gomersall, RSPB Images)
In the past, some trees have been planted in the wrong places. Removing these plantations is an important part of the restoration of our heathlands.

BACKGROUND AND CONTEXT

6.3 Trees, woodland and forests are quintessential features of the landscapes and environment of almost every part of England. Woodland is an important land use, and has been a source of renewable materials and energy for as long as people have settled here. And woodland has provided a range of environmental and social benefits. The long lifetime of trees and the very long continuity of woodland cover has meant that planning for future generations has always been part of woodland management. Sustainability is thus a familiar concept in this land use and in the forestry profession.

6.4 The last two decades have seen the three strands of sustainability established on a more equitable footing in forestry. Conservation of biodiversity is now seen as an integral part of woodland management and creation. The HAPs and SAPs have provided a valuable framework for planning, and a great deal of woodland creation and improvement has already been completed. However, there is a need for woodland owners and managers to be more fully engaged with the aspirations and delivery of these plans. There is also a need to increase recognition of the role that woodland biodiversity can play in enhancing the quality of life of local communities and promoting sustainable development in both rural and urban areas.

6.5 The UK's forestry policy has been re-shaped since the 1992 Rio Earth Summit, and the UK fulfilled its commitment in Rio by producing *Sustainable Forestry: the UK Programme* to accompany the UK Biodiversity Action Plan in 1994. The twin objectives of UK forest policy are:

- *the sustainable management* of our existing woods and forests; and
- *a continued steady expansion of our woodland area* to provide more benefits for society and our environment.

6.6 All forest operations approved by the Forestry Commission are subject to compliance with the *UK Forestry Standard*¹⁸, a comprehensive benchmark of sustainable practice.

¹⁸ Forestry Commission 1998 UK Forestry Standard (Forestry Commission)

6.7 The Government's strategic priorities and programmes for woodlands and forestry in England are set out the *England Forestry Strategy (EFS)*¹⁹. Biodiversity plays a significant role in each of its four key programmes:

- *Promoting the rural economy and employment*, where biodiversity plays a role in sustaining rural enterprises dependent on either wildlife or game
- *Restoring former industrial land and enhancing urban environments* which can bring woodland wildlife right into the heart of our cities and make woodland birdsong and wildflowers a part of people's everyday lives



(Forest Life Picture Library)
Woodlands can provide environmental and social benefits as well as economic income.

- *Promoting public access and recreation activities in woodland*; there is no doubt that observing a wide variety of wildlife enhances most people's visits to woodland
- *Conserving our environmental resources, landscape character and cultural heritage*, with biodiversity being the element which literally brings landscapes to life, and which has had a major influence on their evolution over the millennia

6.8 The Felling Licence regulations and the Woodland Grant Scheme (WGS), operated by the Forestry Commission, are the main delivery mechanisms for protecting and managing trees and woodland. More specifically, Woodland Improvement Grants have been targeted to promote management operations to improve biodiversity within existing woodlands. WGS in combination with the Farm Woodland Premium

Scheme (FWPS) supports woodland creation, and seeks to create 3000ha of new woodland on farmland each year. Both WGS and FWPS schemes are currently under review.

WHAT WE WANT TO SEE

6.9 The programme of action for this sector (see Appendix 3) has a comprehensive range of actions to ensure that our aims are achieved. In summary it will:

Protect native woodland from further damage, i.e.

- Take measures to prevent loss or damage to ancient woodland and trees, and their uniquely rich biodiversity, from development and mineral extraction
- Tackle the adverse impacts from agricultural activities on land adjoining woodland and in wood pasture, including intensification, over-grazing and drift of agro-chemicals
- Arrest undesirable change in woodland due to the impact of certain species (especially rhododendron, deer and grey squirrels)

Enhance, extend and restore the existing native woodland resource, i.e.



(Peter Wakely, English Nature)
Climate change may have a significant adverse effect on the long term future of beech woodland in southern England.

- Seek better evidence about the ecological condition and threats to native woodland, wood pasture and ancient trees and better understanding and awareness of the implications of climate change

¹⁹ England Forestry Strategy – a new focus for England's Woodlands, Forestry Commission 1999

- Encourage woodland management which conserves and enhances the rich biodiversity of our native woodland – including promoting the restoration of ancient woodland sites and parkland adversely affected by past conifer plantation
- Create new native woodland where it will complement, enhance and protect both existing woodland and open ground habitats

Manage non-native woodland to improve biodiversity in the wider landscape, i.e.

- Diversify and restructure commercial plantations to provide a range of habitats and structures, to suit both woodland and non-woodland species
- Take appropriate opportunities to re-create or restore open-ground habitats, such as heath and moorland, by removal of the largely coniferous plantations that were established on them in previous decades

Realise the broader quality of life benefits of woodland biodiversity, i.e.

- Improve the evidence on the contribution of woodland, and its associated biodiversity, to people's quality of life and on the value of the environmental services it provides
- Secure more high quality public access to woodland with rich biodiversity. This will enhance people's enjoyment, provide health benefits and increase public understanding of woodland and the sustainability of wood products

HOW WE WILL ACHIEVE THIS

6.10 To achieve these outcomes, the programme of action for woodland will use the following tools:

- **Refined Government approaches** to the conservation and restoration of ancient woodland in England, and on re-creation of open habitats from forestry plantations

- **More effective incentives** to woodland owners, including closer integration of forestry and agri-environment measures to achieve benefits at a landscape scale. The mid-term review of the ERDP and the results from the reviews of woodland creation and management of existing woodland in England will guide the development of new incentives
- **Better advice/services** to inspire and guide woodland owners and managers, and to ensure pests and other threats are adequately addressed
- **Promotion** of the role of woodland in providing environmental benefits, such as flood alleviation and recreation, to both urban and rural communities
- **Practical action** by the Forestry Commission on its own estate to further realise the potential of public forests to enhance biodiversity and public enjoyment; (e.g. restoration of plantations on ancient woodland sites to native woodland)
- **Research and development** to increase our knowledge of the condition of woodland biodiversity, to gather evidence on the extent of the non-market benefits and to increase our awareness of the conservation needs of woodland biodiversity



(Derek Ratcliffe, Plantlife)

Recent conservation management has arrested the decline of the sword-leaved helleborine (*Cephalanthera longifolia*) – a woodland orchid. But lack of appropriate management continues to result in the decline of many woodland plants.

The White Rose Forest

The White Rose Forest is an urban forestry project that aims to create a genuinely well-wooded landscape, benefiting the people, economy and wildlife of West Yorkshire. It is supported by partners including the Countryside Agency, Forestry Commission, local authorities and non-governmental organisations.

As a sub-regional initiative, the White Rose Forest has been able to secure significant support from the Regional Development Agency, Yorkshire Forward, to fund delivery through local projects. This has been matched with contributions from partner organisations and funding from landfill tax.

The White Rose Forest is concerned with biodiversity among a number of key objectives. It directly contributes to biodiversity targets, such as through the restoration of upland oak clough woodland in the Southern Pennines, and requires ecological appraisal of all projects to avoid adverse impacts.

The White Rose Forest exemplifies an approach that includes biodiversity within broader regeneration and environmental enhancement objectives. For example it is working with partners to explore the use of woodland and tree establishment within catchments to reduce the risk of local flooding and contribute to habitat targets such as those for wet woodland.

CONSTRAINTS AND UNCERTAINTIES

6.11 Achieving what we want will not be easy. In common with many other land uses, we do not have an adequate information base on the resource, nor a full understanding of the management techniques and natural dynamics of all habitats and species, hence the need for further research.

6.12 There are two fundamental and closely related challenges which will affect progress. Firstly, the fall in timber prices has reduced the economic viability of most forestry enterprises,

and thereby reduced their ability to fund management activity for biodiversity. Even those managed primarily for non-market benefits have suffered a fall in any secondary income from timber. There is therefore an increased need to develop new value-added markets for timber, and also alternative woodland-based enterprises.

6.13 The second major challenge is that less than half the area of woodland is currently under appropriate management within an approved scheme. Although many woods do not need active intervention, in the short term many are vulnerable to slow decline or are under threat. Many unmanaged woods are also likely to be under-performing in terms of providing benefits for their owners and for wider society. We have a limited knowledge of the condition of such woodland, and we have an equally limited engagement with the owners. If we are to bring a larger area back into management we have to provide the advice, support and inspiration tailored to the needs of the owners of all woodland. Linked to both of these is the decline in the capacity of the forestry contracting sector, which is likely to affect delivery on the ground.

TARGETS, MILESTONES AND INDICATORS

6.14 A set of UK Indicators of Sustainable Forestry is currently being finalised, including a cluster relating to biodiversity. The specific biodiversity indicators we will use for this part of this Strategy are:

- Populations of woodland birds (H1)
- Progress towards woodland HAP/SAP targets in England (F1)
- Condition of woodland SSSIs in England (F2)
- Trends in woodland plant diversity (F3)
- Area of ancient/broadleaved woodland under an approved management regime (F4)
- Area of ancient woodland open for public access and number of leisure day visits to woodland (F5)

Towns, cities and development

VISION

7.1 Towns and cities which have a place for wildlife, and in which a flourishing biodiversity makes a real contribution to the quality of life of urban residents, workers and visitors. Development that makes minimal impact on wildlife habitats and contributes to the conservation of biodiversity.



(Jeremy Dagley, English Nature)
Suburban gardens can be an important habitat for the stag beetle.

Our aims are:

- To ensure that cities, towns and other settlements contribute fully to the goals of biodiversity conservation
- To ensure that construction, planning, development and regeneration have minimal adverse impacts on biodiversity and enhance it where possible
- To ensure that biodiversity conservation is integral to sustainable urban communities, both in the built environment, and in parks and green spaces
- To ensure that biodiversity conservation is integral to measures to improve the quality of

people's lives, delivered through other initiatives e.g. Community Strategies, including Neighbourhood Renewal and Cultural Strategies, social inclusion, health and equality of opportunity

- To value, further and enhance people's own contributions to improving biodiversity in towns and cities and to increase their access to it

Habitat and Species Action Plans particularly relevant to urban areas and development include:

**Lowland heaths
Wood pasture and parkland**

**Stag beetle
Great crested newt
Song thrush
Water vole
Bats**

THE NATURE OF THE CHALLENGE

7.2 An important part of our biodiversity has its home in urban areas, whether inner cities, market towns or suburbs. The black redstart is almost wholly an inner urban bird in England, and some species, such as the common frog, stag beetle and juniper pug moth have nationally significant populations in suburban areas. Improvements in water and air quality over the past 30 years, together with the maturation of the urban forest, have enabled many species to colonise our towns and cities with some success. These include a wide range of fish species returning to urban rivers and the growing success for example of grey heron, great spotted woodpecker and speckled wood butterfly. But others, such as rook, have disappeared, or are declining, like hedgehog. Any comprehensive biodiversity strategy or policy needs to include our towns and

cities as much as rural and marine areas, and we need to move away from the widespread assumption that nature belongs solely in the countryside. Indeed, some of the best places for biodiversity in towns and cities can be in areas of ‘encapsulated countryside’, where the pressures on biodiversity are similar to those of the wider countryside.

7.3 The main concerns for biodiversity associated with urbanisation and development are:

- Pressure on high-value land for development and other uses leads to the potential for conflict with biodiversity objectives
- Urban green spaces often consist of highly-managed, largely artificial landscapes used for many competing interests and maintained using methods not always sympathetic to biodiversity
- The population density of urban areas leaves little space for natural processes to operate effectively
- A common perception that nature is not of or for towns and cities, and thus an unwanted intrusion
- Gardening practices can be the source of introduced species with the capacity to cause damage to native habitats and species. Pets can have adverse impacts on wildlife in certain circumstances

The programme of action at Appendix 4 sets out what we are doing now and what we need to do in the future to tackle these concerns.

7.4 Although only about 10% of England’s land cover is urbanised, we are an urban nation; almost 90% of the population lives in towns and cities. This figure is set to grow. The role of the natural world, albeit often in stylised forms, in enhancing the quality of life in urban areas has long been recognised. This country’s tradition of city parks and squares and town houses with their

own gardens matches any in Europe. Our urban trees and woods help to reduce air pollution; they provide shade from ultra violet light; and they act as a buffer to wind and noise. Even the simplest experiences of feeding ducks in the park, watching tadpoles in the garden pond, and hearing the robin singing on the way to work bring about the contact with nature that research suggests is an important contribution to our mental well-being. The role of natural green spaces in contributing to urban people’s health, to flood control, pollution amelioration, and economic value is increasingly recognised.



(Andrew Hay, RSPB Images)
Many developments can incorporate features to enhance biodiversity.

7.5 The Urban White Paper²⁰ set out the Government’s policy of bringing an urban renaissance to our towns and cities. The aim is to deliver real improvements in terms of local economies, quality housing and schools, social capacity, and people’s everyday environments – to improve ‘liveability’. Biodiversity has an essential role to play in liveability improvements: ‘designing with nature’, especially in buildings and public spaces, can improve people’s quality of life directly and show how nature can itself work to maintain the qualities of land, air and water for people’s benefit. And there are benefits and opportunities within towns and cities to create habitats through new development, with some innovative schemes that show that biodiversity can be conserved and even enhanced as a consequence of urbanisation and development.

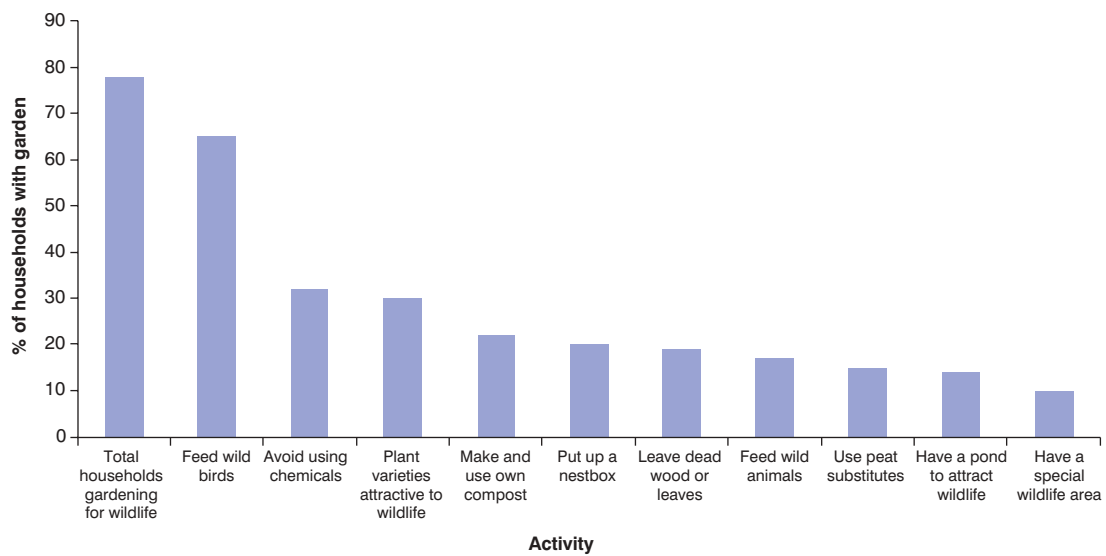
²⁰ Our Towns and Cities: The Future Delivering an Urban Renaissance DETR November 2000



(Charron Pugsley-Hill, English Nature)
 Garden ponds are an important wildlife habitat.

7.6 There is already tremendous enthusiasm for nature in urban populations. The populations that live and work in urban areas are important to success in conserving biodiversity not just in towns but also in the wider countryside. Membership of nature conservation organisations (some 5 million) outstrips that of political parties and 78% of households say that they take some action to encourage wildlife into their gardens. There is a tradition of innovation and enthusiasm within the urban nature conservation movement that we need to harness to maximise the biodiversity of urban areas.

Figure 4: Gardening with wildlife in mind



Source: ODPM Survey of English Housing 2001-2

7.7 Although there are few priority BAP habitats and species which depend on towns and cities there is considerable energy in the delivery of Local Biodiversity Action Plans (LBAPs) for urban areas. All LBAPs so far published have some relevance to them. Many identify local action for national priorities (e.g. heathland, stag beetle, bats). Some LBAPs address towns and cities with a generic action plan for urban habitats (e.g. Surrey). Others, usually including the larger cities, address a suite of habitats and species more typical of towns and cities, and reflecting where many people's values in nature lie. These include, urban grasslands, parks and gardens (e.g. Newcastle, North Merseyside, Birmingham & the Black Country), cemeteries and churchyards (e.g. London), and wasteland and industrial land (e.g. Newcastle, Sheffield). Many have also taken the lead for species with no nationally co-ordinated action (e.g. black redstart, peregrine falcon), or have identified species that have subsequently become national conservation issues (e.g. house sparrow).

Nature and Community development: Castle Manor estate Sheffield

The Sheffield Wildlife Trust is making nature conservation central to the social and environmental regeneration of the most deprived wards of the city. Using £10m of partnership funding, 22 green estate projects will be implemented over 8 years. The initiative has involved many local residents in the areas' transformation from derelict estates into natural beauty. There will be community parks and gardens and a whole urban renaissance for people and wildlife. The key to success is in giving local people a direct say in how the community gardens, tree nurseries and green spaces are managed.

7.8 A few LBAPs have specifically addressed the hard, built environment. Those for Newcastle, Birmingham and the Black Country, Westminster, Camden, and Hull contain specific plans for buildings and other artificial structures. Others have action plans for species that use the built environment, such as swift, house martin and bats.

Green roofs and black redstarts

Concerns at the loss of breeding sites of black redstart in parts of inner London, has led to a range of initiatives that may eventually lead to a renaissance of green roofs – those with vegetation or other habitats built onto them. The black redstart is a priority species of the London BAP, and the London Wildlife Trust in partnership with local people, English Nature, the British Trust for Ornithology and others, has produced guidance to alert and aid developers and planners. This has progressed through the enthusiasm of local volunteers to the design and recent installation of pilot 'brownfield' roofs in Deptford, and the preparation of detailed guidance on the web: www.blackredstart.org.uk

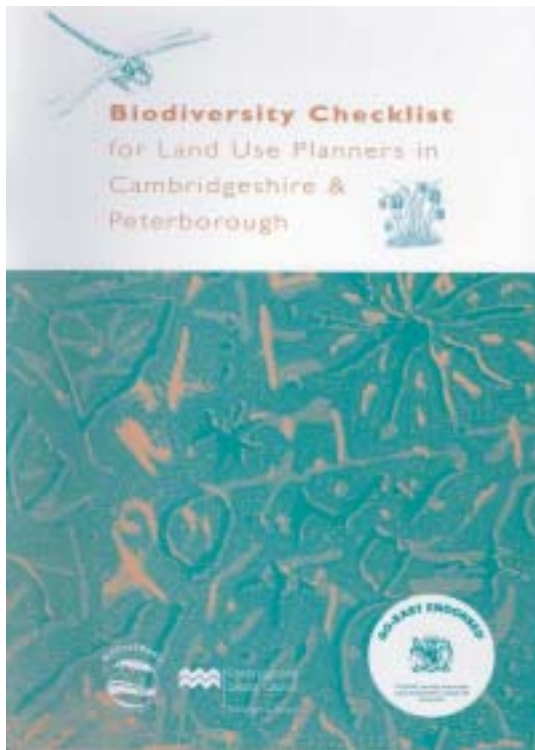
The London Borough of Lewisham has adopted a green roofs policy in their UDP and the Lewisham Biodiversity Partnership has drafted a Green Roof Action Plan. Green roofs for black redstarts will be part of the developments at the Kings Cross Channel Tunnel link, the World Trade Centre at Canary Wharf, the new Arsenal football stadium and Battersea Power Station.

English Nature has funded continuing research on the potential of a variety types of green roofs to conserve biodiversity in urban areas, and will promote their environmental benefits to the urban development professions.

WHAT WE WANT TO SEE AND HOW WE WILL ACHIEVE IT.

7.9 The programme of action set out in this strategy focuses in particular on the following:

- **Integration of biodiversity into policies and programmes for sustainable urban communities**, through the development and promulgation of awareness and good practice in using biodiversity for urban regeneration. Existing examples are: Building for Nature (SEEDA), the Creekside Environment Project (Deptford, London), *Developing Naturally* (ALGE) and forthcoming guidance from English Nature on green roofs and brownfield development.



Cambridgeshire County Council has produced guidance for incorporating biodiversity interests into a whole series of developments from housing, minerals, waste and transport.

- **Planning policies and development decisions that recognise the need to conserve and enhance biodiversity.** Planning Policy Guidance Notes (PPGs) 3 and 17 recognise the importance of biodiversity in the context of housing and open space planning.

We are preparing a revision of Planning Policy Guidance No. 9 on nature conservation, which will take full account of the needs of biodiversity, including that in built-up areas. Consultation on the revised guidance will take place in Spring 2003.

- **The planning and implementation of large-scale strategic and infrastructure projects that take full account of the needs of protected areas and species and wider biodiversity.** Large-scale projects, for example for transport and energy infrastructure, should take account of the potential impacts on biodiversity along with other environmental impacts at all stages from preliminary planning, through detailed design to implementation. For projects subject to the European Directive on Environmental Impact Assessment (EIA) effects on fauna and flora must be assessed. The Strategic Environmental Assessment (SEA) Directive, which will apply from 2004 to a range of plans and programmes that set frameworks for such projects, creates a specific requirement to consider effects on biodiversity. Mitigation of adverse effects and compensation for damage are required in some cases, for example under the EU Habitats and Birds Directives. Experience to date supports the view that in most instances development can live side by side with nature and damage to biodiversity can often be avoided by careful choice of location and design and by using opportunities for enhancement.
- **Encouragement to local authorities and developers to see the potential of biodiversity as an enhancement to developments** through good practice sharing, partnership and guidance. Existing examples are the Wetland Centre, Barnes and Leamouth in London. Work will continue on biodiversity indicators for the construction industry through the DTI-funded CIRIA project.
- **Incorporation of more biodiversity elements into green buildings.** Our aim is to contribute to making environmentally sound building design a more mainstream practice by encouraging the development of expertise in the biodiversity elements of green buildings through the relevant professional bodies. This is

an area that requires further research, but a start has been made with English Nature's work on green roofs.

- **Urban parks and green spaces managed with biodiversity as a core principle**, and greater recognition of the biodiversity values and potential of more informal green space such as churchyards, cemeteries, institutional grounds, transport corridors and allotments. The Government's response to the work of the Urban Green Spaces Taskforce will include measures to encourage the improvement of the biodiversity quality of formal and informal green spaces in towns.
- **Further understanding of biodiversity in gardens and parks and encouragement of gardening practices in urban areas that enhance wildlife** through information, publicity and citizen science. The 1998 stag beetle survey (PTES and others) and 2001 Garden Safari (Wildlife Trusts, Daily Telegraph and BBC Tomorrow's World) and 2002 RSPB Big Garden Birdwatch involved hundreds of thousands of people, demonstrating the public's interest in helping to understand biodiversity.
- **Recognition of the opportunities of Local Nature Reserves** – these are local sites which through positive management and partnership with local communities can bring the benefits of nature closer to people and people closer to nature. 35% of England's Local Nature Reserves are urban, and a further 33% lie within 1 km of an urban area, so they are an important tool for conservation in urban and suburban areas.
- **Promotion of a standardised approach to the identification of local wildlife sites.** Many authorities, including those in towns and cities, have identified sites that are an important biodiversity resource. These are recognised by development plans and have been given weight in planning decisions and at public inquiries. The selection of these sites on their biological interest is often given added weight by the social and educational values they can provide, especially in urban areas (see paragraph 3.12).

Connecting with London's Nature: The Mayor's Biodiversity Strategy

London is one of the greenest of world cities. The parks and other green spaces are renowned, and the Thames is one of the cleanest metropolitan rivers in Europe. The green spaces support a huge variety of plants and animals; over 1,500 species of flowering plants and 300 types of birds have been recorded in recent years. Wildlife habitat extends from the fringes of the urban area right into the heart of the city and includes woodlands, meadows, wetlands, rivers, parks and the 'urban' habitats found, for example, on disused railway land or areas where buildings have been demolished and nature has taken over. The Mayor's strategy sets out how these important features and their benefits to the population of London can be looked after for the future.

The London Mayor's Biodiversity Strategy was launched in July 2002²¹, and is one of 8 strategies the Mayor must produce. All the other strategies have links to biodiversity and thus biodiversity is embedded into the whole range of policies for London's future. The Spatial Development Strategy, for example, will set out an integrated social, economic and environmental framework for the future development of London including policies to protect, manage and enhance biodiversity.

Partnership is essential to the delivery of the strategy. Borough Councils, community groups, businesses, conservation organisations and individual Londoners will all need to work together with the Mayor to meet the Strategy's aims. A vital player is the London Biodiversity Partnership, chaired by the GLA, which brings together those with a stake in the future of biodiversity in London.

For more details see www.london.gov.uk

²¹ Connecting with London's Nature The Mayor's Biodiversity Strategy July 2002 GLA

CONSTRAINTS AND UNCERTAINTIES

7.10 Despite the enthusiasm for nature among a lot of urban residents, a great many people have limited access to nature, and a significant minority live and work in areas where the quality of the environment is very poor. Dealing with life's pressures often means that biodiversity or access to natural green space close to home are low priorities for many. Addressing environmental exclusion, by demonstrating the contribution that the natural world can make to improving people's lives, will require broadening the appeal and benefits of biodiversity conservation to a very much wider audience. This will be a significant challenge.

7.11 The choices that people make to spend their time and money are diversifying rapidly. It is possible that technology and 'virtual' experiences will further increase the disconnection between people and nature. Knowledge of global environmental issues is widespread, but appears to translate poorly locally. The increased ethnic diversity within England's towns and cities and wider awareness of other global environments (through increased travel) will result in new evaluations and interpretations of the environment in which people choose to live, work and play. The challenge is to address the widely varying value systems that people place on the natural environment, and how these may diversify with increasing cultural multiplicity and technological choices.

7.12 The need to maintain competitiveness in an increasingly global economy, as well as the Government's vision for an urban renaissance, are likely to continue to require new development, including extensions to transport infrastructure new offices and workspaces and new housing. The demand for urbanisation will lead to further development on brownfield sites, and pressures on other open areas, some of which are of biodiversity interest. In the face of such pressures, the challenge of sustainable development will require dedication, imagination and flair.

TARGETS, MILESTONES AND INDICATORS

7.13 The biodiversity indicators we will use for this sector are:

- Progress towards urban related SAP targets (T1)
- Condition of SSSIs in urban areas (T2)
- Populations of birds in towns and gardens (T3)
- Ease of access to local green space and countryside (T4)
- Proportions of households in England undertaking wildlife gardening (T5)
- Unitary Development/Structure Plans with biodiversity policies and targets (T6)

The effects of climate change on biodiversity

The Changing Climate

The Earth's climate is undergoing exceptional change. The latest predictions of the UK Climate Impacts Programme (UKCIP) in April 2002 suggest that climate change will be earlier and sharper than previously thought. The predictions are based on the Hadley Centre's latest climate models and four emissions scenarios provided by the Intergovernmental Panel on Climate Change (IPCC).

Records indicate that temperatures in central England rose by almost 1°C during the 20th Century; the 1990s was the warmest decade since records began in the 1660s. In the UK during the last 100 years, the growing season has extended by about one month, and the average UK sea level has risen approximately 10 cm (after taking account of natural land movements).

By the 2080s, the scenarios suggest:

- *Average annual temperature rising by between 2°C and 3.5°C.*
- *Winter precipitation increasing by perhaps 10% to 35%.*
- *Summers between 35% and 50% drier and sunnier.*
- *More frequent extreme weather events.*
- *Rising relative sea levels, by between 26 and 86cm above the current level in south east England.*

Ongoing research studies, such as the collaborative MONARCH project (Modelling Natural Resource Responses to Climate Change), are developing models and techniques to forecast the impacts of climate change on wildlife and geological features in the UK. The results so far indicate that the responses of different species to climate change will vary: some will lose suitable 'climate space' whilst others will gain. For most species, however, the geographical location of suitable climate space will shift; in some cases there will be no overlap with current distributions.

Addressing climate change in the UK and globally

The Government is taking steps to stabilise the concentration of greenhouse gases in the Earth's atmosphere, to mitigate the severity of climate change. The UK Government's target, under the EU burden-sharing agreement to meet its Kyoto commitment, is a 12.5% reduction in greenhouse gas emissions by 2010. The Government's domestic goal, to cut CO₂ emissions by 20% below 1990 levels by 2010, is supported by a programme that combines fiscal measures with voluntary incentives. However, despite these actions, CO₂ emissions are expected to increase globally, compared to current levels, by between approximately 12% and 200% by 2050, according to the latest IPCC assessment.

Climate change impacts on biodiversity

Research studies have shown that climate change is likely to have a major impact on biodiversity in England. Some species will be affected directly as climatic conditions within their current distributions become less suitable. For example, some Arctic and Alpine species (such as Trailing Azalea and the Mountain Ringlet butterfly) which are relics of the last Ice Age, may become less able to compete with an influx of temperate species as the climate warms in the mountains of northern England. Some vulnerable species may become locally extinct. Species currently restricted to southern England may find suitable climates extending northwards (such as Sea Purslane and Azure Damselfly), but they may not be able to disperse to and colonise suitable habitats. Some habitats (including raised bogs, wet heaths, coastal dune slacks, drought-prone acid grasslands and beech woodlands) and their associated species will be affected by changes to the hydrological cycle, especially increases in summer drought in south east England. Coastal habitats will be affected by rising sea levels and increased storminess.

Climate change will also have indirect effects on biodiversity through, for example, changes in land use, demand for water, and patterns of recreational activity. In addition, conditions may become more favourable for the spread of invasive non-native species. Evidence from the recently published Butterfly Atlas suggests that distributions of some butterflies are already changing in response to climate change. Overall, we need to ensure that we have adequate monitoring systems in place to detect the effects of climate change.

Adapting to climate change

It is difficult to frame a precise response when there remains so much uncertainty about future climates. Instead our response has to be to maximise the adaptive capacity of the predominately semi-natural ecosystems in England and to avoid setting ourselves impossible tasks in trying to maintain current or restore pre-existing patterns of biodiversity. All our objectives for 20 or 50 years hence should take account of the likelihood of significant climate change. In helping biodiversity to flourish now we are also improving its ability to cope with future pressures. In promoting policies which regard biodiversity as a component of a larger ecosystem, operating across whole landscapes or seas, we are better able to manage change in those ecosystems to sustain biodiversity.

As our knowledge of the likely impacts of climate change improves, through continued research and monitoring, we will need to adjust our management strategies and target actions where they will be most effective in enabling vulnerable species to survive or to disperse to and colonise new areas. Schemes for habitat creation and restoration will have to take account of likely new conditions as the new habitats become established. Management of our network of protected sites will be critical as they not only provide the main 'hot spots' from which biodiversity must disperse, but also the more natural ecosystems capable of providing a 'home' for new colonists. Future condition assessments will need to take these likely changes into account.

The UK Biodiversity Action Plan and the England Biodiversity Strategy provide the necessary policy framework to adapt to the long-term implications of climate change. Climate change will be an important factor in the continuing management of priority species and habitats and in the planning of actions to conserve them. The BAP and the Strategy also provide systematic frameworks of reporting and monitoring, which can be used to steer adaptation to climate change over the coming decades.

Climate change indicator: Changes in abundance of climate sensitive species at Environmental Change Network sites in England (C1).

The Coasts and seas

VISION

8.1 Clean, healthy, safe productive and biologically diverse oceans and seas and a coastline which reconciles human needs with the conservation and restoration of wildlife habitats, as far as possible through natural processes.



(Roger Mitchell, English Nature)
 The edible sea urchin, one of over 44,000 species found around our coasts.

Our aims are:

- To maintain, and promote the recovery of the overall quality of our seas and coasts, their physical and biological processes and biodiversity

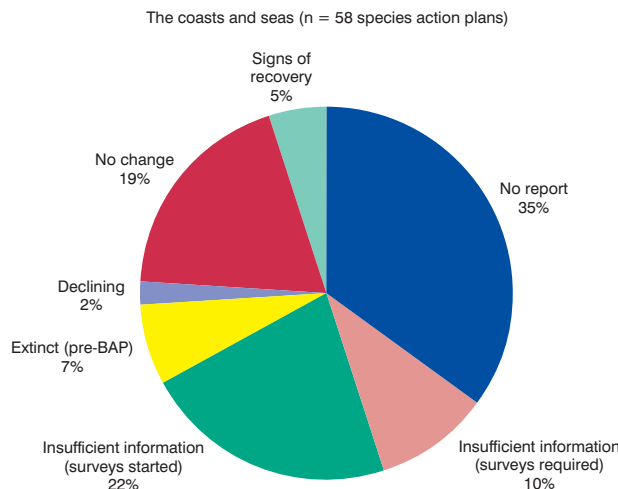
- To ensure the inclusion of considerations about biodiversity as part of the development and delivery of policies relating to marine and coastal management
- To ensure the inclusion of considerations about biodiversity into the activities of all those involved in coastal and marine use and development

The UK BAP has:

- **58 species action plans – including for sand lizard, shore dock, small dolphins and marine turtles, and**
- **17 habitat action plans – including for sand dunes, mudflats, cold water reefs and salt marsh**

that are associated with the coasts and seas around England.

Figure 5: Progress with Biodiversity Action Plans



THE NATURE OF THE CHALLENGE

8.2 People have had a major effect on the composition of life in marine ecosystems in terms of size, abundance, diversity, distribution, genetic composition and extent of habitats. The main specific concerns for biodiversity in coastal areas and in the marine environment are:

- Pressures on coastal habitats arising from construction, mineral extraction, recreation and tourism
- Loss of habitat through 'coastal squeeze', exacerbated by sea-level rise, where flood defences prevent landward migration of inter-tidal or littoral habitats
- Over-exploitation of the natural resources of the marine environment, especially through fishing
- Pollution from land and at sea, including organic enrichment from sewage and fertiliser run-off, hazardous substances which are toxic, persistent and liable to accumulate in marine organisms
- Lack of satisfactory mechanisms for ensuring that the conservation of nature at sea is as well developed as on land
- Gaps in information about the components, quality, structure and functioning of the marine ecosystem



(English Nature)
Saline lagoons are being lost due to 'coastal squeeze'.

Each of these is addressed by this Strategy. The Government's first Marine Stewardship Report 'Safeguarding our Seas'²² provides the

main policy framework for this part of the strategy and has put an ecosystem-based approach to marine management at its heart. Sustainable development, integrated management, stakeholder involvement, robust science, the precautionary principle and the conservation of biodiversity are stressed as guiding principles.



(Chris Gomersall, RSPB Images)
Retaining or developing coastal saltmarsh can provide an effective alternative to man made coastal defences.

8.3 The coastline of England is represented by a mixture of hard and soft geologies important for its diverse habitats and for the species they support. The marine environment is equally diverse and in many cases extremely fragile and threatened. The economic value of the coast and seas is often implicitly linked to the presence of biodiversity, either through direct use of resources or indirectly through the importance of wildlife and nature to tourism and recreation.

8.4 Coastal habitats, particularly those associated with soft geology, are usually very dynamic and so their condition depends on the geomorphological processes which shape them. This is especially important because people have made considerable direct, morphological changes to the coastline through reclamation, industrial development (including port construction) and coastal protection. And indirectly, we are increasingly having an impact through climate change which brings sea level rise and increased storminess. The marine environment is also highly dynamic and interconnected through the water column. It faces numerous threats, for example from over-fishing, pollution and litter. Because of the complexity of the marine ecosystems and their dynamic nature, we need to develop further our understanding of natural processes in order to

²² Safeguarding our Seas May 2002 Defra

inform our decisions and policy directions. We also need to apply the precautionary principle, erring on the side of caution where the scientific evidence is not conclusive.

Flood defence through habitat creation on the Humber Estuary

The Humber Estuary is among the 10 most important European estuaries for wildfowl and wading birds. It is located within some of the country's most productive farmland, is a major industrial centre and home to over a third of a million people.

The Environment Agency is developing a long-term strategy for managing the flood defences surrounding the estuary to take account of all these factors in a sustainable way.

It is necessary to maintain the line of defence around the major commercial and population centres on the estuary, even though this will lead to the loss of valuable wildlife habitat which will worsen as sea levels rise. But moving the defences back from the current line in other places will make the overall system more sustainable by making the defences longer lasting and creating new habitat to compensate for the predicted losses.

The Humber Estuary Shoreline Management Plan recommends that opportunities for re-aligning the defences should be sought wherever this might:

- **Reduce the threat of erosion affecting the stability of the defences**
- **Lower extreme high water levels**
- **Create habitat to offset losses resulting from schemes or rising sea levels**
- **Deliver better value for money**

The Environment Agency has identified a number of possible sites for setting back the line of defence and is currently consulting with landowners with a view to purchasing land at suitable sites in 2004/2005.

8.5 It is virtually impossible to separate the use and exploitation of the marine environment from the wildlife that occurs there. The ecosystem-based approach adopted by the 5th North Sea Conference and embraced by the Marine Stewardship Report is essential to a coherent consideration of the health of biodiversity in the marine environment. In such an approach, the conservation of biodiversity is central, rather than incidental, to any regulation or investment decision. The Review of Marine Nature Conservation (RMNC) and its Regional Seas Pilot Scheme in the Irish Sea recognises this fact.

8.6 A biodiversity strategy for coastal and marine areas must reflect the socio-economic factors and policies involved in their management. Historically they have been a major reason for the loss of biodiversity, but in the future they must play a part in its restoration. The awareness, inclusion and active participation of all stakeholders at all stages from planning to delivery are central to the Strategy.

8.7 The perceived conflict between development and conservation often appears particularly acute in the coastal zone. An essential principle of the Strategy is to ensure that the local, regional and national planning structures allow for and encourage the conservation of biodiversity to become an opportunity rather than a threat to development.

8.8 Government direction, regulation and investment are particularly important in marine and coastal management. The present institutional arrangements, funding streams and policy emphasis may not give sufficient weight to biodiversity considerations. The Strategy seeks to build a sense of ownership of biodiversity objectives among major regulators, developers and users of marine and coastal environments and to integrate biodiversity into wider regulatory and management approaches. Considerable areas of the coastline are recognised through UK and EU statutory designations for conservation. However, the Strategy reflects the reality that biodiversity is about considerably more than just achieving the favourable condition of designated sites. The Strategy seeks to ensure that the Government's policies and programmes comply

with, contribute to and facilitate others to contribute to the delivery of biodiversity objectives through clear, transparent and effective regulatory systems.

WHAT WE WANT TO SEE AND HOW WE WILL ACHIEVE IT.

8.9 The programme of action in Appendix 5 sets out to achieve the following practical outcomes.

- **The conservation of and, where appropriate, creation of habitats is fully incorporated into all planning and management processes in the marine and coastal zones.** This will be taken into account in the current Government review of the regulatory framework affecting development in coastal and marine waters. Biodiversity objectives will be incorporated into a national strategy for implementing Integrated Coastal Zone Management
- **The achievement of biodiversity objectives through flood and coastal management policies and programmes, working increasingly with natural coastal processes.** We will develop Shoreline Management Plans and Coastal Habitat Management Plans to increase the use of natural coastal processes in the conservation and creation of wildlife habitats to deliver other management objectives



(Paul Knapman, English Nature)
We need to make further progress if we are to manage our coastal and marine fisheries sustainably.

- **Responsible and sustainable fisheries that ensure healthy marine ecosystems as well as providing a livelihood for those in the industry.** We will work with the European

Commission and EU partners to implement the EU Biodiversity Action Plan for Fisheries and to ensure that the review of the Common Fisheries Policy gives full weight to sustainability and biodiversity matters. The introduction of further no-take areas (as has happened in the seas around Lundy Island) will be considered

- **Sustainable development of the offshore energy sector through the further incorporation of biodiversity considerations into the environmental assessments (SEAs and EIAs) relating to offshore renewable energy and other activities**
- **Continued reductions in pollution from land-based sources.** Much has already been achieved but we will continue to work with the EU and other partners internationally (especially through OSPAR) to address marine pollution problems
- **A coherent legal and administrative system for nature conservation in the marine environment.** We will use the results of the pilot project in the Irish Sea to establish a framework for the future administration of biodiversity conservation in the marine environment. We will also complete the EU Special Protection Area designations in coastal waters and the extension of Natura 2000 beyond territorial waters as rapidly as possible
- **An improved information base for understanding impacts on marine biodiversity and to support the development of ecosystem-based policies.** We will develop improved information systems, especially the mapping of seabed habitats and the development of Ecological Quality Objectives (EcoQOs) and marine biodiversity indicators
- **A simplified regulatory framework for the protection and management of the marine environment.** This is being undertaken by the current review of the regulatory framework affecting development in the coastal area. Initial proposals are expected by the end of this year and will be subject to full consultation

CONSTRAINTS AND UNCERTAINTIES

8.10 Because of the large number of people involved in the management and development of the coastal and marine zones, and the interdependence of so many of their activities, the importance of involving and seeking the general support of stakeholders is a recurrent theme, particularly in this part of the Strategy. This is highly desirable but inevitably makes action more complex and can take time. Much of the action in the work programme relates to international action and co-operation, where the UK is but one party to the discussions and, although recognised as a valuable partner in this area, cannot direct the outcome. A particular challenge will be to work within the framework of the Habitats Directive to address the effects of change in the marine and coastal environment e.g. the loss of designated freshwater grazing marshes to new saltmarsh or mudflat as a result of sea level rise.

8.11 The uncertainties brought by climate change are particularly problematic in the marine environment, where knowledge of existing ecosystems is poor. In the coastal zone, sea level rise will lead to more unpredictable events with consequences for biodiversity. In addition non-native species in the marine environment brought in by ships' ballast water have potentially large consequences for native biodiversity which are difficult to foresee.

Marine Biodiversity and Climate Change

The Government and other UK agencies (including the Environment Agency and English Nature) are funding a major four-year study, MarClim to assess the influence of climate change on marine biodiversity, using measurements and models of intertidal species.

The results will be used to inform policies concerning the marine environment and provide contextual information to assist in reporting the success or otherwise of this and other Strategies.

TARGETS, MILESTONES AND INDICATORS.

8.12 The biodiversity indicators we will use for this sector are:

- UK fish stocks fished within safe limits (H6)
- Progress towards coastal and marine SAP/HAP targets (M1)
- Populations of coastal and sea birds (M2)
- Marine biodiversity (to be developed) (M3)
- Number and size (or % of resource of coastal and inshore marine Natura 2000 sites; number with management plans; condition of coastal SSSIs in England (M4)
- Marine inputs: cessation of discharges, emissions and losses of hazardous substances by 2020 (M5)
- Levels of cetacean bycatch in UK waters (M6)

The Importance of People

It is fundamental to the success of England's Biodiversity Strategy that it is not simply regarded as the preserve of policy makers, experts and politicians. Whilst the sectors considered in Chapters 4 to 8 above establish the framework for those public policies that are most likely to have an impact on the health of biodiversity in England, it is equally important to create opportunities for the population as a whole to understand the value of biodiversity for their lives and well-being. We want to encourage a climate that builds consideration for biodiversity into everyday lives and businesses, so that it comes naturally to society as a whole. This part of the Strategy looks at ways we can progress through a number of cross-cutting themes, building in many cases on the excellent work that has already started.

We shall publish a companion volume to the Strategy which illustrates particularly the excellent work that is already underway in England through local partnerships for biodiversity – making it a reality on the ground for many people.

Local and regional action

VISION

9.1 The full integration of biodiversity considerations within regional and local policies, strategies and programmes. Healthy and flourishing broad partnerships that champion, promote and enhance local and regional biodiversity and its distinctiveness and help deliver national priorities.



(Simon Williams, Plantlife)
Local Biodiversity Action Plans identify opportunities for increasing public involvement.

Our aims are:

- To promote the integration of biodiversity objectives with social and economic priorities through local and regional biodiversity mechanisms
- To develop broad local and regional partnerships delivering national and local priorities for biodiversity in the long-term
- To promote communication, and shared understanding and community involvement in biodiversity objectives at local and regional levels

THE NATURE OF THE CHALLENGE

9.2 The incorporation of biodiversity into regional and local policies and programmes in England involves local communities, businesses, landowners, non-governmental organisations and central, regional and local government – in short, the full spectrum of stakeholders in biodiversity. This part of the Strategy is concerned mainly with the administrative machinery that is necessary to support action for biodiversity locally and regionally over the next 5 years. These systems should facilitate the full integration of biodiversity considerations within local and regional policies, strategies and programmes and promote complementary action between sectors. The key issues are :

- Taking full advantage of the opportunities for integrating biodiversity issues provided by the Countryside and Rights of Way Act 2000, the Local Government Act 2000 and the developing regional structures (e.g. Regional Development Agencies, Government Offices, Regional Chambers and the future Regional Assemblies)
- Clarifying the role and purpose of the respective administrative tiers (national, regional and local) in implementing biodiversity action
- Developing the potential of people working on biodiversity at local and regional levels to support the action programmes identified in other parts of this Strategy
- Ensuring that local contributions are fully recognised as integral to action for biodiversity in England

The programme of action at Appendix 6 sets out what we are doing now and what we need to do in the future to achieve this.

9.3 Local and regional action for biodiversity has been vital to the UK Biodiversity Action Plan since its inception. Together they are amongst the best examples of multi-stakeholder partnerships in the UK or abroad. Since 1995 approximately 100 Local Partnerships, covering almost all of England, and 9 Regional Biodiversity Partnerships have been established. National advice, guidance, training and workshops enabling the exchange of local experiences and good practice has been facilitated by the Local Issues Sub-Group of the England Biodiversity Group throughout this period of growth. Recommendations to encourage the integration of biodiversity into the work of the emerging regional administrative structures have been made e.g. for exchange of good practice, establishment of regional targets and integration of biodiversity objectives into regional programmes. These will be taken forward as part of the Strategy.



(Andrew Hay, RSPB Images)
Biodiversity conservation should be a key component of Community Strategies.

9.4 Local and regional initiatives have helped deliver national and local biodiversity objectives in partnership with a broad range of organisations, communities and individuals across the country. They have contributed innovation and local distinctiveness to England's biodiversity programme and helped to promote understanding of and involvement in biodiversity amongst local people. A report celebrating the achievements of England's Local Biodiversity Action Plans (LBAPs) will be published early in 2003.

9.5 A number of factors have constrained progress, however. One of the biggest has been resource limitations. For example, in many cases it has been difficult for partnerships to secure resources to coordinate LBAPs in the long-term, and short-term contracts and lack of continuity have been common. There have also been problems with communication between the local and regional levels on the one hand and between LBAPs and national action plan lead partners and agencies on the other. Better communications would promote common understanding of where action is most appropriate. The diversity of local administrative approaches could benefit from the establishment of common standards on target setting and guidance on best practice in reporting and monitoring. Work has already been taken forward to integrate LBAPs into the new Biodiversity Action Reporting System (BARS), being piloted in 2002/3. Further work here will help to ensure that activities in local areas are complementary to one another and together contribute tangibly to national objectives.

9.6 Developments in national legislation have provided new opportunities for local biodiversity partnerships to integrate their work with that needed to achieve broader sustainable development and quality of life objectives. S4 of the Local Government Act 2000 requires local authorities to prepare Community Strategies for the economic, social and environmental well-being of their areas. DETR Circular 04/2001 makes it clear that Local Biodiversity Action Plans are amongst the elements local authorities should build upon when preparing these Community Strategies. It also recognises that local wildlife sites are important components of LBAPs. Many existing LBAP groups are excellent models for partnership working and links between them and the emerging Local Strategic Partnerships for Community Strategies should be established. The Local Government White Paper²³, 2001, promised to reduce the burden of planning requirements imposed on local authorities and to improve the effectiveness and consistency of the remaining planning requirements for both central and local government. This review provides the potential for biodiversity objectives to be linked into other local authority activities promoting the 'well-being' (social, economic and environmental) of local areas through Community Strategies.

²³ Strong Local Leadership: Quality Public Services DTLR December 2001



(Andrew Hay, RSPB Images)

Local and Regional BAPs can play an important role in targeting the recreation of wildlife habitats such as heathland and wetland to the right areas.

9.7 The increasing emphasis on regional government and administration is one of the most important developments in governance in England in recent years. The Government's White Paper on Regional Governance²⁴ points towards the increasing importance of regionally-based decision making. The Regional Biodiversity Partnerships, now established in the 9 regions of England, are well placed to advise regional decision makers on biodiversity issues by, for example, assembling partners, identifying funding streams, providing data and coordinating large-scale projects.

9.8 All the English Regional Chambers have now agreed Regional Sustainable Development Frameworks. These are high level visions for sustainable development, and are drawn up by partnerships including Government Offices, Regional Development Agencies as well as business, local authorities, charities and voluntary groups. The Frameworks set out indicators and targets for the region which will inform other activity in the region. Regional Frameworks inform Regional Planning Guidance and Regional Economic Strategies and provide an important link between local level work on Community Strategies, and the National Sustainable Development Strategy. Sustainable development frameworks provide an opportunity to place biodiversity issues in the wider regional context by showing how biodiversity considerations can be integrated into other policies and programmes, complementary to LBAPs in the region.

WHAT WE WANT TO SEE AND HOW WE WILL ACHIEVE IT

9.9 As with the other cross-cutting themes in this part of the Strategy, **we will establish a new Strategy Implementation Group to take forward this work programme and replace the former England Local Issues Group.** The programme for local and regional action has the following elements:

Work leading to the integration of local and regional contributions for biodiversity into other sectors, in particular to achieve:

- Integration of biodiversity considerations in local authority activities and in particular as part of the preparation and implementation of Community Strategies and recognition of the role of local biodiversity objectives in planning policies
- Full integration of biodiversity considerations within plans and policies for the English Regions and in particular as part of the updating and implementation of Regional Sustainable Development Frameworks and the activities of Government Offices, Regional Development Agencies, Regional Chambers and government agencies operating at the regional level
- The effective contribution of local and regional action to the aims and objectives contained in the agriculture, woodland and forestry, water and wetlands, marine and coastal and urban and development chapters of this Strategy
- Improved contributions from local partnerships to communication and understanding and the involvement of local people in delivering biodiversity objectives
- Increased implementation of local biodiversity objectives by businesses as guided by the proposed Business and Biodiversity Implementation Group

Measures to encourage the development and improvement of LBAPs and regional co-ordination mechanisms, in particular to achieve:

- Local and regional action for biodiversity built on strong, inclusive partnerships with a long-term vision and stability for the future

²⁴ Your Region, Your Choice: Revitalising the English Regions. ODPM June 2002.

- Local and regional activity at appropriate and complementary geographical scales, making a tangible contribution to national plans and programmes
- The widespread exchange of easily-accessible information about biodiversity, good practice and guidance about local and regional biodiversity activities
- Contributions to the investigation by the proposed Economics and Funding Strategy Implementation Group of the funding needs of local and regional partnerships.
- Community Strategies with biodiversity elements (L2)
- Incorporation of biodiversity objectives in regional programmes and strategies (L3)

Building on the new BARS approach, development of further target setting, reporting and monitoring systems, in particular to establish:

- Local and regional priorities and targets that are informed by national BAP targets and priorities and vice versa
- An effective means of reporting and monitoring local and regional progress
- A suite of regional and local biodiversity indicators to track progress on delivery of the local and regional work programme

TARGETS, MILESTONES AND INDICATORS

9.10 There are a number of indicators, including for biodiversity, that have already been developed for the use of local authorities by the Audit Commission and Improvement and Development Agency as part of their Library of Local Performance Indicators. Biodiversity targets have also been used at the regional scale for example in the preparation of Regional Sustainable Development Frameworks and Regional Planning Guidance. The Public Service Agreements between Government and local authorities provide the opportunity to include biodiversity indicators. These indicators and targets need to be monitored and fed into the process of establishing high-level indicators in the future. We propose to use the following biodiversity indicators in this area of work.

- Progress with LBAPs in England (H4)
- Condition of SSSIs in Local Authority ownership (L1)

Biodiversity target for Essex Public Service Agreement

Essex County Council and the Government have entered into a Local Public Service Agreement (Local PSA) to help further improve the Council’s services to local people. This agreement runs from 2002-2005 and includes a target relating to biodiversity:

‘Maintaining biodiversity through the establishment and achievement of appropriate management objectives on a suite of council owned sites.’

The County Council owns and manages 139 sites designated as being of nature conservation interest, some of international and national importance, others of more local importance. These include ancient woodland, grassland, and coastal sites, which total over 800ha, and linear sites (road verges and old railway lines) nearly 70km in length.

The Council has carried out an assessment of current performance in establishing and delivering management objectives for biodiversity in these sites and considered how it could be improved and monitored over the three-year period of the PSA. The proposed indicator measures the degree of achievement towards this ideal, expressed as an averaged percentage figure. Progress is assessed, independently where practicable, against a defined and rigorous checklist.

Essex County Council have found the process of preparing the PSA beneficial as it has improved their knowledge of their biodiversity resource, improved habitat management, secured delivery of BAP objectives across the breadth of council services and directed funding towards biodiversity objectives. It has also enabled the Council to play a greater role in the local biodiversity partnership.

Biodiversity for recreation, health and well-being

Many people value our countryside for quiet enjoyment – be it walking, wildlife watching, cycling or climbing – for spiritual refreshment and well-being. Direct enjoyment of biodiversity is a major reason for these countryside visits: survey evidence suggests that birds and wildlife were the primary reason influencing the decision of 59% of visitors to the countryside.

The Government believes it is important that opportunities for people to visit the countryside should be enhanced. Overall, the impact for biodiversity conservation will be positive, for providing opportunities for people to enjoy the natural environment and to experience wildlife at first hand is vital in building support and understanding for its conservation. Visiting wildlife-rich areas sustains rural economies: for example, the biodiversity-rich North Norfolk Coast attracts some 7.7 million day and 5.5 million night visits per year, generating visitor spend of £122 million and supporting 2,325 FTE jobs so encouraging local communities to support conservation in their areas.

Recent Government initiatives will do much to increase the area of England available for access on foot, cycle and horse. The Countryside and Rights of Way Act 2000 (CRoW) introduced a statutory right of access on foot to land mapped as open country (mountain, moor, heath and down) and registered Common Land. Landowners may also dedicate land to extend the right of access to other users such as horse riders or cyclists, or extend the right of access on foot to other land types. Although in some cases access could harm sensitive habitats, in many instances, such problems can be resolved through solutions such as wardening, signage, information or careful siting of car parks to require a “long-walk” to sensitive areas. Otherwise, the Act provides for access to be restricted or excluded in the small number of cases where this is necessary to protect the biodiversity interest of the land.

CRoW also requires local authorities to prepare Rights of Way Improvement Plans. These will assess the current provision of Rights of Way in relation to public demand. These plans will be an important mechanism for stimulating the creation of new Rights of Way in areas that are deficient.

But there are far wider benefits to the public at large. Objective research is confirming what many people intuitively know: contact with “nature” is good for us, and enhances our quality of life as a whole. This is the basis for English Nature’s Accessible Natural Greenspace model, which aims to encourage local planning authorities to ensure that no person need live further than 300m from a quality natural green space. English Nature has developed a tool-kit for local authorities to assist them in assessing the quality and quantity of natural green spaces in their area, and help them develop a strategy in order to address deficiencies and maximise opportunities.

Lack of physical activity is becoming a national problem: as a nation, we are walking 1% less per annum. Enhancing physical activity is an important means of preventative medicine. For example, mortality is 50% lower in those retired men who walk two miles per day; the risk of stroke is three times higher in those who abstain from exercise; strokes currently cost the nation £26 m per annum. Thus increasing physical activity not only benefits the individuals concerned but also the NHS. However, studies illustrate that the prospect of better health does not in itself provide the motivation for people to take up and sustain physical activity. Projects aimed at encouraging people to take up walking, or undertake countryside management (such as the Countryside Agency/British Heart Foundation “Walking your way to Health”, and BTCV “Green Gym” initiatives) have resulted in far higher levels of sustained participation, as the attractiveness of the countryside acts as an additional motivator. Delivery of biodiversity objectives will do much to enhance countryside quality, so providing the underlying foundation for such health improvement initiatives.

Research is also showing that biodiversity influences our quality of life in more subtle ways. Mere visual

contact with “nature” reduces our stress levels and promotes well-being. Motorists are less stressed when driving, under similar traffic conditions, along leafy tree and shrub-lined roads. Hospital recovery rates following surgery appear to be more rapid in patients with a view of green space than concrete. So there is a need not only to provide people with greater access to biodiversity, but to bring biodiversity to people – pocket parks, urban tree planting, gardens, and green roofs are all important.

The economics and funding of biodiversity

10.1 Sustainable development requires us to ensure that we have a more holistic view of the implications of our decisions, taking account of the full costs and benefits to the economy, the environment and society as a whole, including future generations. This Chapter considers these economic issues in more detail, with particular reference to conserving biodiversity as part of sustainable development.

10.2 Economic activities can adversely affect biodiversity, by using up the resources on which biodiversity relies; by converting resources and habitats to other uses; by polluting habitats and by increasing the risk of impacts from invasive species. This leads to real economic costs including the direct costs of preventing further habitat degradation or of mitigating the effects of habitat loss; the costs of replacing the goods and services biodiversity provides (such as coastal defence, clean water and recreational opportunities) if they are lost. It also leads to indirect economic costs through knock-on effects on other activities and negative environmental impacts in terms of lost future economic opportunities, for example for new drugs or materials from natural sources.

THE ECONOMIC REASONS FOR BIODIVERSITY DEGRADATION

10.3 Whilst the underlying reasons for biodiversity degradation are varied and complex, one of the explanations is market failure:

- The price signal from the market can undervalue biodiversity. This has resulted in allocations of resources that lead to biodiversity degradation
- Economic decision-makers may not take external costs and benefits into consideration. Examples are: nutrient and pesticide pollution from agriculture; point source water pollution;

water abstraction; landfill waste practices; peat extraction and air pollution

- Property rights – In cases where there are no property rights relating to many biodiversity resources, there is less incentive for people to constrain their use, which can become unsustainable (e.g. fishing)
- Information failure: The full value of biodiversity is not known or appreciated so it is not used optimally
- Public Goods – often the providers of biodiversity as a public good are unable to realise the value of such provision

10.3 Biodiversity degradation also arises from policy/intervention failure, such as has arisen from the operation of the Common Agricultural Policy.

BENEFITS OF BIODIVERSITY CONSERVATION AND ENHANCEMENT

10.4 Biodiversity for its part contributes to economic activity and has itself significant economic value. Its benefits to society include:

- Direct benefits such as raw materials for production
- Indirect benefits such as reducing the likelihood of floods, but also through biodiversity's aesthetic, ethical and cultural significance
- Option benefits such as the future possible uses of biodiversity for industrial (including pharmaceutical) or agricultural purposes, some of which are not yet known
- Intrinsic biodiversity values arising from its mere existence, irrespective of the economic, aesthetic or other benefits it provides²⁵

²⁵ English Nature 2002 Revealing the Value of Nature

10.5 Because many of these benefits are not adequately recognised by the market, they are not adequately taken into account by policy and decision makers. So reliably measuring the value of biodiversity in monetary or other terms is important to help determine the most equitable and efficient use of resources.



(Forest Life Picture Library)
Visits to wildlife sites can contribute to local economies

ECONOMIC IMPACTS OF BIODIVERSITY CONSERVATION

10.6 Conserving biodiversity can also have a range of positive impacts on local economies²⁶. For example:

- **Direct employment** in specific nature conservation activities in England is estimated at 8,800 full time equivalent (FTE) jobs
- **Expenditures by conservation organisations**, estimated at £485 million per year at the beginning of the 1990s²⁷, provide revenues and employment for local suppliers and contractors. At that time about 80% of this expenditure was from the public sector
- **Conservation-related schemes** (such as agri-environment and woodland management initiatives) fund work in the wider countryside, and have been shown to support incomes and employment

- Conservation benefits the **tourism sector**, as wildlife, its habitats and landscapes dependent on wildlife attract visitors to rural areas, who spend money on local goods and services. Rural tourism spending totals £12 billion per year in England, and supports 380,000 jobs²⁸. Whilst there are numerous motivations for these visits, local visitor surveys have demonstrated the importance of wildlife in attracting visitors to areas such as the Norfolk and Suffolk coasts, Lancashire and the Forest of Dean

The economic value of cirl buntings

The cirl bunting is now confined to low-intensity mixed farmland in South Devon, but its population has increased following the introduction of special Countryside Stewardship payments in 1992. To assess the economic and social impact of CS cirl bunting agreements, the RSPB undertook a face-to-face survey of participating farmers in 1999/2000. This revealed that the agreements support extra employment totalling more than 6 FTE jobs among local farmers, farm-workers and contractors, with 89% of farmers perceiving that they had increased profitability. The study concluded that as well as benefiting cirl buntings and other wildlife, the scheme had helped to enhance business viability and farmers' optimism about the future.

FUNDING FOR BIODIVERSITY

10.7 The market failures identified above can to some extent be avoided by better regulation and other measures. But, as in the case of other public goods, there is likely to continue to be a need for direct and indirect public funding, justified on account of the public benefits that biodiversity brings. Current central government (including EU) funding for biodiversity in England includes:

- Over £60m per annum by English Nature

²⁶ Rayment M and Dickie I 2001 Conservation Works... for local economies in the UK. RSPB, Sandy

²⁷ CEAS 1993 The Economy of Landscape and Nature Conservation in England and Wales. CEAS consultants report to Countryside Council for Wales, Countryside Commission and English Nature. Unpublished

²⁸ Countryside Agency estimate

Chapter 10
**The economics
and funding of
biodiversity**

- £114m per year rising to £174m in 2006/7 on agri-environment schemes to conserve and enhance the natural beauty and diversity of the countryside
 - Around £8m EC contribution to projects approved under the EU LIFE/Nature programme over the past three years
 - About £64m on research by Defra to develop more effective policies and conservation measures
 - Around £40m on conservation-related activity spent by the Forestry Commission and the Environment Agency
 - Some £1.3m allocated to projects benefiting biodiversity from Defra's Environment Action Fund in the year 2002-03
- The Heritage Lottery Fund; it is estimated that around £66m has been spent on the natural environment
 - The Landfill Tax; It is estimated that around £11m has been spent on biodiversity-relevant projects
 - The Aggregates Tax Sustainability Fund. £5m a year for two years has been allocated to the Countryside Agency and English Nature



(Paul Glendell, English Nature)
HLF funding is helping to restore our heathlands

10.8 To this should be added the significant sums being spent by other public bodies such as the Ministry of Defence, the Highways Agency and local authorities out of their own programmes to deliver biodiversity benefits. This is likely to be an increasingly important element as biodiversity considerations are integrated into all public policies. Other relatively recent but growing sources of funding include:

Biffaward

In the last 5 years one landfill tax credit fund – Biffaward – has supported over 500 projects worth £44m of which more than £12m has gone to community projects that improve the environment. The natural environment has benefited from projects worth £2.8m. To release this money, matched contributions worth £4.4m have been raised from the public and private sectors.

10.9 Biodiversity is an area where the voluntary and private sectors are an important additional source of funding. This reflects the public acceptance of biodiversity as an important public good, and the readiness both of industry to spend money on biodiversity objectives and above all of individual members of the public to contribute directly through their subscriptions, gifts and legacies to conservation bodies. The Wildlife and Countryside LINK group of charities has a combined annual expenditure of about £150m going towards conservation.

ECONOMIC MEASURES FOR BIODIVERSITY CONSERVATION AND ENHANCEMENT

10.10 The Government has sought to address environmental issues using a range of instruments, individually or in combination. These include regulation, voluntary measures and economic instruments to address market failure and to send the right long term signals to help sustainable development. The Treasury's environmental taxation statement of intent²⁹ states that the Government would explore the scope for using the tax system to deliver environmental objectives. The reform of the tax system over time would shift the burden of tax from 'goods' to 'bads', encourage innovation in meeting higher environmental standards and deliver a more dynamic economy and cleaner environment. We shall therefore consider what possibilities might be explored for economic instruments in this area following the examples of the landfill and aggregates taxes.

10.11 Against that background, the main priorities for our programme of work for economics and funding are:

- **To identify the main gaps in biodiversity funding.** To establish the costs of the HAPs and SAPs arising in England, we need to develop country based costs from the UK total prepared originally for the UK Biodiversity Group, to develop our understanding of the regional variation in costs across the country of different land uses and to differentiate between the costs of broad policies and those of actions under the direct control of action plan steering groups. A priority is to do more analysis to understand the costing requirements of the species plans, which were only partially investigated in the original costing exercise
- **To do better at identifying the economic drivers to biodiversity degradation** by better analysis of the factors causing biodiversity losses, with reference particularly to the HAPs and SAPs
- **To ensure that existing government funding programmes do not damage, but instead are used to enhance biodiversity.** This will include seeking to remove perverse incentives in funding programmes which currently lead to biodiversity losses. Examples include the reforms of the CFP and CAP. The sustainability of other EU funding programmes and domestic government incentives will be kept under review. The review of agri-environment schemes should also assist delivery of the HAPs and SAPs and biodiversity as a whole
- **To develop further systems** (including costing and appraisal methodologies and an LBAP funding strategy) to ensure adequate reflection of biodiversity requirements in spending reviews and in local development priorities. In questions of funding, there are invariably a whole range of competing demands for public and private funds that need to be met and any identified gaps in funding for biodiversity will inevitably be part of that competition. So preparation of a robust case is essential
- **To identify and implement the taxation and other measures which will give the right market signals.** We need in particular to explore further use of economic instruments to correct market failures and to prevent biodiversity degradation
- **To improve techniques for the valuation of biodiversity by society and decision-makers.** We shall need: continued development in the design of valuation techniques to ensure they are sensitive to the problems of biodiversity measurement; research on services provided by ecosystems; the development of decision processes to reflect – as far as possible – the full costs and benefits of biodiversity; refined appraisal methods to take account of intergenerational issues and irreversible loss; the inclusion of both quantitative and qualitative aspects of biodiversity in Regulatory and Environmental Impact Assessments and Integrated Policy Appraisal

²⁹ Environmental Taxation – Statement of Intent, HM Treasury July 1997

- **To promote a financial and cultural climate in which funding for biodiversity by the private sector and NGOs is encouraged** and complements that of the public sector. This will require continued close working between public, voluntary and private sectors

Rainham Marshes RSPB nature reserve

Rainham Marshes, about 350ha of grazing marsh on the Greater London/Essex border was acquired by RSPB in June 2001. After years of neglect, RSPB management will restore the site to become London's largest nature reserve. It is a major regeneration project, with many technical problems, but offers great opportunities for community involvement and environmental education.

The project is a good example of how public and other funding can be matched by private contributions to make a huge difference for biodiversity. Rainham Marshes cost £1.1m to buy, using a combination of RSPB membership contributions, the Heritage Lottery Fund and the Cleanaway Havering Riverside Trust (using Landfill Tax credit).

However, this is only the beginning: large-scale habitat restoration, the provision of visitor facilities and establishing education and community outreach programmes will require similarly innovative approaches to future funding for the vision to be fully realised and for ongoing revenue costs to be sustained.

NEXT STEPS

10.12 Much of the thinking in this area is still at a very early stage. **We shall therefore set up a special Economics and Funding Strategy Implementation Group to take the ideas forward.** The programme of action at Appendix 7 sets out the areas of work that will be explored in more detail.

CONSTRAINTS AND UNCERTAINTIES

10.13 The valuation of biodiversity is not a certain science. It has a number of limitations. In particular:

- Biodiversity values do not always represent actual prices and income and hence valuation is approximate and involves many assumptions
- It is impossible to value all biodiversity goods and services, especially certain option and existence values, and they need therefore to be used in conjunction with qualitative data
- The value of biodiversity is unequally distributed between people and over time. Intergenerational considerations are particularly important in the context of valuation and sustainable development, which – by implication – must go beyond the preferences of the current generation to take account of the potential preferences of future generations
- Biodiversity degradation and loss can have irreversible effects. The full risk and ultimate implications of these losses is largely unknown and can never be fully reflected in valuation

TARGETS, MILESTONES AND INDICATORS

10.14 We propose to develop indicators in this sector to measure the direct economic contribution of biodiversity:

- Economic contribution of tourism (E1)
- Numbers of visits to nature reserves in England (E2)
- Sustainable tourism (E3)

Biodiversity and sustainable tourism

Tourism is a large and expanding sector, accounting for between 4% and 5% of the UK Gross Domestic Product, 7% of employment and it is Britain's largest invisible export. Domestic demand is forecast to steadily increase. By some estimates, tourism is now the world's largest industry—in 2000, it generated an estimated \$3.6 trillion in economic activity and accounted for one in every 12 jobs worldwide. There is clearly increasing pressure on our landscape and environmental resources but also more opportunities for enhancing the revenue stream for biodiversity and improving public understanding of conservation issues. The tourism industry increasingly recognizes that the attractiveness of a destination is linked with local distinctiveness and that this distinctiveness owes much to wildlife and natural features

There is also a distinct and growing market in specialist holidays. Although small in comparison to major tourism themes, wildlife and geo-tourism has grown in demand over the last 25 years and this growth is anticipated to continue. In 1998, 20.96 million day visits were made to wildlife attractions in England, with 10 million of these to 232 National Nature Reserves.

The needs of the visitor, local communities and the environment must all be integrated to make tourism more sustainable. To achieve this there is a need to improve access to wildlife and to information about it, to promote accreditation of sustainable providers and to facilitate action for the enhancement of the wildlife resource.

English Nature is leading a Wildlife and Geo-tourism Initiative that is looking at the role of biodiversity (and earth science heritage) in the tourism sector:

The two primary aims of the initiative are:

- 1. To maintain a high profile for wildlife and geological conservation in sustainable tourism development*
- 2. To add value to the work of agencies at national, regional and local level who are addressing rural regeneration through improving sustainable tourism opportunities*

One of the outputs from the Wildlife and Geo-tourism Initiative will be the development of a Tourism Biodiversity Action Plan. This identifies impacts that the tourism sector has on the UK's priority species and habitats and identifies opportunities for improved management or interpretation. It is anticipated that by signing up to a Tourism Biodiversity Action Plan, tourism businesses will be guided through appropriate interpretation and information to enable them to take simple, cost effective action to reduce the impact their business has on its surrounding biodiversity and landscape and contribute to its long term enhancement while enriching the visitor experience.

The engagement of business

VISION

11.1 We want to see business automatically engaging in managing and reporting on biodiversity as an integral part of its processes and activities.

Our aim is to encourage all businesses, from FTSE listed companies to Small and Medium-Sized Enterprises (SMEs), to contribute in positive ways to national biodiversity objectives through:

- Integrating biodiversity requirements into company management systems for all business planning, operations and processes (e.g. emissions to air and water, water use, waste etc)
- Managing landholdings to achieve biodiversity targets, and taking opportunities through planned development to avoid damage to and, where possible, to enhance biodiversity
- Managing supply chain and investment decisions to reduce the risks of indirect adverse impacts and to enhance biodiversity opportunities
- Working in partnership with Local Biodiversity Action Plans
- Participating in the Champions scheme for HAPs and SAPs, which is available to all companies who are prepared to support the 'lead partner' in conserving their chosen habitat or species



(Northumbrian Water)
Using spoil waste to create wetland as part of a £70m improvement to Howden Sewage Treatment Works avoided the need for some 16,000 heavy lorry journeys through the local community and saved £1.152m.

THE NATURE OF THE CHALLENGE

The impact of business on biodiversity

11.2 Business is crucial to the achievements of our targets on biodiversity action plans and SSSIs. English Nature and the Joint Nature Conservation Committee have identified the impacts of the main FTSE sectors on habitat and species action plans (see table below). The involvement of business on designated conservation sites is equally crucial. Overall, companies in 15 FTSE sectors own and/or control 27,000 hectares of land within more than 1450 SSSIs in England. Companies with operations in agriculture, water and wetlands, on the coast and

at sea, in woodlands and forestry, tourism and transport are the most significant in terms of direct impacts on landholdings and indirect impacts through their processes, supply chain and products. Other companies can have indirect impacts, such as financial services companies through loan or investment policies, and retailers, for example through the purchase of intensively farmed agricultural products. But it is not just large companies that have responsibility for protecting the environment and restoring habitats and species. SMEs make up 99.8% of all UK businesses and if each takes some action for nature conservation their overall contribution is potentially huge.

BAP Sector	Main impacts	Relevant FTSE economic sectors
Agriculture	Pollution, intensification, over-grazing and agro chemical use	Food producers and processors; food and drug retailers
Water and Wetlands	Abstraction, drainage and pollution	Water; food producers and processors
Coasts and Seas	Coastal defence works, development pressure, overfishing and pollution	Water; transport; electricity; oil and gas; chemicals; leisure, entertainment and hotels; construction and building materials; food producers and processors; food and drug retailers
Woodlands and Forestry	Inappropriate management	Construction and building materials
Tourism	Visitor pressure and disturbance	Leisure, entertainment and hotels
Transport	Infrastructure development	Transport; construction and building materials

The need for more business engagement

11.3 The Environment, Transport and Regional Affairs Select Committee, in its report on biodiversity in 2000³⁰, drew attention to the need for business to engage more fully in the conservation of biodiversity. Business has been part of the biodiversity partnership for many years, and there are many examples of good practice and engagement, as illustrated by the Case Studies in Business and Biodiversity.³¹ 15 species and two habitats have been supported by companies signing up to the biodiversity Champions scheme and Government and industry have collaborated in the establishment of Earthwatch's Business and Biodiversity Resource Centre. But general appreciation of the need to integrate conservation considerations into all activities as part of an overall move towards sustainable development has been slow to grow.

11.4 In October 2000, the Prime Minister challenged all FTSE 350 companies to produce social and environmental reports by the end of 2001. Defra/DTI reporting guidelines released in November 2001 highlighted biodiversity as an area that most companies would have an effect on and included a few examples of indicators to help companies report. As at July 2002, Defra found that 99 companies were reporting on at least some aspects of their environmental performance, and a further 140 companies made some information about their environmental engagement public.³² While this response has fallen some way short of the challenge, the number of large companies reporting has risen sharply in the face of growing pressure for corporate disclosure not only from Government and NGOs but increasingly from investor groups. Fifty of the largest companies reported on their environmental and/or social performance for the first time in 2001/02, against only 18 new reporters the previous year, (salterbaxter and Context, July 2002)³³. The Government believes that impact on the environment is "first among equals" of a range of factors that every director needs to consider in pursuing a company's business objectives.

The main barriers to business engagement

11.5 A small number of multinationals and FTSE 350 companies are seriously engaged in managing and reporting on biodiversity, but uptake has generally been poor and this is a particular challenge amongst SMEs. The main barriers are:

- Companies do not perceive a coherent business case to invest in management competency and systems to address biodiversity issues, and Board level commitment is lacking
- 'Biodiversity' and the related language of BAPs, HAPs and SAPs are not always easy for business to understand
- Biodiversity is often regarded as a stand-alone issue, rather than an integral part of existing company management systems
- Businesses lack practical tools to aid decision making through clear evaluation of risks and opportunities in relation to biodiversity impacts
- A lack of standardised performance indicators makes it difficult for companies to manage, measure and report on their biodiversity impacts

The business case for biodiversity

"Biodiversity, the variety of life on earth, is an issue of strategic importance to business. At the simplest level, many businesses own and manage land: their actions therefore affect biodiversity and they need to be aware of the regulations protecting it, the risks involved if it is harmed – and the opportunities to act positively. Businesses are also being scrutinised much more intently about their impacts on biodiversity by their stakeholders, not least by investors, employees and local communities. Ignoring the issue may risk negative publicity, poor investment, or even affect the licence to operate". Sir Robert Wilson, Chairman, Rio Tinto plc Risk management

³⁰ UK Biodiversity December 2000 The Stationery Office

³¹ Earthwatch, DETR and Northumbrian Water 2001, Case Studies in Business and Biodiversity

³² DEFRA report to the Prime Minister, available in HoC Library

³³ salterbaxter and Context July 2002. Trends in Corporate Social Responsibility Reporting 2001/02



(Innogy plc)
Site-level action plans can help companies to manage their impacts on biodiversity.

11.6 Environmental incidents, unauthorised water abstraction and pollution can result in prosecution and fines, whilst the presence of designated sites and protected species can affect development proposals. Although the direct costs of non-compliance with biodiversity related legislation are insignificant for most companies, increased requirements for corporate governance and risk management such as the Combined Code on Corporate Governance (1998) are encouraging companies to take account of the risks of potential damage to their reputations and to their licence to operate. A review from the Centre for Sustainable Investment (July 2002)³⁴ offers growing evidence that managing non-financial risks, such as exposure to social, environmental and ethical issues, can materially add to business success.

Competitive advantage

11.7 Companies with good social, environmental and ethical performance are widely considered to be better managed overall and therefore better placed to attract and retain investors, customers, suppliers and employees who share their values. Reporting on a survey of 200 chief executives, chairmen and directors in 10 European countries, Business in the Community (June 2002) found nearly 80% agree that companies which integrate socially and environmentally responsible practices will be more competitive; and 73% accept that

“sustained social and environmental engagement can significantly improve profitability”.

Stable operating environment

11.8 Nature provides water, energy, fuels, raw materials and waste ‘sinks’ for business. Managed wisely, natural systems can mitigate the effects of flooding and pollution and ensure a stable operating environment for business.

Environmental reporting

11.9 Voluntary recognition of the benefits of reporting in terms of increased transparency, and the requirements of the Combined Code and Government pressure are driving an increasing number of FTSE 350 companies to report on the environmental risks they face and the management of those risks. The Government’s response to the Independent Company Law Review has proposed that approximately 1000 of the largest companies should be required to cover environmental policies and performance, where these are material to an understanding of the business, in their annual reports and accounts by publishing an Operational and Financial Review (OFR). It will be for company directors to decide what information is material to their business, but for some businesses the OFR could include disclosure of a company’s policy on biodiversity issues and its performance in managing biodiversity during the financial year to which the OFR relates. The Secretaries of State for the Environment Food and Rural Affairs and for Trade and Industry have agreed to set up an independent group of experts to provide guidance on how directors can assess whether an item should be included in an OFR.

Socially Responsible Investment

11.10 The growth of Socially Responsible Investment (SRI), the Pensions Act 2000, and the Association of British Insurers (ABI) disclosure guidelines 2001 on social responsibility have increased investors’ scrutiny of non-financial performance. A small, but rapidly growing, proportion of fund managers now expect companies to disclose, manage and report on their environmental risks and some will vote against or abstain from the resolution to adopt the

³⁴ Forum for the Future and Co-operative Insurance (CIS) July 2002 Sustainability Pays

Report and Accounts of those that do not. These changes have increased demand from fund managers for reliable environmental performance data to inform their investment decisions. Such investors want:

- Information about the environmental issues which give rise to significant commercial risks and opportunities for companies
- Evidence that companies understand and have effective governance systems for all relevant and significant risks
- Assurance on contentious issues

Managing biodiversity: the role of Company Biodiversity Action Plans

11.12 A company BAP (CBAP) can be a suitable process for managing biodiversity. This means establishing a formal system to manage the company's overall impacts on biodiversity, including management plans for sites in its ownership or control. Local Biodiversity Action Plans provide the context for developing site-level BAPs for company landholdings.

11.13 A CBAP, therefore, requires a company to assess its impacts on biodiversity; places them within the context of local, regional and national targets; sets priorities for action; specifies actions; and measures the impact of those actions. A CBAP can be integrated with a company's Environmental Management System so that impacts on biodiversity will be addressed, minimised and managed appropriately, alongside other broader risks to the environment. Progress can be measured by establishing targets and dates by when these are to be achieved. Examples of targets might be:

- The number of company landholdings at which site-level BAPs are to be implemented. This will include any designated sites or other protected areas, such as SSSIs, which are to be maintained in a favourable management condition
- The proportion, by area, of a company's landholdings for which the company intends to implement a biodiversity management process

A UK-based company's approach to biodiversity

Innogy plc (part of the RWE group) has developed a Biodiversity Framework describing how the company will address biodiversity throughout the business. It explains why the company has decided to take action on biodiversity issues, as well as its commitments. The Framework states:

“Our work on biodiversity forms a key part of Innogy's commitment to integrate the principles of sustainable development into our business.”

Innogy's Biodiversity Framework has three tiers:

- 1. Managing biodiversity within its site boundaries**
- 2. Managing biodiversity impacts beyond its site boundaries as part of its strategy for managing the effects of emissions and discharges**
- 3. Contributing to biodiversity initiatives and organisations more widely**

The company surveyed each of its sites for biodiversity value in the context of UK and local BAPs. Appropriate biodiversity initiatives have been drawn up for each site, with comprehensive Biodiversity Action Plans being implemented at 2 sites in collaboration with local conservation organisations. Innogy is co-funding the UK Business and Biodiversity Resource Centre as part of its commitment to support wider biodiversity initiatives in the UK.

11.14 The national Biodiversity Action Reporting System (BARS), due to be launched in early 2003, will include a framework for Company BAPs to report on their activities so that they can be taken into account in the overall achievement of BAP objectives.

WHAT WE WANT TO SEE AND HOW WE WILL ACHIEVE IT

11.15 **The programme of action at Appendix 8 sets out what we are doing now and what we need to do in the future to tackle these concerns. We will:**

- **Establish a Business and Biodiversity Strategy Implementation Group with public, private and voluntary sector partners to develop and implement the programme of action**
- **Raise awareness and understanding of the business case for biodiversity** so as to achieve policy recognition, engagement and action at Board level within companies with operations in England. In particular, we will promote business engagement through the BiE and BITC Corporate Responsibility indices, develop guidance and training for company boards and environment managers, and provide basic information and web based support for SMEs
- **Encourage the financial services sector to integrate biodiversity performance criteria and standards within investment analysis, especially within Socially Responsible Investment.** In particular, we will invite business organisations and SRI fund managers to help develop a coherent business case and standard performance indicators for managing biodiversity
- **Encourage companies to manage biodiversity, as an integral part of all business planning and operations,** within company management systems (e.g. risk, health and safety, quality assurance, supply chain, sustainability and environmental management). In particular, we will publish a practitioners guide to provide a 'route map' for companies to achieve successful integration
- **Provide advice, simple tools and support** to help companies manage their biodiversity impacts and contribute to nature conservation targets in England. In particular, we will publish guidance on how to prepare a company BAP and work through established business

networks to promote wider adoption of this approach

- **Encourage companies to report annually on biodiversity** as a performance management issue and provide guidance on how to integrate biodiversity in environmental reporting. In particular, we will publish guidance on biodiversity reporting with standard biodiversity performance indicators, and we will work with ACCA to develop a biodiversity category for the UK Environmental Reporting Awards, and a reporting service for companies with land in SSSIs
- **Coordinate business and biodiversity initiatives through active partnerships** between Government, its agencies, companies and NGOs in England. In particular, we will develop guidelines for NGOs seeking to engage with businesses on biodiversity, and we will promote and facilitate company involvement in LBAP partnerships and the habitat and species Champions scheme. We will also highlight case studies of good practice in NGO-company partnerships
- **Identify share and promote good practice.** In particular, we will use the responses to the BiE and BITC Corporate Responsibility indices to identify company 'sector leaders', publish a report and hold a workshop in Autumn 2003 to promote best practice

CONSTRAINTS AND UNCERTAINTIES

11.16 The widespread fall in company share prices since 2000 and more recent concerns about corporate governance and accounting standards may deflect bigger businesses away from addressing biodiversity issues. However, managing environmental impacts is part of good corporate governance so the business case for managing biodiversity impacts as part of sustainable development is arguably stronger in these circumstances.

11.17 More generally, the sheer diversity of business types and the difficulties in reaching SMEs and influencing the supply chain pose significant challenges.

TARGETS, MILESTONES AND INDICATORS

11.18 At company level, there are five key tests of a company's commitment to move towards good practice on biodiversity:

- Formal recognition that the company has a responsibility for managing its impacts on biodiversity
- Integrating biodiversity issues with existing environmental management or sustainability strategies, so that impacts can be minimised and managed alongside other environmental risks
- Developing a formal biodiversity management process, such as a CBAP
- Setting targets and dates by when these actions are to be achieved in ways that will allow progress to be measured
- Reporting progress against targets in the company annual environment or sustainability report

More broadly, the biodiversity indicators proposed for this sector are:

- The condition of SSSIs in company ownership (B1)
- The proportion of expenditure by business on biodiversity (B2)
- The number of companies for whom biodiversity is a material issue which report on their biodiversity performance in annual environmental/sustainability reports (B3)
- Coverage of company BAPs as a contribution to LBAPs (B4)

Education and public understanding

'Experts tend to think that scientific facts are convincing in themselves. Exchange of this type of information does not necessarily motivate people outside these circles. These data are insufficient to change knowledge, attitudes and behaviour. They have to be translated into concepts and messages that appeal to the target audience, are relevant to them and connect with emotional aspects and relate to personal benefits'³⁵

VISION

12.1 A society in which people recognise, value and take action to maintain and enhance biodiversity as part of their everyday lives – in the same way that they might address health issues, the community in which they live, or their economic circumstances.

Our aims are that people should:

- Be aware of biodiversity locally, in England as a whole, and globally
- Understand that most of these issues affect them directly or indirectly; and be aware of their own role
- Understand the close links between the quality of the natural environment and the quality of life, including the economic, social or personal benefits
- Be more knowledgeable about biodiversity so that they can both appreciate it and act to safeguard it



(Peter Wakely, English Nature)
Promoting consumer awareness is a key action in the conservation of limestone pavement – a scarce and non-renewable resource.

³⁵ Mainstreaming Biodiversity: the role of communication, education and public awareness, IUCN, 2002

THE NATURE OF THE CHALLENGE

12.2 There is much evidence to suggest that broad sectors of society have little knowledge of, or direct interaction with, biodiversity or biodiversity issues. Many barriers prevent contact between people and biodiversity which the Strategy must address if it is to be successful. They include:

- Conservation or education projects that treat people as targets rather than as equal, participating partners
- Poor integration of biodiversity into other policies or strategies, for example, as part of broader Community Strategies or local or national economic initiatives
- A perceived lack of relevance to people, including a lack of knowledge of how biodiversity can be marketed effectively
- Limited understanding by many involved in education of the added value of biodiversity education, for example, towards social or broader education goals
- Ineffective communication between biodiversity professionals and educators

12.3 The ultimate success of this Strategy will depend on the extent to which it is accepted and implemented. This in turn will depend on how well it is communicated.

12.4 It is clear, from the support given in this country to wildlife conservation organisations – with UK-wide membership of around 5 million – that there is considerable popular support for biodiversity and nature conservation. This is itself an encouraging base on which to build. Valuable work is already taking place to broaden the

understanding and appeal of biodiversity and to make it relevant to a wider range of groups and communities, in educational establishments, local authorities, museums and voluntary organisations. Much of this is related to direct conservation action on the ground. Other activities may relate to awareness raising or campaigns, for example about endangered species or threatened habitats.



(Andrew Simons, The Wildlife Trust for Birmingham and the Black Country)
Learning about nature can take many forms and involve a variety of settings.

12.5 The Sustainable Development Education Panel has placed ideas about biodiversity firmly within the wider context of cultural, social and economic diversity. Similarly it recognised, as the first of its key concepts, the interdependence between society, the economy and the natural environment and extended these ideas into the rights and responsibilities of people as citizens and stewards of the environment.

12.6 The future development of this part of the Strategy will need to build on what is already happening. The main task will be to identify important gaps and ensure that, through partnerships, the various organisations already working in the field can improve the quality, effectiveness and extent of their influence.

Growing Schools

The successful Growing Schools garden at Hampton Court Flower Show in July attracted many thousands of visitors – parents, grandparents, governors, teachers – to see how the outdoor environment can be used as a learning resource across the curriculum for all ages and abilities at a modest cost. 21 schools – all ‘beacons’ for good practice in sound educational use of school grounds, contributed ideas, created features, grew plants for the garden. The Growing Schools garden is now at Greenwich Environmental Centre, where, together with the website and resource pack, it will remain a living resource for trainee and serving teachers and for LEAs for years to come.

ACHIEVING THE VISION

12.7 A comprehensive strategy to achieve greater public understanding and commitment needs to work at different levels. It involves the dissemination of information, the capacity to create dialogue with and between different sectors of the community as well as more structured education experiences in both formal and non-formal settings. It will only be successful if all those with an interest in biodiversity issues recognise, support and work co-operatively towards its aims:

- Government and government agencies can give a lead, promote a collaborative approach between sectors and help develop a sense of public ownership for biodiversity
- Local government can act both as a link between different groups and organisations, and more directly through its provision of services
- The media can raise public awareness. They can engage a wider spectrum of the public by relating biodiversity to broader issues and, through a more interactive approach, engage them in dialogue
- The many organisations involved in biodiversity education can co-operate to ensure that the experiences they provide are more effective and reach a wider audience
- In the schools sector the National Curriculum’s recognition of links between sustainability and biodiversity gives opportunities to increase appreciation of the educational, social and economic benefits of biodiversity, enhanced by the introduction of Citizenship into the Curriculum from September 2002
- LBAP partnerships can promote understanding and involvement among local organisations, communities and individuals
- The business community can lead by example and promote partnerships

12.8 Appendix 9 sets out ideas for exploration in more detail. They have not so far been developed into a specific programme of action, because more work is necessary to prioritise the needs and develop a clear way forward with partners and stakeholders. **We will do this through the establishment of an Information, Communication and Education Group reporting to the England Biodiversity Group.** The ideas for exploration include:

- Integration of information into other parts of the strategy – e.g. into LBAPS, urban renaissance and the Government’s sustainable Food and Farming Strategy
- Developing media opportunities and improving public biodiversity information networks
- Extending and expanding the links between education on biodiversity and existing educational programmes; and improving communication between biodiversity professionals and educators
- Improving biodiversity education expertise and encouraging partnerships with other sectors such as local authorities and business
- Increasing skills in biodiversity identification, survey and taxonomy
- Extending opportunities for young people to experience biodiversity at first hand through outdoor experiences

Wandsworth School Grounds Biodiversity Action Plan

The London Borough of Wandsworth has held children's fora to feed information into the biodiversity action planning process. The idea initially came from the former mayor of Wandsworth, Chief Cllr Mrs Lola Ayonrinde who made it her Wildlife 2000 Millennium resolution in December 1999.

So far children from Wandle primary school and Balham nursery school have decided upon their favourite animal in the borough – respectively robins and hedgehogs. With the help of the Nature Study Centre, they are now looking at ways to encourage these species and monitor numbers in their playgrounds and wildlife areas. They have become flagship species for a school grounds' habitat action plan for the borough. This identifies targets for species and habitats within school grounds and allows progress to be monitored. This will be the first step towards implementing biodiversity action in schools within the Borough.

12.9 We plan immediately, however, to establish mechanisms for involving children and young people in the development of policy for biodiversity as part of the England Biodiversity Group's implementation of the Strategy. We shall also be open to further ideas and means of involving children and young people, which will also help develop the policies of Defra's Children and Young People's action plan as a whole.



(Paul Glendell, English Nature)
Educational visits to local nature reserves expand children's understanding and appreciation of England's natural heritage.

12.10 In involving children and young people, we shall take account of the following principles:

- Children and young people's experiences need to be enjoyable, informative and memorable to create doorways to more demanding involvement
- The importance of low-cost entry to sites is essential to encourage children and young people to become engaged. They do not often have their own funds to support their interests and parents may not always be willing or able to contribute
- Communication is essential:
 - information needs to be both understandable and accessible without being patronising
 - an understanding of the terminology is necessary before influence and involvement take place
 - the message should always be positive
 - explanation of what is already being done and why, e.g. removal of trees and scrub to restore heathland

Maximum use should be made of new communication technologies, such as by using tailor-made web pages and stronger links between relevant websites.

TARGETS, MILESTONES AND INDICATORS.

The indicator to measure progress in this area will be:

- Volunteer time spent in conservation activity (U1)

Involving children and young people

Many young people place environmental issues high on their list of concerns, there is already an obvious active interest in conservation. The awareness is usually at an international level, for example many children and young people are aware of the threats to rainforests and globally endangered species but they are not aware of the threats to their immediate surroundings nor of the opportunities for making a difference closer to home.

The Government is committed to engaging more effectively with children and young people, involving them more in the planning, delivery and evaluation of policies and services relevant to them. 'Involving Children and Young People: An Action Plan for Defra – Giving Children and Young People a real say in the Defra policies and services that affect them' was published in June 2002. It highlights the importance of taking account of the views of children and young people and identifies Biodiversity as a policy trailblazer. Incorporating the views of children and young people is the opportunity to take a forward-looking approach to the strategy and the conservation of biodiversity for future generations.

Projects involving children and young people that are currently underway include 'The Wildflower Ark Project', National schemes including 'Growing Schools', 'Forest Schools', the 'GLOBE' programme, and 'Wildlife WATCH'. More general schemes such as the Duke of Edinburgh Award and Scouts offer further opportunities through both formal and informal routes.

But it will be important to reach all sectors of the community not just the active young citizens already involved with conservation and those that take part in national schemes and groups. We must find ways of bringing in wider communities and social groups and recognise that concerns will differ across the regions. There will also be issues affecting children and young people in the different work streams of this strategy.

We aim to involve children and young people in the development and implementation of our strategy as well as to raise their awareness of the direct educational, recreational and social benefits of being involved with biodiversity.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Deterioration in the quality of semi-natural habitats as former forms of management are abandoned or replaced with more intensive systems.	(a) The retention and good condition of semi-natural habitats within farming systems. (b) The promotion and reward of appropriate land management techniques that benefit semi-natural habitats, either directly or indirectly.	L – Cross-compliance to prevent overgrazing and damaging supplementary feeding; SSSI designation and management; Countryside and Rights of Way Act 2000; Environmental Impact Assessment (Uncultivated Land and Semi-Natural Areas) Regulations; EU Habitats and Birds Directives. I – Hill Farm Allowance Scheme (HFA); Environmentally Sensitive Areas (ESA) and Countryside Stewardship Schemes (CSS); Organic Farming Scheme (OFS); Woodland Grant Scheme (WGS); Extensification premia; HLF; Wildlife Enhancement Scheme (WES); Environmental Action Fund; National Park management agreements; Assured Food Standards and retailer led assurance schemes.	Review of Defra overgrazing controls. Research on classification of hill land. Sustaining England's Woodlands review. Review of Woodland Creation grants. RSPB research on the effects of land management techniques on birds. Completion of list of candidate SACs. UK Report to the FAO on the state of the nation's Farm Animal Genetic Resources.	Secure new common land legislation – including allowing formal associations to regulate grazing intensity on commons (Defra). All parties to act on the recommendations of the Policy Commission on Farming and Food. All parties work towards favourable condition of SSSIs. Adoption of English Sites of Community Importance, based on UK candidate SAC list (Defra, EN). Press for reform of livestock regimes to decouple production from subsidy and facilitate extensive grazing systems (Defra).	Implement new common land legislation – in particular the formation of statutory associations for self-regulation of grazing intensity on commons (Defra). All parties to act on the remaining recommendations of the Policy Commission on Farming and Food. All parties work towards favourable condition of SSSIs (target 95% by 2010). Implementation of co-funding approaches to management of Natura 2000 sites as agreed with European Commission.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
		<p>A – Codes of Good Agricultural Practice; R&D and knowledge/ technology transfer; FWAG whole-farm advice; RSPB (and other NGO) advice to farmers; Five Point Plan for wildlife friendly farming (EN, NFU); BASC, EN advice to shooting community.</p>	<p>Market-based environmental initiatives (such as “White and Wild” milk, the Surrey Hills brand).</p> <p>Agri-environment scheme review.</p> <p>Research on changes in condition of semi-natural habitats (Countryside Survey 2000 FOCUS project).</p> <p>EN Grazing Animals Projects.</p> <p>Research to determine baseline environmental standards in Red Tractor Scheme (Defra, AFS, Agencies).</p>	<p>Implementation of Water Level Management Plans (Defra and relevant operating authorities).</p> <p>Establish a pilot network of demonstration farms and build on existing networks to disseminate best practice in environmentally friendly farming (Defra).</p> <p>Promote use of Grazing Animals Projects to achieve environmentally sustainable grazing in undergrazed areas (EN).</p> <p>Rationalisation of Government advice streams.</p>	<p>Assist farmers, through incentives and advice, to take advantage of new market opportunities for environmentally sustainable products, following the example of others (e.g. “White and Wild” milk, Surrey Hills brand etc).</p> <p>Continue to develop agri-environmental incentives so that they deliver ever higher environmental farming standards.</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Loss, fragmentation and isolation of semi-natural habitats through agricultural intensification or development.	Preservation, management, restoration, creation and joining up of matrices of semi-natural habitats in a way that will allow wildlife to thrive.	L – EIA Regulations; SSSI designation; EU Habitats and Birds Directives; CROW Act; Limestone Pavement Orders. I – ESAs and CSS; WGS; Farm Woodland Premium Scheme (FWPS); EAF; HLF; National Park management agreements; Assured Food Standards and retailer led assurance schemes. A – Codes of Good Agricultural Practice; Defra-funded free conservation advice; R&D and knowledge/technology transfer; Land Management Initiatives; various Countryside Agency advice streams; FWAG whole-farm advice; RSPB farm advice; Five Point Plan for wildlife friendly farming (EN, NFU).	Priority Habitat Action Plans. Management planning by AONB boards. New guidance for HLF on management of wood pasture and parkland. Tomorrow’s Heathland Heritage (HLF). LIFE projects. Possible establishment of new National Parks. Sustaining England’s Woodlands review. Review of Woodland Creation grant. Agri-environment scheme review. Research on effects of climate change on fragmented habitats (EN MONARCH project).	National Biodiversity Network pilot study in Southwest England to develop inventory of priority semi-natural habitats (NBN). Delivery of AONB management plans (partnerships of LAs, Defra, CA, FC, EN). Review of EIA regulations to ensure they are meeting their biodiversity and other objectives (Defra). South Downs Enhancement Initiative – to achieve long-term restoration of landscape and habitats (partnership of Countryside Agency, Defra, local authorities, various NGOs). EN Lifescapes initiative. Use agri-environment schemes to protect habitats isolated within agricultural landscapes (Defra).	Further develop inventory of priority semi-natural habitats across England (EN).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Loss of important farmland features such as hedges, ponds, ancient trees, and copses (including by removal and neglect).	A reversal of losses of farmland features of value to wildlife and the positive management of all such features.	L – Cross compliance conditions to prevent loss of features on set aside land; Hedgerows Regulations 1997; Tree Protection Orders; SSSI designation; EU Habitats Directive. I – ESAs and CSS; FWPS and WGS; EAF; HLF; National Park management agreements; FWAG Farm Biodiversity Action Plans. A – Defra funded free conservation advice; R&D and knowledge/technology transfer; Land Management Initiatives; various Countryside Agency advice streams; FWAG whole farm advice; RSPB farm advice; Five Point Plan for wildlife friendly farming (EN, NFU).	Consultation on amendments to Hedgerows Regulations 1997 and protection of other countryside features. Agri-environment scheme review. Sustaining England's Woodlands review. Review of Woodland Creation grants.	Amend the Hedgerows Regulations to provide more effective protection of associated biodiversity (Defra). Achieve protection/good management of important farmland features through development of agri-environment schemes and farm advisory services (Defra). Continue to press for reform of livestock regimes to decouple production from subsidy (Defra). Consultation on new planning guidance on nature conservation and biodiversity – PPG9 (ODPM, Defra).	Commission new Countryside Survey, with more analysis of scale of, and reasons for, changes to farmland biodiversity.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Deterioration in the biodiversity value of agriculturally productive land as production methods have changed.	A sustained increase in the biodiversity value of agriculturally productive land.	L – SSSI and other site designation; EU Habitats and Birds Directives. I – OFS, ESAs and CSS; bespoke management plans for set-aside; FWPS and WGS; EAF; HLF; National Park management agreements; Assured Food Standards and retailer led assurance schemes. A – Defra funded conservation advice; R&D and knowledge/technology transfer; Land Management Initiatives; various Countryside Agency advice streams; FWAG whole-farm advice; Five Point Plan for wildlife friendly farming (EN, NFU); BASC/RSPB advice about farmland birds.	Organic Farming Action Plan. Development of the concept of Integrated Farm Management and promotion of the model. Review of current policy strategy for the conservation and sustainable use of genetic resources important for agriculture (Defra). Discussion of draft Council Regulation on conservation of genetic resources in agriculture. UK Report to the FAO on the state of the nation's Farm Animal Genetic Resources.	Secure an appropriate new Council Regulation on conservation of genetic resources important for agriculture. Implement changes in criteria for entry onto the National List of Plant Varieties. Work with Assured Food Standards on inclusion of additional baseline environmental standards within "Red Tractor" assurance schemes (Defra). Continue to review options for reducing contribution of agriculture to climate change (Defra and stakeholders).	Roll out entry level agri-environment scheme and strongly promote uptake by farmers. Investigate impact on biodiversity of changing agricultural practice in response to climate change.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
			<p>Discussion with stakeholders in Forum on Seeds for a Sustainable Environment (FOSSE) and at EC on legislation to permit the marketing of seed conservation mixtures, varieties threatened by genetic erosion and heritage varieties.</p> <p>Discussions in FOSSE on changing balance of value for cultivation and use (VCU) criteria towards more sustainable qualities.</p> <p>Research into relationship between agriculture and climate change.</p> <p>Various local farmland bird initiatives (e.g. the North Wessex Downs project).</p> <p>High Wealds Meadow Initiative.</p> <p>New arable options in CSS.</p>	<p>Promote better environmental management of set-aside, including take up of multi-annual set-aside, and bespoke management plans (Defra).</p> <p>Continue to press for reform of livestock regimes to decouple production from subsidy (Defra).</p> <p>Development of conservation plans for rare sheep breeds in National Scrapie Plan (Defra).</p> <p>Consider biodiversity implications of results of farmscale trials of genetically modified crops.</p>	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
			<p>Research into integration of biodiversity and productive land (e.g. SAFFIE project).</p> <p>Promotion of Integrated Farm Management.</p> <p>Scrapie genotypes survey for rare sheep breed flocks (Defra National Scrapie Plan).</p> <p>Agri-environment scheme review.</p> <p>Strategy for Sustainable Food and Farming.</p>		

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Damage to soil, water and other ecosystems by agricultural pollution, compaction, erosion, pesticides, organic and inorganic fertilisers.	To achieve across all of England's farmland best environmental practice to limit the incidental impact of agricultural practices on wider biodiversity.	L – Water Framework Directive; Nitrates Directive; Water Measures Act 1991; Environmental Protection Act 1990; Clean Air Act 1993; The Control of Pesticides Regulations 1986; Pesticides (Maximum Levels in Crops, Food and Feedingstuffs) (England and Wales) Regulations 1999; The Food and Environment Protection Act 1985; Plant Protection Products (Basic Conditions) Regulations 1997; Control of Substances Hazardous to Health Act 1999; UK Fertiliser Regulations 1991; Freshwater Fish Directive; National Emissions Ceiling Directive and UNECE Gothenburg Protocol; Waste Framework Directive. I – OFS, Farm Waste Grant Scheme; EAF; HLF; Assured Food Standards and retailer led assurance schemes.	Extension of coverage of Nitrate Vulnerable Zones in England to 55% of agricultural land area. Crop Protection, farming and related industries' Voluntary Initiative. Pesticides forum. R&D on enhancement of biological pest control (IACR, CSL, Defra). Strategy for Sustainable Food and Farming. Waste Strategy for England. Follow-up to consultation on soil strategy. Organic Farming Action Plan. Agri-environment scheme review. Sustaining England's Woodlands review.	Monitor effectiveness of Nitrates Action Programme and review measures (Nitrates Directive) (Defra). Development and promotion of Integrated Farm/Crop Management (LEAF). Review of pesticides regime in light of the environmental benefits delivered by the Voluntary Initiative. Deliver improved advice, acting on lessons learned from Defra Knowledge Transfer project. Implement soil action plan. Introduce national soil indicators and monitoring scheme, as envisaged in the national soil strategy (Defra, EA, NSRI).	Implement outcome of Nitrates Directive review in December 2006 (Defra). Ongoing review of soil action plan. Make full use of Rural Development Regulation to ensure it provides an adequate framework for national measures (Defra). Publish and consult on river basin management plans and complete related planning and monitoring work (Defra).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
		<p>A – Codes of Good Agricultural Practice; Defra free advice on Nitrate Vulnerable Zones; Farm Manure Management Plans; Organic Conversion Information Service; Controlling Soil Erosion pack; Fertiliser Recommendations for Agricultural and Horticultural Crops; British Survey of Fertiliser Practice; Landcare Partnership (EA lead); R&D and knowledge/technology transfer; FWAG whole farm advice; river catchment management plans; Five Point Plan for wildlife friendly farming (EN, NFU).</p>	<p>Second consultation on the Water Framework Directive. Cross cutting review of diffuse pollution of waters by agriculture. Ammonia Strategy. Publish Water Policy Document, including strategic vision for the future (Defra).</p>	<p>Complete the review of agri-environment schemes, to include 'broad and shallow' scheme options that include resource protection. Complete Transposition of Water Framework Directive. Expansion of advice schemes on river catchment projects (EA, EN, FWAG). Establish a pilot network of demonstration farms to disseminate best practice in environmentally friendly farming (Defra). Amend Fertiliser Regulations to take account of forthcoming EC Regulation on fertilisers. Review impacts of atmospheric enrichment on agricultural system.</p>	<p>Publish and consult on River Basin Management Plans by December 2008 and complete related planning and monitoring work (Defra) by 2009.</p>

NOTES:

1. The table does not include actions that are intended to deliver UKBAP habitat and species action plans (though many of the above actions will contribute to delivery of action plans.)
2. Other than the "Red Tractor", the tools column does not include specific details about the wide range of commercial marketing methods and retailer incentive schemes, of which there are too many to list.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Integrated Catchment Management.	Biodiversity integrated into whole catchment management.	L Water Framework Directive.	Drafting regulations. Consultation on Annexes II and V (Defra).	River basin characterisation of impacts and pressures takes full account of water related needs of Natura 2000 sites and risk of significant damage to wetlands (EA, EN). Consider development of pilot river basin sub-plans taking account of biodiversity at the catchment scale incorporating agri-environment possibilities where appropriate (EA, EN).	Pilot sub-plans linking BAP targets and River Basin Management Plans (EA, EN).
		P Defra Water Policy Document.	Being developed.	Principle of establishing integrated catchment management, with progress towards BAP targets (Defra).	Implementation (Defra).
		P Existing Environment Agency Plans and Strategies.	Implementation and review.	All plans and strategies actively promote integrated catchment management and delivery of BAP targets (EA).	Implementation (EA).
		P Habitat Action Plans for additional water and wetland types.	3 additional wetland HAPs recommended.	Habitat Action Plans for ponds, active shingle rivers, oligotrophic lakes, considered in the light of HAP reports in 2005 (UK Partnership).	Drafting and implementation of new HAPs as decided by UK Partnership.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Pollution.	Water quality targets developed and met for priority BAP habitats and water and wetland SSSIs.	L Urban Waste Water Treatment Directive. L IPPC Directive.	Forthcoming review of Eutrophic Sensitive Areas.	Review of Eutrophic Sensitive Areas uses appropriate water quality standards developed for statutory sites and priority habitats (EA, Defra).	Implement appropriate controls on waste water discharge. (EA, Water Companies via PRO 4).
		L Nitrates Directive.	Review of Nitrate Vulnerable Zones (NVZs) (Defra).	NVZ programme integrated with nutrient targets for statutory sites and priority habitats (Defra). Adequate policing and monitoring of NVZ regulation (EA).	Continue programme.
		L Water Framework Directive.	Drafting regulations. Consultation on technical Annexes II and V (Defra).	Package of measures (eg regulatory, fiscal and incentives) to address agricultural and other diffuse pollution (Defra). Development of technical basis for establishing and measuring good ecological status for water habitats (Defra, EA).	Prepare for implementation of measures (Defra, EA).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
		L Habitats and Birds Directives.	Ongoing Review of Consents, plus wider measures to achieve favourable conservation status (EA).	Agreement of water quality standards (including nutrients) for all water and wetland SACs, SPAs and Ramsar sites (EA, EN, Defra).	Implement measures to meet standards (EA, Defra).
		L CRoW Act.	Agreed protocol and procedures (EN, EA).	Agreement of water quality standards for SSSIs. Requirements included as a driver in PRO4 (EA, EN, Defra).	Implement measures to meet standards in accordance with PSA targets for SSSIs by 2010 (EA, Defra).
		Defra Diffuse Pollution Strategy.	Consultation phase (Defra).	Introduce measures to tackle organic diffuse pollution affecting water and wetland habitats, to be included in agri-environment, farm standards and the Strategy for Food and Farming (EA, EN, Defra).	Implement Strategy (Defra, EA).
			Research to support decision-making (Defra, EN).	Continue to implement pilot Eutrophication Control Action Plans (ECAPs) and refine toolkit and control measures (EA).	Establish success of ECAPs (EA).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Abstraction.	Water quantity requirements developed and met for all priority water and wetland habitats and used for condition assessment of relevant SSSIs.	National Environment Programme in Water Industry Investment Programme.	AMP 3 implementation. Development of PRO 4 programme.	Water quality standards established for statutory sites and priority habitats as a driver for funding in PRO 4 (Defra, EN, EA). Prepare for PRO 5.	Implement the PRO 4 national environment programme (Water companies, EA). Prepare for PRO 5.
		L Water Bill.	Bill awaiting parliamentary time (Defra).	Water Bill to improve mechanisms that allow more sustainable water resource management (Defra).	Implementation of Bill. (Defra, EA).
		P Restoration of Sustainable Abstraction Programme.	Under development (EA).	Investigation work to establish work programme (EA, EN).	Implementation on priority sites (EA).
		L Water Framework Directive.	Drafting regulations, consultations on Annexes II and V (Defra).	Development of technical basis for assessing, monitoring and classifying condition of water environment, including water quantity (Defra, EA).	Prepare for implementation of measures to achieve good ecological status (EA, Defra).
		National Environment Programme in Water Industry Investment Programme.	AMP 3 implementation. Development of PRO 4 programme.	Water quantity requirements for statutory sites and priority habitats included as a driver for funding in PRO 4 (Defra, EN, EA).	Implement the PRO4 national environment programme (Water Companies, EA). Prepare for PRO 5.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
		<p>P Water Resources Strategies.</p>	<p>Annual roll-out of strategies (EA).</p>	<p>Incorporate environmental needs associated with BAP targets for wetland protection, enhancement and creation into assessments of future water demand scenarios (EA).</p>	<p>All strategies with BAP needs in scenario planning (EA).</p>
		<p>P Catchment Abstraction Management Strategies.</p>	<p>Being implemented (EA).</p>	<p>CAMS consider environmental water needs of priority species and habitats, including habitat creation options where practicable (EA).</p>	<p>BAP targets for wetland habitats and species are key consideration in developing part of CAMS (EA).</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Water Level and Flood Management.	Water and wetland habitat conservation is promoted in all policies, plans and projects controlling water level and flood management activities.	L Habitats and Birds Directives. L CRoW Act.	Compliance with regulations (EA). Agreed protocols and procedures (EA, EN).	All operating authorities complying with Habitats Regulations (EA, BW, IDBs, Local Authorities, Water Companies, Coastal Protection Authorities, EN). All operating authorities complying with CRoW Act obligations for SSSIs (EA, IDB, BW, local authorities, Coastal Protection Authorities, EN).	Continuation to achieve net gain in priority water and wetland habitats.
		P Ramsar Convention.	Policy line agreed (Defra).	Compliance with UK obligations in Ramsar work plan (Defra, EA, EN, IDBs).	Review of progress (Defra).
		P High-level targets for BAP habitats.	Being implemented.	All operating authorities taking action to achieve high-level targets on water level management plans and biodiversity (EA, IDBs, local authorities).	BAP targets for wetland habitats and species are key consideration in developing part of CAMS (EA).
		P Review of Flood Defence Administration and Funding Regimes (Defra, EA, Flood Defence Committees, IDBs).	Consultation finished, Government response awaited (Defra).	Implement recommendations that encourage more effective approach to sustainable flood management (Defra).	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
		<p>P Catchment Flood Management Plans.</p>	<p>Currently being developed (EA).</p>	<p>Fluvial strategies within CFMPs identify contribution to BAP targets, including wetland creation (Defra, EA, local authorities).</p> <p>Develop non-statutory river habitat objectives (EA).</p> <p>CFMPs promote sustainable solutions, based on the relationship between land-use, flood risk and diffuse pollution, and delivered through catchment planning (Defra, EA, IDBs).</p>	<p>Net gain for wetland conservation (Defra, EA).</p>
		<p>P Water Level Management Plans.</p>	<p>First round of plans virtually complete, but most not yet implemented (EA, IDBs, local authorities).</p>	<p>Continue implementation, if necessary with additional financial measures on SPA, SACs, Ramsar sites and SSSIs (Defra, local authorities, RFDCs).</p>	<p>Seek to have all remaining WLMs implemented.</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Invasive species.	A programme of prevention and management measures for non-native invasive species established and funded.	L Wildlife and Countryside Act. P Defra review of non-native species.	Updated schedules (Defra). Review under way (Defra).	Updated schedules. Integrated implementation of necessary review group recommendations on: legislation, responsibility, funding, campaigns, management and research (Defra).	Revised legislation (Defra). Effective measures and programmes funded and implemented (Defra).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
The protection of woodland, particularly ancient and urban woodlands and ancient trees, from external threats from industry, development and surrounding land use.	Pests addressed at a landscape scale (where appropriate).	Research (R).	Deer Initiative and guidance on establishing Deer Management Groups.	Increase awareness of damage and loss caused by deer, rabbits and squirrels; promote Deer Management Groups and explore new sources of funding (e.g. in relation to reducing road accident costs) (FC, Deer Initiative). Raise awareness of the need for deer and squirrel control via agri-environment schemes (FC, Defra). Research into alternative methods of reducing squirrel damage (FC).	Review the funding and objectives of the Deer Initiative (Defra, FC).
Increased understanding of the implications of climate change on woodland and associated species.	MONARCH project outputs (R). FC report on impacts of climate change on UK forests (May 2002).	MONARCH project outputs (R). FC report on impacts of climate change on UK forests (May 2002).	Research programme on climate change and impacts on wildlife.	Continue research into the likely impacts of climate change on woodland communities and species (MONARCH partnership). Investigate the use of landscape-scale condition and connectivity indicators (FC, Woodland Trust). Continued development of the UK Phenology Network (Woodland Trust, CEH).	Provide advice on woodland management and creation designed to increase resilience of species likely to be particularly vulnerable (FC, EN).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Provision of more advice to planning authorities and better monitoring of losses to development.	Planning system (L).	<p>Planning Green Paper, Regional Planning Guidance.</p> <p>EN's role as statutory consultee on SSSIs and FC's as non-statutory consultee on ancient woodland.</p>	<p>Advice and copies of AW Inventory sent to all planning authorities covering the value of AW and the risk of direct and indirect impacts on AW (FC, EN, Woodland Trust); pilot monitoring of losses of AW to development (EN, FC).</p> <p>Implement relevant recommendations from review of impacts on local wildlife sites.</p>	Ensure woodlands are adequately covered in Regional Biodiversity Audits and Strategies (FC, EN).
				<p>Seek incorporation of better protective policies into local, structure and regional planning guidance. (and into mineral plans (FC, ODPM, GOs, LAs).</p> <p>Investigate ways of incorporating woodland pasture into the AW Inventory (FC, EN, Woodland Trust).</p> <p>Increase awareness of the value and vulnerability of ancient trees (EN, Woodland Trust, Tree Register).</p>	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Reduced impacts on woodland from surrounding agricultural practices.	Agricultural production support regimes and agri-environment schemes (I), Codes of Good Agricultural Practice (A).	Agri-environment schemes currently under review.	Protection of woodland from adjoining agricultural practices promoted under agri-environment schemes (Defra, FC). Establish measures of over-grazing in woodland and promote them (FC, EN, Defra).	Ensure agri-environment and other agricultural support measures contribute to securing acceptable levels of grazing within woodland (Defra).
	Improved consideration of pollution and other indirect impacts on woodland biodiversity.			Increase awareness of impacts on woodland of wider Government policy (e.g. energy and transport) (Green Ministers, FC, EN, NGOs).	
The conservation & enhancement of the biodiversity of native woodland particularly ancient semi-natural woodland and wood pasture.	Improved information on the state of native woodland, including wood pasture.	ENSIS data on woodland SSSIs. Forestry Commission's National Inventory of Woodland and Trees (A). Countryside Survey 2000.	Analysis of structural data on ancient woodland within NIWT. Reconciliation of NIWT digital map with Ancient Woodland Inventory.	Establish and trial methodology for condition assessment of ASNW (FC, EN). Assessment of long term changes in woodland flora in '1971 Bunce plots' (All parties). Analysis and publication of the results of FE's assessment of its ancient woodland (FC).	Rolling programme of condition assessment, as part of, or linked to, NIWT (FC, FR). Ensure woodland incentives are matched to the threats identified.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
	Increased proportion of woodland under approved management/protection (recognising that minimum intervention may be appropriate in some situations).	<p>Various grant schemes (I).</p> <p>Direct management of publicly-owned forests.</p> <p>Designations (Natura 2000, SSSIs, LNRS, scheduled ancient monuments) (L).</p>	<p>Incentives for woodland creation and management currently being reviewed.</p> <p>Implementation of new protection and procedures under the CROW Act.</p>	<p>Improve the incentives for native woodland management through the current review of incentives (FC).</p> <p>Investigate incorporation of some basic woodland and wood pasture management or protection into agri-environment measures (Defra, FC).</p> <p>Obtain more information on the aspirations and needs of owners whose woodland is not under WGS (FC).</p> <p>Investigate ways of developing the contracting sector to increase capacity and develop skills appropriate for native woodland (FC).</p> <p>Improve access to UKWAS for small woods (FC).</p> <p>Extend application of native woodland planning (FC).</p>	<p>Target advice to owners of native woodland who are not currently within WGS (FC, FWAG, Defra, RDS).</p> <p>Develop grant packages that are attractive and not daunting to such owners (FC, RDS, FWAG).</p> <p>Make AW Inventory data and information on relevant HAPs and SAPs available via 'whole farm plans' (EN, Defra, FC).</p> <p>Consider resources for woodland management under mid-term review of ERDP (Defra, FC).</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Guidance on habitat management (based on sound research) disseminated.	Outputs of various research projects into species requirements.		Research habitat management issues and the requirements of priority and other key species (e.g. song thrush, barbastelle bat) (FC, EN). Woodland Birds monitoring project and associated research on possible underlying causes (FC <i>et al</i>). Increase recognition of the importance of ancient trees in other habitats (e.g. heathland, grassland).	Disseminate results via academic papers, technical publications, promotion to woodland owners and managers. (NERC, FR, FC).
	Revised incentives which are closely matched to BAP actions and reflect true cost.	Various grant schemes (I). Direct management of publicly-owned forests. Designations (Natura 2000, SSSIs, LNRs, scheduled ancient monuments) (L).	Incentives for woodland creation and management currently being reviewed. Implementation of new protection and procedures under the CRoW Act.	Subject to the outcome of the current review, seek to provide adequate incentives for the private sector, and funding for FE, for costly actions to maintain habitat, improve condition or provide for priority species (FC-WIGs, FE).	Ongoing.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	New policy on conservation of ancient woodland and promotion of restoration of PAWS.		Research into restoration techniques and priorities.	Develop policy and strategy for Ancient Woodland conservation and restoration; publish Forest Practice Guide; research restoration techniques (FC, FE, FR). Commence PAWS restoration programme on the FC estate (FE). Better understanding of the conservation of genetic resources, and where appropriate facilitate greater use of local planting stock (FR, FC).	Introduce incentives for restoration in private woodland; consider additional funding for large-scale restoration programme on the FC estate (FC, FE).
	Increased area of new native woodland to complement and reinforce existing woodland.	Woodland Grant Scheme, Farm Woodland Premium Scheme (I). Direct management of publicly-owned forests.	Incentives for woodland creation currently being reviewed.	Revise woodland creation schemes in the light of the review. Assess effectiveness of JGSAW 'defragmentation' grant scheme (FC).	Increase scope for FE to purchase land near existing properties to create landscape scale habitat networks (FE). Evaluate the extent to which woodland beyond the establishment phase is fulfilling its potential (FC).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
The conservation of wider biodiversity at a landscape scale.	Enhanced priority habitats and species within areas of non-native woodland, including conifer plantation and SRC.	Direct management of publicly-owned forests – Forest Design Plans. Various woodland incentives. (I).	Incentives for woodland creation and management currently being reviewed.	Seek adequate incentives and funding for the creation and management of non-woodland habitats within plantations in both FC and private woodland (FC, FE). Target incentives to delivery of local and national BAP priorities (FC, Defra).	Research the implications for biodiversity of the design and management of open ground and mature forest habitats within large forests (FC, EN, Defra, NERC).
Forestry playing a positive role in delivery of non woodland HAPs and SAPs.		England Forestry Strategy.		Publish GB guidance ; and develop England policy and practice for forest removal to create non-woodland habitats (FC). Develop control procedures and agri-environment incentives to cover re-creation of open-ground habitats following deforestation (Defra, FC). Secure core and external funding for re-creation of non-woodland habitats and ‘modernising’ the public forest estate to enhance delivery of HAPs and SAPs (FE).	Develop Regional priorities as part of Regional Expressions of the England Forestry Strategy (FC, GOs). Monitor success of deforestation and re-creation policy (FC).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Woodlands and trees complementing other habitats, at a landscape scale, and providing for non-woodland species.	Woodland Grant Scheme, Farm Woodland Premium Scheme (I). Agri-environment Schemes (I). Outputs of various research projects into species requirements.	Incentives for woodland creation and management currently being reviewed. Agri-environment schemes currently under review.	Seek to ensure the reviews of FWPS/WGS and agri-environment schemes: a) recognise the inter-relation between woodland and other habitats; b) protect existing semi-natural habitats from inappropriate woodland creation; c) target habitat creation and extensification measures to buffer and link native woods and enhance wood pasture (FC, Defra). Pursue closer integration of woodland and agri-environment incentives (e.g. provision of grants for small woods via agri-environment schemes) (FC, Defra, RDS). Research on habitat networks at a landscape scale, including isolation/connectivity (FC/FR, NERC, Defra, Woodland Trust). Provide greater input to development of Local BAPs (FC).	Ensure adequate funding of agri-environment measures which will complement woodland habitats under the mid-term review of ERDP (Defra, FC).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Inadequate recognition of forestry's potential as one of the best examples of sustainable development.	Better evidence on the environmental services and non-market benefits of trees and woodland.	Research.	Research and pilot projects into the role of woodland in headwaters and floodplains.	Research to quantify and value non-market benefits of woodland: urban regeneration, rural economy, flood prevention and alleviation (FR, FC). Consider role of woodlands in pilot sub-plans for river basin management plans (FR, FC).	Seek to establish pilot area(s) where the effects of woodland creation on water catchments (headwaters and floodplains) can be examined (FC, EA).
	Appropriate public funding for the non-market benefits of woodland.	Woodland Grant Scheme, Rural Enterprise Scheme, Community Forests, National Forest and National Urban Forestry Unit (I).	Incentives for woodland creation and management currently being reviewed.	Investigate development of incentives (WGS, agri-environment, Rural Enterprise Scheme) which could provide environmental services (FC, EA, <i>et al</i>). Funding for FE which recognises the range of public benefits provided (FC).	Introduce any such incentives (FC, Defra).
	Recognition of the sustainably and low environmental impacts of forestry.	UKWAS Certification and FSC labelling (I).	'Wood for Good' campaign. Development of UK Indicators of Sustainable Forest Management (SFM).	Identify the potential contribution of woodlands to wider Quantity of Life indicators (FC).	Ongoing monitoring of SFM indicators. Promotion of timber as a renewable product and energy source (FC, DTI, Defra).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Promote active management by improving the economic viability of woodland management.	Woodland Grant Scheme (I).	Incentives for woodland creation and management currently being reviewed.	Development funding for new uses for low-value/high volume timber (e.g. wood fuel) and high value products, through a Harvesting, Marketing and Processing Grant under the ERDP (FC, Defra). Promotion of timber into higher end uses (FC, DTI, ODPM).	Investigate ways of promoting woodland based enterprises not based on timber production (FC). Evaluate effectiveness of new incentives, e.g. Harvesting Grant (FC).
	Widened opportunities for sustainable forestry to be part of formal education and life long learning.	Forest Education Initiative Advice (A)		Develop a policy framework for education and learning under the England Forestry Strategy.	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Increase the role that woodland plays in enhancing people's quality of life.	Increased high-quality public access to woodland.	Direct management of publicly-owned forests. Woodland Grant Scheme (I). Research.	Annual Management Grants for woodland open for access.	<p>Assessment of existing access, particularly to AW and SNW; identify priority areas for new access (FC).</p> <p>Investigate 'low-key' access arrangements which leave more control with the owners (FC).</p> <p>Seek funding to enhance visitor facilities, and mitigate impacts, in well-used areas (FC, FE).</p>	<p>Develop new support mechanisms for public access to existing woodlands (FC).</p> <p>Provide incentives for the creation of woodland in areas of high demand (FC).</p> <p>WIG/Rural Enterprise Scheme/Reserve Enhancement Scheme for interpretation and wildlife observation facilities (FC, Defra, EN).</p>
Greater awareness and recognition of the health benefits of woodland recreation.	Greater awareness and recognition of the health benefits of woodland recreation.	Research. FC Policy (P).		<p>Develop closer links between FC and NHS/Primary Care Trusts (FC).</p> <p>Improve evidence base of benefits of woodland recreation for health (FC).</p> <p>Promote awareness of health benefits with a focus on government's priority areas (FC).</p>	<p>Awareness campaign amongst health professionals and providers of woodland access (FC).</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Increased local involvement in woodlands and biodiversity.	LBAPs (P/A).	Ongoing input to LBAPs at local and regional levels.	Promote increased LBAP coverage and provide local inputs and national guidance on woodland and forestry aspects to ensure 'dove-tailing' with national action plans (Defra, local authorities, FC). Facilitate public inputs to woodland management through improved Public Register and consultation procedures (FC). Support practical involvement through Tree Wardens, Wildspace!, voluntary conservation work, and 'Friends of groups' (FC, EN). Support established community groups through development of the Community Woodland Network (Woodland Trust/Defra).	Pursue opportunities for incorporation of woodland issues into Community Strategies (FC, local authorities). Promote initiatives involving data gathering by members of the public (e.g. 'citizen science' projects) and recognise the critical value of amateur experts (FC).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Improved public awareness of the link between woodlands and wood products.	UKWAS Certification and FSC labelling scheme (I).	'Wood for Good' campaign.	Ensure forests and woodland products are part of wider agricultural initiatives to 'reconnect people with the countryside' (Defra, FC). Support uptake of UK Woodland Assurance Scheme for all woodland types (FC – pilot, UKWAS Steering Group). Evaluate impact of UKWAS on forest management and challenges to compliance (FC). Explore the desirability of promoting local timber and food labelling schemes including the role of produce from wood pasture in <i>Eat the View</i> (FC, Countryside Agency).	Support for local marketing and awareness initiatives e.g. woodfairs (FC, FE). Promote wider awareness and understanding of woodland (Woodland Trust).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Urban renaissance Ensuring biodiversity as an integral part of the urban renaissance.	Biodiversity protection, conservation and enhancement objectives in regeneration guidance. Recognition of the role of natural green spaces in ecological functioning in new national and regional policy. Biodiversity targets in SRB and other regeneration funding schemes.	L W&C Act 1981. Local Government Act 2000. T&CP Act 1990. P Urban White Paper (2000) Local Strategic Partnerships. Urban Green Spaces Taskforce. Community Strategies. Planning Green Paper (2001). Planning Obligations consultation paper (2001). PPG3, PPG17, PPG9, PPG25. A <i>By Design</i> (DTLR, CABE, 2001). <i>Quality of Life Capital</i> (CA, EA, EH, EN). <i>Planning for Biodiversity</i> (RTPI, 1999). <i>Developing Naturally</i> (ALGE, EN, 2000). Black redstart advice note (London Wildlife Trust, EN, BTO, 1999). Role of statutory agencies, VCOs, etc.	Creekside Environment Project, Deptford. Castle Manor Estate, Sheffield Wildlife Trust. <i>Changing Places</i> , <i>Changing Lives</i> , Groundwork London. Creative Spaces tool-kit, Architecture Foundation. <i>Green Gateway</i> , (Thames Chase Community Forest, NUFU, 2002). <i>Black redstart: 2nd advice note</i> (EN, London Wildlife Trust, LBP, 2002). Urban Wildlife Partnership. Sustainable Cities Campaign.	Seek links with English Partnerships, BURA, CABE and others to promote best biodiversity and environmental practice (EN, EA, Defra). Provide guidance to CABE for greater ecological approaches to regeneration guidance (EN, EA). Recognise urban issues in PPG9 revision (ODPM, EN, Defra). Pilot urban regeneration and biodiversity projects within each RDA region and sample of Core Cities (ODPM, WTs, BURA, EN).	Progress pilot urban regeneration and biodiversity projects within each RDA region and sample of Core Cities. Publish guidance for regeneration practitioners (EN, EA). Promulgate best practice (EN, EA, WTs, Defra).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Planning Ensuring that biodiversity is integrated into the planning system.	New planning legislation and guidance underpinned by SD objectives. Planning obligations providing for positive planning linked to biodiversity objectives. New developments that build in biodiversity through planning regulations and/or dissemination of good practice.	L W&C Act 1981. T&CP Act 1990. CRoW Act 2000. P Urban White Paper (2000). Local Strategic Partnerships Urban Green Spaces Taskforce. Community Strategies. Planning Green Paper (2001). Planning Obligations consultation paper (2001). PPG3, PPG17, PPG9, PPG25. A <i>Planning and Biodiversity</i> (RTPI, 1999). <i>Quality of Life Capital</i> (CA, EA, EN). <i>Environmental Planning</i> (Royal Commission on Environmental Pollution, 2002). <i>Living Spaces</i> (RSPB, 2002).	<i>Planning and Biodiversity</i> (RTPI, 1999). <i>Quality of Life Capital</i> (CA, EA, EN). <i>Living Spaces</i> (RSPB, 2002). <i>Natural Communities</i> (EN, RSPB, WTs, 2002). <i>Sustainable Communities</i> (WHO, 2002).	New planning legislation and guidance to be underpinned by SD objectives reflecting the core objectives of the Strategy. Planning decisions taking account of protection for designated sites, and contribute to key HAPs and SAPs (ODPM, EN, Defra, planning authorities). Revised PPG9 to set clear framework for planning policies to protect, conserve and enhance biodiversity, including in urban areas (ODPM, Defra). Issue of good practice guide to accompany revised PPG9 (ODPM, EN, Defra).	Promulgate and exchange good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Brownfields Recognising the biodiversity value of brownfield land and potential to contribute towards regeneration.	Biodiversity conservation and enhancement as an element of brownfield development. Key brownfield biodiversity species conserved through site protection, mitigation and habitat creation. Understanding and acceptance of how brownfields can make a positive contribution to the 'green' elements of urban regeneration.	L T&CP Act 1990. W&C Act 1981. P PPG3 definition in respect of 'naturalised' brownfields. PPG9 in respect of urban sites. PPG17 in respect of brownfields providing open space resource. I Entrust. BOC Foundation for the Environment. A <i>Changing Places</i> (Groundwork, 1996-2001). <i>Planning and Biodiversity</i> (RTPI, 1999). EcoRegen toolkit (Groundwork/CURE, LIFE). Regeneration-UK. BrownfieldsSites.com Sapling.org	<i>Creative conservation</i> (Urban Wildlife Partnership/Landlife, 1999). <i>Brownfield</i> , Red Data (EN, 1999). <i>Brownfield? Greenfield?</i> (London Wildlife Trust, 2002). <i>Greening for Growth</i> (Northumberland). NERC URGENT research programme. Urban Wildlife Partnership. Landlife's Creative Conservation. UK Trust for Derelict Land (CURE, 2000). NATO/CCMS Pilot Study (EA). Entrust. BOC Foundation for the Environment. Barclays SiteSavers.	Provide specific guidance to English Partnerships and CLAIRE for sympathetic brownfield development (EN). Undertake mitigation projects to evaluate best practice (EP, Gwk, EN, ALGE). Assess and publish advice for conserving brownfield biodiversity (EN, EP). Promote biodiversity and open space benefits of urban brownfields through publications, advice and advocacy (EN, EP, WTs, Gwk). Co-ordinated advocacy approaches to English Partnerships, CABE, BURA and others (EN).	Promulgate and exchange good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Construction and new development Ensuring biodiversity is enhanced as a consequence of development and building design.	Biodiversity conservation and enhancement objectives in new developments. Natural green spaces and wildlife features provided as part of new development. Biodiversity targets in house-building and other developer schemes. The use of SUDS as standard practice for new build in all areas.	L W&C Act 1981. T&CP Act 1990. CRoW Act 2000. Building Regulations 2001 (Part H). P PPG3, PPG9, PPG17, PPG25. BR Approved Document H. A <i>By Design</i> (CABE, 2001). <i>Design compendium</i> (Housing Association and Llewellyn Davies, 1999). <i>Planning for Biodiversity</i> (RTPI, 1999). <i>Quality of Life Capital</i> (CA, EA, EH, EN). <i>Developing Naturally</i> (ALGE/EN, 2000). Local authority guidance for planners and developers (e.g. <i>Biodiversity Checklist for Land Use Planners in Cambridgeshire and Peterborough</i> , 2000).	<i>Building for Nature</i> (SEEDA). Creekside Environment Project, Deptford. Great Notley Garden Village, Countryside Homes. Pirelli car-park, Belvedere (Groundwork Kent Thames-side). Materials Information Exchange (BRE). CABE, BURAs, Civic Trust Regeneration Unit. DTI Partners in Innovation construction research programme.	Consider Building Regulations and sustainable building criteria (EN, BRE). Wildlife training and biodiversity indicators developed for construction CIRIA projects funded by DTI (EN, DTI). To identify species especially reliant on urban environments and the potential for positive planning, establishing links, corridors and stepping stones through new development (EN). Pilot development and biodiversity projects within each RDA region linked to regional and LBAP targets.	Progress pilot development and biodiversity projects within each RDA region linked to regional and LBAP targets. Promulgate and exchange good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
		<p><i>Sustainable Urban Drainage Systems</i> (EA, 1999).</p> <p><i>Sustainable Urban Drainage Systems: design manual for England and Wales</i> (CIRIA 2000) best practice manual (CIRIA 2001).</p> <p>Protected species guidance notes (various).</p> <p>I</p> <p>Green Leaf Awards.</p> <p>Civic Trust Awards.</p> <p>BURA Awards.</p> <p>ODPM Urban Regeneration Awards.</p>			

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Green buildings and architecture Maximise opportunities to improve the biodiversity performance of new buildings.	Green buildings designed and constructed as standard practice for all new build, with low impact, use of renewables, green roofs, SUDS, earth sheltered buildings and other systems.	<p>P <i>By Design</i> (CABE/DTLR, 2001).</p> <p>A <i>Design compendium</i> (Housing Association and Llewellyn Davies, 2000). CIRIA, M4I, Sustainable Housing, BioRegional, EcoRenewal database.</p> <p>I BCI Awards. Biffaward. Green Leaf Awards.</p>	Sustainable Urban Drainage Systems (EA). Green roofs report (EN, 2002). BedZed, London (Peabody Trust/BioRegional). Hockerton Housing Project, Nottingham. Creekside Environment Project (Laban Dance Centre, Seager Building). Ecological Design Association. Association for Environment Conscious Building. British Earth Sheltering Association.	Undertake additional green roof research (EN). Hold green roofs conference (EN, LI, CABE). Promotion of green roof benefits through publications, advice and advocacy (EN, EA, BRE, CIRIA, CABE). Identify links of green roofs to SUDS (EN, EA). Specific biodiversity features in new green buildings (BioRegional, Peabody Trust, HBF). Make links to green building business.	Promulgate and exchange good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Parks and urban green spaces Ensuring biodiversity as an integral part of parks, playing fields and other urban greenspaces. Multi-functional role of green spaces linked to urban renaissance.	Parks to be managed with biodiversity conservation as a core principle, but not necessarily a primary aim. Principal urban parks linked to LBAP objectives. Relevant parks and urban green spaces protected and managed as local wildlife sites. Peat use phased out, pesticide use significantly minimised, water conservation measures in place. Ecological skills resident in all LPA parks departments. BVPI for parks linked to biodiversity targets. Residents within 300m of nearest natural greenspace, wherever possible.	L NP&AC Act 1949 (NNR, LNRs). T&CP Act 1990. P PPG17. A <i>Best Value for Biodiversity</i> (ALGE, 2001). <i>Nature Areas for City People</i> (London Ecology Unit, 1990). I Green Flag Awards. HLF Urban Parks Fund. NOF -EN Wildspace! for LNRs. BTCV People's Places. CA Doorstep Greens. UK MAB Urban Forum Award.	Urban Green Spaces Task Force: <i>Green Spaces, Better Places</i> (2002). 5 Working Group Reports. University of Sheffield research. PPG17 review. Urban Parks Forum. Green Flag Awards. Urban Wildlife Partnership. UK MAB Urban Forum Award for Excellence. Local Nature Reserves. EN's Accessible Natural Greenspace Standards. Landlife's Creative Conservation. Best Value. Local BAPs. Parks etc HAPs in LBAPs. URGE (Development of Urban Greenspaces to Improve the Quality of Life in Cities and Urban Regions, EU (2001-4)).	Local authority green space audits and strategies with links to BAP targets (ODPM, EN, Defra). Incorporation of biodiversity into work of the Urban Green Spaces Steering Group and follow up (ODPM, Defra). Local authority greenspace standards take account of EN's ANGSt (EN, ODPM). ANGSt piloted within 10 urban LAs (EN). Biodiversity in parks guidance produced (EN, Urban Parks Forum). Increase of Green Flag Award applications to 500 within 5 years and winners to 350 (GFA, Civic Trust). Increasing level of community managed spaces ('Friends of') working with LAs and others to raise local 'ownership' (UPF, GFA, Civic Trust).	All LA green space audits and strategies linked to BAP targets. Urban Green Spaces policy development emphasises biodiversity conservation as a core management principle. Increase of Green Flag Award applications to 750 within 10 years, and winners to 700 (GFA, Civic Trust). Promulgate and share good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Cemeteries and churchyards Realisation of the biodiversity potential of cemeteries and churchyards.	Cemetery and churchyard management linked to BAP objectives.	L Various burial legislation.	Burials & Cemeteries Advisory Group (HO).	6 LNR cemeteries, and 3 Green Flag Award-winning churchyards and/or cemeteries within 3 years (EN, LGA, GFA, Civic Trust).	10 LNR cemeteries and 6 Green Flag Award-winning churchyards and/or cemeteries within 5 years.
	Growth in woodland and other environmental burial practices.	P PPG17. A Living Churchyards & Cemeteries Project. <i>Paradise Preserved</i> (EH, EN, 2002).	National Federation of Cemetery Friends. Woodland burials. Local Nature Reserves.	Guidance provided on woodland burial practices (NUFU, EN, HO). LC&CP revitalised and developed (HO–B&CAG). Further detailed management guidance produced and disseminated (EH, EN).	LC&CP further developed. Promulgation and exchange of good practice.
Transport corridors Realisation of the biodiversity potential of railway linesides, canal towpaths and roadway verges.	Transport corridor management linked to BAP objectives.	L W&C Act 1981.	Railtrack East Anglia BAP.	HABAP implementation (HA).	Promulgation and exchange of good practice.
	Development along transport corridors not leading to loss of or damage to statutory and other important wildlife sites.	P PPG9, PPG17. A Highways Agency BAP (HABAP).	Wild Linesides (Railtrack, London Wildlife Trust). Highways Agency BAP (HABAP). London Waterways Partnership.	Engagement of Network Rail into BAP objectives (EN, Defra, DfT, Network Rail).	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Gardens, allotments and gardening Development of potential for wildlife sensitive gardening.	Continued growth of wildlife gardening and consequent enhancement of biodiversity in urban and suburban areas. Sustainable gardening approaches adopted. Increased participation in 'citizen science' feeding into LRCs and LBAP monitoring. Key 'backland' garden mosaics and allotments protected through planning policy (LPFs). Sale of problem exotic garden plants tightly controlled with guidance from garden centres. Greater understanding of the role of gardens for biodiversity at landscape level.	L T&CP Act 1990, e.g. Tree Preservation Orders, Conservation Areas, 'backland' policies. W&C Act 1981, e.g. Schedule 9. P PPG3, PPG9, PPG17. A Numerous publications.	BTO Garden Bird Survey Big Garden Birdwatch, Homes for Birds, Avon Wildlife Trust Bristol Birdwatch. BC Garden Butterflies Count. PTES Great Stag Hunt. Wildlife Trusts' wildlife gardening work. Froglife London Pond Doctor. Urban Wildlife Partnership. Federation of City Farms & Community Gardens. NERC URGENT research programme (e.g. BUGS). New housing gardens project (CONE, HBF). LBAP garden HAPs. Peat Working Group. Pesticide Disposal Strategy (PAN-UK). Review of non-native species.	Continue, develop and disseminate BUGS and other garden biodiversity research (NERC/URGENT, EN, WTs, Defra). Strengthen 'citizen science' surveys to NBN and LRCs (WTs, EN, BTO, etc). Research of impacts of front garden and backland garden mosaic development (NERC, EN). Development of alternative growing media through Growing Media Working Group (Defra, WRAP, GMA).	Continue, develop and disseminate garden biodiversity research (EN, Defra, WTs). Promulgate and exchange good practice. Emergence of the use of suitable alternative growing media by retailers, consumers and gardeners.

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School grounds Realisation of the potential for biodiversity improvements in school grounds.	Schools to be encouraged to develop their grounds to include wildlife areas/gardens, and/or natural features where appropriate. Schools are also encouraged to make use of their school grounds as an 'outdoor classroom' for all subjects and for children of all ages. Schools are encouraged to involve pupils in all aspects of school life, including management of school wildlife areas where they exist.	A Learning through Landscapes. WATCH. EcoSchools. I National Curriculum. Growing Schools. Growing Schools demonstration garden Greenwich, launch spring 2003.	Learning through Landscapes. CEE. EcoSchools. WATCH. Citizenship part of Core Curriculum from September 2002 (KS 3 & 4). Good practice work in key sites, e.g. Gillespie Park LNR, The Hawthorns, Castle Eden Dene NNR. The 21 schools who contributed to the prize winning school garden exhibited at this year's Hampton Court Flower show.		

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Social inclusion and live-ability Biodiversity as part of the quality of life.	Better local environments for people in LAs in Indices of Deprivation. Local renewal schemes for residential areas, estates, etc. to have biodiversity components. Increased provision of trees and greenspace in hard built environments. Environmental and biodiversity proofing within SEU and NRU remit.	A Social Exclusion Unit. Neighbourhood Renewal Unit. Groundwork. Reconciling Environmental and Social Concerns (Joseph Rowntree Foundation research programme). I Environmental Task Force.	Environmental justice programme in SEU. Changing Places (Groundwork). <i>Environments for All</i> (BTCV). Black Environment Network. Green Gym (BTCV). Sheffield Wildlife Trust's Manor & Castle Estate regeneration work. Bolton Wildlife Project (Lancashire WT). Urban Wildlife Partnership. Trees for London. <i>Green Streets</i> (Manchester). EN's Accessible Natural Greenspace Standards.	CP and Efa programmes developed in new areas linked to BAP objectives (ODPM, GwK). EN's ANGSt piloted in 5 areas of high deprivation (EN). SEU and NRU to pilot 'green live-ability' schemes (ODPM, GwK).	CP and Efa programmes developed in new areas linked to BAP objectives (ODPM, GwK). SEU and NRU to pilot 'green live-ability' schemes (ODPM, GwK). Promulgate and exchange good practice.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Health Recognising and reinforcing the links between biodiversity and health.	Local GPs prescribing walks and conservation activities in local greenspaces, LNRs, etc. LNRs and other sites linked to local Health Trust and Health Action Zone programmes, and actively hosting 'health' activities.	A Green Gym (BTCV). Walking the Way to Health (CA).	BTCV Green Gym. CA Walking the Way to Health. National Urban Forestry Unit health conferences and publications. Healthy Schools. NERC URGENT/DoH health conference September 2001. <i>Health and Environment in Sustainable Development</i> (WHO, 2001).	Establish series of Green Gym programmes on 50 LNRs and other nature reserves (BTCV, EN, WTS). Establish series of Green Gyms linked to key HAP objectives (BTCV, EN, Defra, WTs).	Further develop Green Gym initiatives (BTCV).
Invasive exotic species Controlling the negative and reinforcing the positive aspects of non-native species.	A better way of managing and living with non-native species. Greater understanding and promotion of the positive benefits that many exotic species provide.	L W&C Act 1981. A <i>Japanese Knotweed Manual</i> (2000). Invasive species leaflets (EA) <i>Guidelines for the control of Japanese knotweed</i> (WDA, 1991).	Invasive Species database (EN, University of Liverpool). Defra review of non-native species.	Implement review recommendations in relation to urban areas, as appropriate. Promote greater understanding of the positive benefits that many exotic species provide (Defra, EN, EA).	Promulge and exchange good practice.

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Management of the wider maritime environment				
Integration of policies across the full range of marine sectors to deliver sustainable management.	Defra Review of Marine Nature Conservation (RMNC).	Development of strategic goals and objectives for marine nature conservation. Commencement of Regional Seas Pilot Scheme in the Irish Sea.	Complete the RMNC Regional Seas Pilot Scheme and publish the final report(s) (JNCC).	Consider the outcomes of the Review of Marine Nature Conservation and applications to future policy (Defra).
Development of an ecosystem-based approach to environmental management.	Marine Stewardship Report (MSR) – <i>Safeguarding Our Seas</i> (Defra). OSPAR. 5th North Sea conference.	Published June 2002. OSPAR developing tools for application of ecosystem approach.	Continue development in co-operation with OSPAR (Defra and all Partners).	Apply ecosystem-based approach (Defra and all Partners).
Development of a simplified planning and regulatory system for managing and protecting the maritime environment.	Policy review.	DFT review of development in coastal and marine waters.	Implement changes arising from the review ensuring that opportunities for pursuing biodiversity objectives are included (Government Departments).	As 1-3 years.

The coasts and seas ('Maritime' in this table refers to the marine and coastal zones)

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Management of the wider maritime environment (continued)				
Integration of biodiversity objectives into planning policies.	EU ICZM recommendation. Planning Policy Guidance Note 7 (PPG 7) – Countryside and Social Development. PPG 9 – Conservation. PPG 17 – Recreation and Tourism. PPG 20 – Coastal Planning. PPG 25 – Development and Flood Risk. LGA “Living at the Edge”.	DFT review of development in coastal and marine waters. Revision of PPG20.	Initiate audit of biodiversity objectives in coastal plans. Revision of PPG 20 and PPG 9 to include biodiversity objectives (ODPM, Defra).	Increased monitoring and auditing of biodiversity targets in implementation of plans.
Incorporation of biodiversity objectives in flood and coastal defence policy.	Flood and coastal defence policies, guidance notes and procedures eg. PPG 20 – Coastal Planning and PPG 25 – Development and Flood risk. Shoreline Management Plans (SMPs). EU Habitats and Birds Directives.	Establishment of high level targets for flood defence operating authorities. Wider consultation and more strategic planning. Increasing financial support for safeguarding EU Habitats Directive sites. First round of plans prepared. Increasing use of geomorphology and links with socio-economic drivers to guide strategy development.	Increase the incorporation of longer-term goals and biodiversity objectives into sustainable management. Increase the application of knowledge on coastal processes to flood and coastal defence planning. Review all plans to see if environmental objectives are set and whether they are being met (Defra, EN, local authorities, EA).	Develop land use plans to indicate coastal areas liable to flooding or erosion within 50 years and which restrict coastal development to sustainable, stable areas. Clear environmental targets defined for inclusion in SMPs.
Coastal Habitat Management Plans. (CHaMPs).	Coastal Habitat Management Plans. (CHaMPs).	Pilot CHaMPs in preparation with identification of environmental objectives.	CHaMP process evolving to provide clear biodiversity objectives (Defra, EN, EA, EC).	Continue to develop CHaMPs and share information with EC and other Member States (Defra, EN, EA, EC).

The coasts and seas ('Maritime' in this table refers to the marine and coastal zones)

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Management of the wider maritime environment (continued)				
Delivery of maritime habitat and species action plans.	17 HAPs. 79 SAPs.	Ongoing work towards the delivery of the targets in the individual HAPs and SAPs through members of the UK Marine BAP Co-ordinating Group.	Produce policy guidance on the implementation of BAP (including HAPs & SAPs) outlining the responsibilities of agencies. Develop mechanisms to tackle the cross-cutting issues between maritime plans and between maritime and terrestrial HAPs and SAPs. Develop guidance and a post-review implementation plan.	Assess progress against targets and review work programme. Implement plan.
Development and use of wider partnership approaches to delivering policy objectives.	Advisory notes on coastal and estuary planning. Experience from existing ICZM plans. Marine Stewardship Report.	Majority of plans established with objectives and indicators. Sustainable development as overall objective. MSR next steps consultation.	Increased move towards actions that incorporate biodiversity objectives. Increased use of partnership to identify and deliver opportunities.	As 1-3 years.
Conservation of commercial fish stocks and reduction of fisheries impacts on non-target species including marine mammals and birds through the integration of environment and fisheries policies.	Common Fisheries Policy (CFP) Review 2002. EC Biodiversity Action Plan for Fisheries.	Encourage fundamental reform, including Member State control out to 12 nautical miles and a reduction in fishing effort (Defra) Review of Sea Fisheries Committees activities (Defra). 'Pingers' to deter cetaceans at fish nets currently being trialled (Defra). Development of Pinger Alert device for future use (TWT).	Implement the revised EU Common Fisheries Policy. Continue to influence the proposals outlined in the European Commission's CFP roadmap. Develop further no-take zones (Defra, EC, EN, Member States).	Implement the revised Common Fisheries Policy. Reduce fishing effort and the capacity of the fishing fleet in English waters and implement other measures to promote long-term sustainability. Take forward proposals for a planned implementation of no-take zones to aid fish stock and marine habitat recovery as necessary.

The coasts and seas ('Maritime' in this table refers to the marine and coastal zones)

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Management of the wider maritime environment (continued)				
Implementation of international agreements that further the conservation of biodiversity.	ASCOBANS. EU Habitats Directive. EU Wild Birds Directive.	Resolution no.3 Incidental Take of Small Cetaceans (2000).	Preparation and implementation of a national bycatch response strategy (Defra).	National Bycatch Response Strategy and action plan designed to reduce bycatch of protected species to levels that do not threaten their conservation status (Defra).
	Convention on Biological Diversity Jakarta Mandate.	Development of scientific advice on marine and coastal protected areas (MCPAs) for the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) to consider in March 2003.	Ensure agreement reached on MCPAs at SBSTTA.	
EU's 6th Environment Action Programme proposal for an EU Strategy for Sustainable Development – Marine element.	OSPAR Convention for the Protection of the Marine Environment of the Northeast Atlantic, 1992. Annex V on the Protection & Conservation of the Ecosystems & Biological Diversity of the Maritime Area, & related Appendix 3, 1998.	EC proposal for a thematic strategy for marine protection and conservation.	Contribute to the development of the thematic strategy for marine protection and conservation and develop a shadow plan for implementation.	Contribute to implementation of EU thematic strategy.
		OSPAR work on priority species and habitats, EcoQOs, habitat classification and mapping, and Marine Protected Areas. UK hosting workshop on mapping methods and classification categories.	OSPAR agreement of first set of EcoQOs and list of priority habitats and species. OSPAR adoption of habitat classification and mapping proposals.	Adoption of measures to protect priority species and habitats.

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Site and species protection A coherent legal and administrative framework for nature conservation in the marine and coastal environment.	<i>EU Wild Birds Directive.</i> <i>EU Habitats Directive.</i>	Developing inshore Natura 2000 network. Developing criteria for offshore Natura 2000 network. Development of Regulation 33 advice under the Habitats Regulations and increasing guidance from Relevant Authority Groups on the appropriate management of sites for “favourable condition”. Establishment of management schemes and shadow management schemes for European Marine Sites.	Manage and monitor European Marine Sites (competent authorities). Consult on and introduce regulations to implement the Birds and Habitats Directives in the 12-200 nm zone (Defra). Identify and propose sites in the 12-200-nm zone. Implementation of management schemes for European Marine Sites, working towards favourable condition of these and SSSIs (Defra, EN, JNCC).	Continue implementation of management schemes and working towards favourable condition. Review achievement of conservation objectives. Manage and monitor European Marine Sites (competent authorities).
	Policy reviews. ICZM.	Defra Review of Marine Nature Conservation – Regional Seas Pilot Scheme in the Irish Sea. DFT Review of development in coastal and marine waters. ICZM stock-taking of legislation actors etc in the coastal zone.	Continue Irish Sea pilot and other reviews and assess emerging findings (Defra, JNCC).	Consider reviews and pilot project findings, taking forward recommendations (including proposals for legislation) as appropriate (Defra, JNCC).

The coasts and seas ('Maritime' in this table refers to the marine and coastal zones)

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Site and species protection (continued)				
Management of alien/invasive species.	Wildlife and Countryside Act 1981. EU Habitats Directive. Policy review.	EU work on non-indigenous species at global level. Defra policy review of non-native species – report being finalised.	Consideration of review recommendations appropriate to marine environment (Defra).	Implementation as appropriate of review recommendations relevant to marine environment (Defra).
	International Maritime Organisation (IMO).	IMO Guidelines for the control and management of ships' ballast water	Control & Management of Ships' Ballast Water & Sediments Convention (draft due 2003) (DfT, Defra).	Continue development of ships better designed to handle ballast waters.
	ICES Code of Practice on Introductions and Transfers of Marine Organisms.	10 year review due 2002.		
Addressing the knowledge gap				
Targeted research, survey and monitoring to provide the knowledge required to inform decisions and support the ecosystem-based approach to management of the marine environment.	Research on coastal processes eg. Estuaries Research Programme (ERP). Research on maritime structure and function by universities and research institutions.	Increasing research outputs into form and function of coasts and coastal habitats ERP Phase I complete, Phase II in progress. Research into endocrine disruptors. OSPAR research.	Develop effective links between maritime managers and key research establishments (Defra, English Nature, NERC). Develop links between plans, research and biodiversity needs. Develop scientific approaches that ensure existing and new information is being used effectively by planners and managers.	Implement appropriate research projects and programmes. Ensure that effective monitoring is in place to ensure that we can learn whether our predictions of cause and effect are accurate and can inform future work (all maritime managers).
	International Council for the Exploration of the Sea (ICES).	Fisheries research, management and adoption of ecosystem approach.	Research informs ecosystem approach.	

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Climate change Increased understanding of the impacts of climate change on maritime habitats and species.	UK Climate Impacts Programme. Research and monitoring	MONARCH, REGIS and MarClim (Marine Biodiversity and Climate Change) projects. Research into impacts of climate change on coastal processes.	Ensure that existing long-term biological data is integrated with climate change models to make predictions of the changes in maritime diversity as a result of global warming (Defra, EN). Ensure that knowledge of the impacts of climate change on coastal processes and biodiversity increasingly driving objectives of coastal plans.	Ensure that the implications of climate change are included in maritime planning decisions.
Reduction of Pollution from anthropogenic sources Improved monitoring of the water quality of maritime areas.	Habitats and Birds Directives.	Working to transpose the Directive into UK law through the preparation of draft Regulations.	Development of objectives and identification of river basins for establishment of river basin plans (Defra, EA, EN).	Implementation of the Directive through the establishment of river basin plans and sub-basin plans at a catchment scale (EA, Conservation Agencies, Defra). Continuation of EA consents review programme.
		Review of consents.	Identify water quality requirements for SACs and SPAs through the development of conservation objectives and feed through into the EA review of consents process (Defra, EN, EA).	

The coasts and seas ('Maritime' in this table refers to the marine and coastal zones)

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Reduction of Pollution from anthropogenic sources (continued)				
	IMO Convention on the Control of Harmful Antifouling Systems on Ships (adopted Oct 2001) (Hormone Disrupting Chemicals).		Ratify Antifouling conventions (DfT).	Implement measures in antifouling conventions.
Oil and gas exploration and development.	Pollution Prevention and Control Act 1999. Petroleum Act 1998. Prevention of Oil Pollution Act 1971. EU Habitats Directive. EU Wild Birds Directive.	Draft Statutory Instrument – The Offshore Chemicals Regulations 2002 (DTI) Establish R&D programme to inform evidence-based policy Establish Monitoring Committee	Revision of Prevention of Oil Pollution Act 1971 (DTI). Continue to develop Strategic Environmental Assessments of UK Continental Shelf (DTI). Develop systems for monitoring wide area impacts (DTI). Continued development of evidence-based policy responses (DTI).	Finalise SEA programme Consider need for further controls on atmospheric emissions.
Shipping.	EU Directive (2000/59/EC) on port reception facilities for ship generated waste and cargo residues. Marine Environmental High Risk Areas (MEHRAs) – DfT.	Implement the Directive, supplementing the UK's existing port waste management planning regime. Methodology & site selection under consultation.	Apply the UK secondary legislation governing port waste reception facilities (DfT).	Apply secondary legislation (DfT). Review and consider changes as necessary (DfT).

Priority Policy Issue (including desired outcomes)	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Reduction of Pollution from anthropogenic sources (continued)				
	International Convention for the Prevention of Pollution from Ships 1973/78 (MARPOL).	Apply MARPOL provisions which are in force.	Apply MARPOL provisions which are in force (DfT).	Apply MARPOL provisions which are in force (DfT).
Providing a comprehensive mechanism for liability and compensation for pollution from ships.	Protocols to the Civil Liabilities Convention (CLC) and International Oil Pollution Compensation Fund Convention; Hazardous and Noxious Substances (HNS) Convention 1996; Bunkers Convention 2001.	Develop an international supplementary ("third tier") oil pollution compensation regime through the IOPC Fund.	UK to ratify the HNS Convention and Bunkers Convention (DfT).	Apply the relevant international regimes (DfT).
Ensuring co-operation between neighbouring states in planning for and responding to major pollution incidents.	International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (OPRC).	Co-operation with neighbouring states e.g. through the Bonn Agreement.	Continue with co-operative arrangements. UK to ratify the 2000 (HNS) Protocol to OPRC (DfT).	Continue with co-operative arrangements (DfT).

Local and regional action

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
<p>Managing the process: Taking Stock</p> <p>The efficient operation of local and regional biodiversity processes and structures to contribute to national objectives and local priorities.</p>	<p>1. Delivery of local and regional biodiversity objectives by strong, inclusive partnerships with a long-term vision and stability for the future,</p>	<ul style="list-style-type: none"> – LBAP Partnerships. – Regional Partnerships. – UK BAP Website. – National Officers. – England Local Issues Group (ELIG). 	<ul style="list-style-type: none"> – LBAP Practitioners meet regularly in all regions and London. – Regional Processes operate in all regions and London. – National Officers and ELIG work to identify good practice and ways of attaining strong, active partnerships and sustainable processes across England. – UKBAP Website maps up-to-date coverage of LBAPs and regional processes. 	<p>Assess the contribution of current local and regional activities to Strategy's objectives and identify areas for further action. Promulgate this assessment as a guide to current and projected local and regional action. (EBG, local and regional partnerships, GOs).</p> <ul style="list-style-type: none"> – Maintain and enhance where necessary direction and outputs of local and regional biodiversity processes. – Issue national guidance on models for effective partnerships. (EBG). 	<ul style="list-style-type: none"> – Implement actions identified to deliver this Strategy at the local and regional level (regional and local partnerships). – Monitor and review delivery of the objectives of this Strategy at the local and regional level. (regional and local partnerships).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	2. Local and regional activity taking place at appropriate geographical scales and complementary to national plans and programmes.	<ul style="list-style-type: none"> - Biodiversity Action Reporting System (BARS) - Experience of local and regional biodiversity partnerships - Lead Partner Network - ELIG - National Co-ordinators (EN, Defra, WTS). 	<ul style="list-style-type: none"> - Preliminary discussions of roles for different administrative levels of biodiversity process in ELIG, local practitioners groups, regional partnerships . - Close liaison between regional and local networks and analysis of their roles has been undertaken in some regions (e.g. SW, NW, WM, SE, EM). - 'Biodiversity Working in the English Regions' makes recommendations for the role of regional partners in biodiversity and ways of linking with LBAPs. - 2002 BAP reporting round designed to include LBAP progress and support analysis of respective roles. 	<ul style="list-style-type: none"> - Produce guidance and best practice on scale and roles of Local and Regional processes (EBG local and regional networks). - Promote and develop delivery of recommendations from 'Biodiversity Working in the English Regions' (EBG, L and RSIG Regional Fora, GOs). - Encourage the development of biodiversity position statements of key partner organisations operating at the local and regional levels (EBG, Regional Fora). 	<ul style="list-style-type: none"> - Review scale and role of local and regional processes (L and RSIG with local and regional partnerships).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3-5 years) and key actors
			<ul style="list-style-type: none"> – Initiatives for improving links between LBAPs and Lead Partners started, e.g. LBAP Workshop, and 2002 Lead Partner Workshops. Preliminary contact made with Lead Partners to pilot approaches on linking with LBAPs. – Position statements drafted by key organisation (e.g. LGA, EN). 	<ul style="list-style-type: none"> – Develop ways of effective joint working between lead partners and LBAPs (e.g. sharing of work programmes). Ensure good practice is shared and guidance issued to biodiversity practitioners at all levels as appropriate (EBG, Lead Partners, Local Partnerships). 	
	<p>3. The widespread exchange of easily-accessible information, good practice and guidance about local and regional biodiversity activities.</p>	<ul style="list-style-type: none"> – EBG and its sub-groups (ELIG) – National Officers – Lead Agencies. 	<ul style="list-style-type: none"> – Work of ELIG – National co-ordination and facilitation in place, providing: <ul style="list-style-type: none"> Support and advice to LBAP practitioners and partnerships. Dissemination of case studies. Interpretation of new national policies and guidance. 	<ul style="list-style-type: none"> – Ensure roles, structures and working methods. Strategy implementation groups promote, support and co-ordinate local and regional contributions (EBG). – Ensure a common understanding of the future of local and regional biodiversity processes, is shared by key partners (EBG). 	<ul style="list-style-type: none"> – Review the success of Strategy implementation groups in terms of delivery at the local and regional levels. Make any adjustments necessary (EBG).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Target Setting, Reporting and Monitoring Measurement of the achievements of local and regional biodiversity action.	1. Local and regional priorities and targets that are informed by national BAP targets and priorities and vice versa.	<ul style="list-style-type: none"> - Biodiversity Action Reporting Systems (BARS). - Local Record Centres. - NBN. - Targets review processes (targets group, BIG). - National recording schemes. 	<ul style="list-style-type: none"> - Some regional and local partnerships are examining how far local, regional and national targets align. 	<ul style="list-style-type: none"> - Set up iterative process of target review such that local, regional and national targets and priorities are mutually informed and align more closely where this is not currently the case (begin this process in year 1 of the Strategy) (EBG, local and regional partnerships). 	<ul style="list-style-type: none"> - Ensure local and regional targets are fully reflected in the 2005 targets review (EBG). - Review how far local and regional priorities and targets are informed by national BAP targets and priorities and vice versa (EBG).

Local and regional action

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	<p>2. An effective means of reporting and monitoring local and regional progress.</p>	<ul style="list-style-type: none"> - BARS - LBAP partnerships (including local record centres). - Corporate reporting systems (e.g. EN, FC, RSPB, EA, etc). 	<ul style="list-style-type: none"> - Development of BARS underway – including local pilots and workshops. - Questions for 2002 reporting agreed and designed to inform future reporting using BARS. Local biodiversity partnerships will be able to report nationally for the first time. 	<ul style="list-style-type: none"> - Collate and fully analyse LBAP activity in the 2002 reporting round. Use this information and trends identified to further shape the development of this Strategy (JNCC). - Establish BARS as an effective web-based reporting system for appropriate local and regional biodiversity action reporting, analysis and information (JNCC). - Provide support, training and guidance in using BARS at the local level (EBG, JNCC). - Clarify and disseminate guidance on role of LBRCs and NBN in BAP reporting (LBRCs, NBN, EBG, JNCC). 	<ul style="list-style-type: none"> - Clear and cost effective reporting requirements for national, regional and local processes in time for 2005 reporting round (EBG, JNCC).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	<p>3. A Set of regional and local biodiversity indicators to track progress on delivery of the local and regional work programme.</p>	<ul style="list-style-type: none"> - Quality of Life indicators (and other sets). - PSAs. - HAP/SAP targets. 	<ul style="list-style-type: none"> - UK Biodiversity Indicators forum has recently met to share experiences on use of biodiversity indicators at all levels. - Audit Commission has produced voluntary set of Quality of Life Indicators on Biodiversity. - PSA agreed with Essex County Council on biodiversity performance. - ALGE have produced Best Value and Biodiversity Guide. - RPG monitoring guide on biodiversity is under preparation. - Biodiversity targets have been widely used in RPG. 	<ul style="list-style-type: none"> - Establish set of local and regional indicators to promote objectives and track progress of this Strategy (EBG). - Disseminate examples and promote use of good practice relating to existing and evolving indicators and biodiversity measures (EBG, Audit Commission). 	<ul style="list-style-type: none"> - Review progress of local and regional indicators. Where necessary revise the set to reflect achievements and new circumstances (EBG).

Local and regional action

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
<p>Integration The contribution of local and regional action to national biodiversity objectives.</p>	<p>The effective contribution of local and regional action to the aims and objectives contained in the agriculture, woodland and forestry, water and wetlands, marine and coastal and urban and development chapters of this Strategy.</p>	<ul style="list-style-type: none"> – Experience of local and regional biodiversity partnerships. – Biodiversity Duty on Ministers and Government departments under s74 of Countryside and Rights of Way Act 2000. 	<ul style="list-style-type: none"> – Local and regional partnerships have produced functional and cross-cutting approaches demonstrating biodiversity as part of sustainable development. <p>Examples:</p> <ul style="list-style-type: none"> – Local and regional biodiversity objectives successfully used as tools for integration of biodiversity with sectoral activities at the local level. 	<ul style="list-style-type: none"> – Promote the development and use of cross-cutting themes (L and RSIG, SIGs, local and regional partnerships). 	<ul style="list-style-type: none"> – Review local and regional delivery of objectives in agriculture, woodland and forestry, water and wetlands, marine and coastal and urban and development. Where necessary set in place mechanisms to support delivery required by any new circumstances (EBG, SIGs, L and RSIG, local and regional partnerships).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Integration of biodiversity into local and regional policies and programmes.	Biodiversity integrated into Local Authority activities and in particular as part of the preparation and implementation of Community Strategies and recognition of local biodiversity objectives in planning policies.	<p>Local Authority Functions:</p> <ul style="list-style-type: none"> – Community Strategies – LA21 – Best Value – Planning & Site Safeguard (local wildlife sites) – Land Management <p>Good Practice:</p> <ul style="list-style-type: none"> – Local partnerships and experiences of biodiversity planning within local authorities – LGA Position Statement – Work of ALGE (e.g. Best Value and Biodiversity) – Audit Commission Library of Voluntary Biodiversity Indicators 	<ul style="list-style-type: none"> – Pilots on linking local biodiversity objectives with Community Strategies underway (funded by EN). – Guidance on Community Strategies and Biodiversity for local authorities and staff prepared (EN, WLT, RSPB). – PSA established with biodiversity targets for Essex County Council. – Guidance on Wildlife Sites System in preparation (Defra). – Government (ODPM) are undertaking a review of the burden of planning requirements on local government following the Local Government White Paper of 2001. 	<ul style="list-style-type: none"> – Ensure that the outcomes of the Government review of the burden of planning requirements on local government inform the development of this part of the strategy (Defra, ODPM). – In accordance with government guidance, promote the integration of local biodiversity objectives into Community Strategies. Foster links between local biodiversity and the partnerships and the Local Strategic Partnerships (Defra, ODPM, GOs, LBAPs, LGA, ALGE). 	<ul style="list-style-type: none"> – Review how far local biodiversity objectives have been integrated with Community Strategies and activities of the Local Strategic Partnerships. (Defra, ODPM, GOs, LBAPs, LGA, ALGE).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
<ul style="list-style-type: none"> – Further develop local authority networks to exchange and promote good practice on delivery of biodiversity objectives within local authorities, e.g. LGA position statement, Audit Commission indicators (L and RSIG, IDEA, LGA, ALGE). – Define clearly relationship between the Local Wildlife Sites and BAP process (Defra, TWT). – Monitor use of local authority performance measures on biodiversity (IDEA, LGA, ALGE). 					

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	<p>Full integration of biodiversity considerations within plans and policies for the English Regions and in particular as part of the updating and implementation of Regional Sustainable Development Frameworks and the activities of Government Offices, Regional Development Agencies, Regional Chambers and government agencies operating at the regional level.</p>	<ul style="list-style-type: none"> - Regional Biodiversity Partnerships/Fora - GOs - RDAs - Regional Chambers - Regional Planning Guidance - Regional Sustainable Development Frameworks - Other Regional Guidance. 	<ul style="list-style-type: none"> - Regional Sub-Group Recommendations (completed) - Experience of Regional Fora - Studies have demonstrated delivery of social/economic priorities through biodiversity action at the regional level. 	<ul style="list-style-type: none"> - Define and provide guidance on roles of regional bodies with respect to biodiversity (regional partnerships, EBG, Defra, EN, EA, ODPM, GOs). - Disseminate, promote and deliver recommendations from the 'Biodiversity Working in the English Regions' (EBG, Defra, EN, EA, ODPM, GOs). 	<ul style="list-style-type: none"> - Review integration of biodiversity considerations with plans and policies within the English Regions (EBG, Defra, ODPM, GOs).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3-5 years) and key actors
Biodiversity made relevant to local people The promotion of biodiversity understanding at the local level.	Development of the contribution of local partnerships to the improved communication and understanding of biodiversity.	<ul style="list-style-type: none"> – Community Strategies. – LBAP Partnerships. – Nature-on-line (EN). 	<ul style="list-style-type: none"> – Local projects. – Local public awareness plans. 	<ul style="list-style-type: none"> – Collect good practice examples that demonstrate activity and experience of partnerships at the local level. Education and public understanding (L and RSIG, Education and public understanding SIG). – Define ‘audiences’ and ‘partners’ at the local and regional level to improve targeting of communication (L and RSIG, Education and public understanding SIG). 	<ul style="list-style-type: none"> – Review work promoting understanding amongst local people and sectors of the relevance of biodiversity to them (L and RSIG, Education and public understanding SIG).

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Economic measures for biodiversity Economic activity causing biodiversity loss,	Better understanding of economic drivers of biodiversity degradation.	Economic analysis of the macroeconomic, microeconomic and sectoral economic context of biodiversity use and threats.	English Nature economic analysis. Identification of significance of biodiversity degradation from economic activities.	Develop memorandums of understanding or guidelines for sectors with major biodiversity impacts.	Include biodiversity impacts in investment decisions as part of Socially Responsible Investment.
Market failure damages biodiversity.	Correction of market failures and implementation of polluter pays principle. Recognition of biodiversity as a public good.	Market creation, taxes, charges, subsidies, tradable permits, bonds and deposits. Polluter pays principle. User pays principle. Tax breaks, incentives, subsidies.	Pesticide reduction by voluntary action as an alternative to tax. Budget announcement to consider economic instruments for fertilisers/nutrients, following EN/EA studies. Variety of other green taxes with indirect biodiversity impacts (transport taxes, climate change levy, aggregates and landfill tax).	Creation of markets for biodiversity where possible. Assessment of effectiveness of voluntary pesticides package. Work on the possible development of economic instruments for nutrients. Consider applicability of VAT system to encourage biodiversity friendly products as part of EU VAT review 2003. Ensure other proposed and existing green taxes take account of biodiversity impacts.	Continue to research and implement economic instruments to address biodiversity and wider environmental problems.

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Value of biodiversity taken into account in decision making.	Decisions reflect the full costs and benefits of biodiversity.	Appropriate valuation and appraisal methods. Identification of the components of biodiversity value. Use of precautionary principle.	Defra study into valuing changes in biodiversity.	Continued development in the design of stated preference techniques to ensure they are sensitive to the problems of biodiversity measurement. Development of mixed methodology decision processes, using economics alongside qualitative/biophysical assessments. Appropriate integration of biodiversity into policy appraisal mechanisms (RIA, EIA, IPA). Research on ecosystem services in UK.	Further develop and refine valuation methodologies and application to decisions in the light of research findings and international progress (e.g. OECD work).
				Refine appraisal methods so that they take account of intergenerational issues, concept of critical natural capital/strong definitions of sustainability.	

The economics and funding of biodiversity

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Use of biodiversity as a driver for sustainable local economic development.	Role of biodiversity in local development is widely understood and recognised and contributes to conservation and environmental protection.	Studies to assess impact of conservation on local economies. Incorporate biodiversity conservation into economic/tourism strategies/projects.	Various studies by RSPB, EN, CA, Defra.	Further work to understand and promote the economic impacts of biodiversity conservation, and incorporate into economic development projects and strategies.	Further work to understand and promote the economic impacts of biodiversity conservation, and incorporate into economic development projects and strategies.
Understanding the full costs of delivering the England Biodiversity Strategy.	The full costs of delivering the England Biodiversity Strategy are understood.	BAP costing process and reports.	BSG report and costings group work.	Identify biodiversity funding requirements in addition to BAP costs. Monitor provision of funding against costs.	Further monitoring of biodiversity costs and refinement of cost estimates.

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Priorities for Biodiversity Funding in England					
Biodiversity degradation associated with other funding programmes.	Funding programmes support biodiversity objectives.	Common Agricultural Policy.	Preparation of Government's Sustainable Food and Farming Strategy; preparation for mid-term review of CAP.	Mid-term review of CAP 2002/3.	CAP reform 2006.
		Common Fisheries Policy.	CFP review 2002/3. EC Fisheries Biodiversity Action Plan.	Implementation of CFP reform and associated spending programmes.	Implementation of CFP reform and associated spending programmes.
		Woodland Grant Scheme/Farm Woodland Premium Scheme.	Review of grants for new woodlands in England, 2002. Ensure biodiversity impacts of afforestation are fully considered.	Monitor biodiversity impacts of forestry grants, and identify further reform as required.	Monitor biodiversity impacts of forestry grants, and identify further reform as required.
		Flood defence and Internal Drainage Board budgets.	Review of flood defence funding and high level target for biodiversity.	Monitor biodiversity impacts of flood defence programmes. Raise priority of biodiversity for funding by operating authorities as necessary.	Adapt flood defence programmes and delivery to incorporate biodiversity objectives.
		Sustainability appraisal of Structural Funds.	Mid-term review should consider environmental impacts.	Monitor biodiversity impacts and seek further reform as required.	Monitor biodiversity impacts and seek further reform as required.
		Sustainability appraisal of government funding programmes.	Sustainability appraisal of Spending Review 2002.	Consider how future spending reviews can reflect biodiversity.	

The economics and funding of biodiversity

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1–3 years) and key actors	Programme of Actions (3–5 years) and key actors
Public funding for biodiversity conservation.	Adequate funding to meet biodiversity objectives.	Economics and Funding Strategy Implementation Group. Economics and Funding Strategy Implementation Group.	Work of Biodiversity Costings/ Baker Shepherd Gillespie report. English Nature grants to LBAP partnerships. LA programmes.	Review adequacy of current funding sources to deliver biodiversity objectives. Review LBAP funding and develop strategy.	Incorporate biodiversity into considerations for future spending reviews and allocations. Identify gaps in LBAP funding and if necessary take into account in future spending reviews and allocations.
	Ensure agri-environment schemes provide maximum biodiversity benefit.	Agri-environment programme.	Agri-environment review 2002.	Opportunities through modulation and mid-term review of CAP 2003.	CAP reform 2006.
	Ensure grants and supplements and scoring system meet biodiversity priorities.	Woodland Grant Scheme/Farm Woodland Premium Scheme.	Review of WGS/FWPS in 2002.	Monitor delivery of grants against BAP priorities. Develop Challenge Funds to meet biodiversity priorities.	Monitor delivery of grants against BAP priorities. Develop Challenge Funds to meet biodiversity priorities.
	Opportunities for flood defence schemes to contribute to wetland creation.	Flood defence programme.	Current review of flood defence funding. Review of Defra's high level target for biodiversity.	Monitor the environmental performance of the new priority scoring system for FD projects and revise as necessary for satisfactory biodiversity outcomes.	Review Biodiversity high Level Target returns for FD projects and consider need for policy changes for better BAP delivery.

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
	Maximise the possibilities for Lottery funding for biodiversity projects.	National Lottery. Responsible bodies: Defra and DCMS. Distributing bodies: New Opportunities Fund, Heritage Lottery Fund, The Community Fund. Board Trustees and decision-making committees.	Liaison with lottery boards to build biodiversity into strategic plans (2002-07 plans complete). Biodiversity representation on lottery committees (ongoing). Show need and demand through applications.	Liaison with relevant distributors (HLF, NOF, CF) to take account of biodiversity. Enhance biodiversity knowledge and expertise of lottery boards and committees.	As previous column. As previous column.
	Funding for implementation of environmental Directives/regulations affecting biodiversity (Water Framework and Nitrates Directives etc.).		Implementation of WFD; review of Nitrates Directive.	Ensure adequate funding for implementation.	Ensure adequate funding for implementation.
	Landfill tax credit scheme – important source of biodiversity funding.		Review of LTCS 2002. Consultation responses available.	Take account of biodiversity in any scheme changes.	
	Aggregates levy Sustainability Fund: new source of biodiversity funding.		Implementation of fund – opportunities for funding for habitat re-creation projects.	Monitor progress in funding biodiversity projects to contribute to scheme review after initial 2 years.	Incorporate biodiversity funding considerations as part of post-2 year scheme review.

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
		EU co-funding for Natura 2000 through Article 8 of Habitats Directive.	EU expert group considering implementation of Article 8.	Assess costs of managing Natura 2000 sites and submit estimates to EU. Develop use of EU funding programmes to co-fund Natura 2000.	Continue to use EU programmes to co-fund management of Natura 2000.
		EU funding programmes (Structural Funds, LEADER, INTERREG, LIFE). Capital Modernisation Fund.	Various projects currently funded. English Nature projects.	Identify how EU funding for biodiversity projects can be enhanced. Review progress and seek further funding where appropriate.	Promote projects to secure greater EU funding for biodiversity.
		National Parks and AONBs.	Budget review and increase 2001/2.	Identify budgets allocated to biodiversity.	Consider possibilities for maximising biodiversity benefits of funding.
Private/NGO funding for biodiversity conservation.	A financial and cultural climate in which funding for biodiversity is encouraged.	Encourage corporate sponsorship of biodiversity programmes.	BAP champions scheme sponsorship.	Increase efforts to secure corporate sponsorship of BAPs and LBAPs.	
		Biodiversity funding by land managers/ corporations.	Taxation reviews by Countryside Agency, Environment Agency, RSPB.	Consider review proposals.	

Priority Policy Issue	Outcomes desired	Available Tools	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
		Measures to encourage charitable giving – Gift Aid, legacies, membership etc.		<p>Strategy Implementation</p> <p>Group to review biodiversity impacts of implementing Gift Aid and consider ideas for reform as necessary.</p> <p>Identify other measures that could promote charitable giving to biodiversity.</p>	
		Charity taxation for biodiversity funding.		<p>Strategy Implementation</p> <p>Group to analyse biodiversity implications of charity taxation and VAT.</p>	<p>Consider implications and policy case for adaptation.</p>

NOTE:

Agents for the programmes of action are not given in this Appendix. The work programme will be co-ordinated by the Economics and Funding Strategy Implementation Group which will draw in other partners as appropriate.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Raising awareness and policy recognition.	Increased Board level recognition of biodiversity as a material business issue. Increase in the number of companies (from 14 in 2002) signed up or publicly committed to the biodiversity objectives of MACC2. Increase in the number of companies (from 25 in 2002) completing the biodiversity question in the BiE Index. Integration of biodiversity in all sectoral sustainability strategies.	<p>L – Modernising Company Law White Paper, July 2002.</p> <p>I – BiE Index of Corporate Environmental Engagement (and BiE regional indices); BITC Corporate Responsibility Index; FTSE4Good Indices; Race to the Top project.</p> <p>A – MACC2; Business and Biodiversity Resource Centre (BBRC – Earthwatch, Innogy, Defra, EN).</p> <p>Case Studies in business and biodiversity, March 2000 (Earthwatch).</p> <p>Putting a bit back: A Guide to Nature Conservation for Small to Medium-Sized enterprises (SMEs), 2001 (Earthwatch).</p> <p>Pioneering – a self assessment guide for sectoral sustainability strategies (DTI, Defra, Sustainable Development Commission).</p>	<p>Race to the Top project (IIED).</p> <p>Netregs project for SMEs (Environment Agency).</p> <p>Pioneers Group (DTI, Defra, Sustainable Development Commission, trade associations).</p> <p>Sectoral sustainability strategies (DTI, Defra, Sustainable Development Commission, trade associations).</p>	<p>Promote business engagement with biodiversity through the BiE and BITC indices (BiE and BITC, Earthwatch, EN).</p> <p>Develop strategic, Board level guidance on how to integrate biodiversity with other company actions on the ‘environment’ and sustainability (Defra, Earthwatch, EN).</p> <p>Develop training process for company environment managers – links to Education Workstream (Northumbrian Water, IEMA).</p> <p>Develop basic information on biodiversity for Small Business Service website (DTI/SBS, Earthwatch, EN).</p> <p>Develop awareness raising and training pack for SMEs (DTI/SBS/Business Links).</p> <p>Integrate biodiversity in Netregs project for SMEs (Environment Agency, EN).</p> <p>Further publications in ‘Business & biodiversity’ series (Earthwatch).</p> <p>Update and develop BBRC website (Earthwatch).</p>	<p>Defra, DTI, BiE and BITC, EN, Earthwatch (as years 1-3)</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Integrating biodiversity performance criteria and standards with investment appraisal.	A coherent business case for managing biodiversity. Standard performance criteria for assessing biodiversity risks in investment decisions. Standard biodiversity performance indicators and sector specific indicators. Revision and adoption of biodiversity as a key performance indicator in FTSE4Good Environmental Performance Supplement.	L – Turnbull Report, 1999; Pensions Act 2000 disclosure measures; Modernising Company Law White Paper, July 2002. I – BiE Index of Corporate Environmental Engagement (and BiE regional indices); BITC Corporate Responsibility Index; FTSE4Good Indices. A – Measuring biodiversity performance: context for biodiversity question in BiE Index, 2001 (Earthwatch, EN); FTSE4Good Environmental Performance Supplement, 2001 (EIRIS); Myners Review of institutional investment in the UK, 2001; ABI disclosure guidelines, 2001.	EN/Earthwatch meetings with investment fund managers.	Develop a coherent business case for managing biodiversity impacts and standard biodiversity performance investment criteria (UKSIF, BiE, EIRIS, SRI fund managers). Identify and develop guidance on how to assess significant risks to company value that might arise from biodiversity impacts (Earthwatch, EN, UKSIF, BiE, EIRIS). Develop web based guidance on measuring biodiversity performance for BiE Index (Earthwatch, EN, BiE). Develop standard biodiversity performance indicators (e.g. a business level guidance document) and sector specific indicators (Earthwatch, EN, BiE). Revise Environmental Performance Supplement (Earthwatch, EN, EIRIS), and make operational for FTSE4Good.	Develop a coherent business case for managing biodiversity impacts and standard biodiversity performance investment criteria (UKSIF, BiE, EIRIS, SRI fund managers). Identify and develop guidance on how to assess significant risks to company value that might arise from biodiversity impacts (Earthwatch, EN, UKSIF, BiE, EIRIS). Develop web based guidance on measuring biodiversity performance for BiE Index (Earthwatch, EN, BiE). Develop standard biodiversity performance indicators (e.g. a business level guidance document) and sector specific indicators (Earthwatch, EN, BiE). Revise Environmental Performance Supplement (Earthwatch, EN, EIRIS), and make operational for FTSE4Good.

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Integrating biodiversity with certified management systems and informal management systems.	Biodiversity integrated with third party management systems (e.g. EMAS and ISO14000) – EMAS requires organisations to consider all the environmental aspects of its activities, products and services, including effects on biodiversity.	L – Combined Code on Corporate Governance, 1998; Turnbull Report, 1999; Modernising Company Law White Paper, July 2002. EMAS. A – Business and biodiversity: a UK guide, August 2001 (Earthwatch); The Natural Step; SIGMA project; EMAS; ISO 14000 series; FSC guidelines for sustainable forest management; MSC guidelines for sustainable fisheries management.	Assured Farm Standards project (Defra, Environment Agency, EN, Countryside Agency).	Develop standard approach (e.g. through integration with EMAS or ISO14000 series) and case studies of successful integration (IEMA, Earthwatch). Develop a practitioners guide (suggested title) 'Biodiversity management: a business guide' (IEMA). Integrate biodiversity with CBI 'Contour' benchmarking service (CBI, Earthwatch, EN).	
Managing biodiversity – SSSI condition – CBAP process – LBAP contributions.	66% by area of company owned SSSIs in favourable or recovering condition by 2005 (95% by 2010). Increase in the number of company site-level BAPs making measurable contributions to LBAPs.	L – CROW Act 2000, especially for S28G 'Public Bodies'; Modernising Company Law White Paper, July 2002. I – Management agreement payments for capital works to achieve favourable condition on SSSIs (EN). A – BBRC; Sainsburys/FWAG farm BAPs.	Site Management Statements for SSSIs (EN); Advice on CBAP process, targets and delivery on sites (Earthwatch, EN, Wildlife Trusts); Sainsburys/FWAG farm BAPs; LBAP partnerships.	Publish guidance on how to prepare a company site-level BAP (Earthwatch, Defra, EN). Provide guidance to Corporate Environmental Responsibility Group members (Earthwatch) and Forum for the Future Business Network on CBAPs.	Defra, BIE and BITC, EN, Earthwatch (as years 1-3).

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Biodiversity reporting (as an integral part of environmental and sustainability reporting).	<p>20 companies (from 3 in 2002) with land in SSSIs report on condition state in their environment report by December 2005.</p> <p>All FTSE 350 companies for whom biodiversity is a significant issue report performance management in their environment report by 2007.</p> <p>Widespread adoption of voluntary reporting of LBAP contributions through national Biodiversity Action Reporting System (BARS).</p>	<p>L – Modernising Company Law White Paper, July 2002.</p> <p>I – ACCA UK Environmental Reporting Awards; BiE Index of Corporate Environmental Engagement.</p> <p>A – MACC2; Global Reporting Initiative; SIGMA project; General Guidelines on Environmental Reporting, 2001 (Defra, DTI, CBI); ABI disclosure guidelines, 2001.</p>	<p>Defra/DTI initiative for 7,000 SMEs with >250 employees to produce an environmental report with SBS advice; EN trials of reporting service for companies with land in SSSIs; Development of BARS (EN on behalf of BAP partnership).</p>	<p>Develop biodiversity reporting guidelines (Defra, DTI) by 2005.</p> <p>Integrate biodiversity in guidance on CSR management and reporting for the financial services sector (Defra, DTI, DFID, FORGE Group).</p> <p>Engage with ACCA to develop a biodiversity reporting category for the UK Environmental Reporting Awards (Earthwatch, EN).</p> <p>Develop reporting service for companies with land in SSSIs (EN).</p> <p>Promote and monitor uptake of voluntary biodiversity reporting by all FTSE 350 companies (Defra).</p> <p>Promote implementation, monitoring and reporting of LBAP contributions through BARS (Defra, EN).</p>	<p>Encourage MACC2 signatories to sign up to biodiversity target.</p> <p>Promote and monitor uptake of voluntary biodiversity reporting by all FTSE 350 companies for whom biodiversity is a significant issue (Defra, DTI).</p>

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Coordination and partnerships.	Better understanding of the company perspective, priorities and operational constraints by nature conservation partners. Effective national, regional and local coordination of business engagement with the BAP process in place by 2005. Increase in the number of companies involved in LBAP partnerships and the habitat and species Champions scheme.	A – MACC2; BBRC; Guidelines for lead partners/contact points “Attracting Champions for Priority Species”, 1999. Corporate Environmental Responsibility Group (Earthwatch); Forum for the Future Business Network; Industry and Nature Conservation Associations (EN). LBAP partnerships.	LBAP partnerships; Teesside and Humberside INCAs; Partnership projects with Wildlife Trusts (e.g. ‘White and Wild’ milk).	Develop guidelines for NGOs seeking to engage with businesses on biodiversity (Earthwatch); Promote and facilitate company involvement in LBAP partnerships and the habitat and species Champions scheme (Defra, EN, Earthwatch, Wildlife Trusts); Highlight case studies of good practice in NGO-company partnerships (Earthwatch).	

Priority Policy Issue	Outcomes desired	Available Tools (L = legislation; P = policy; I = incentives; A = advice)	Current Action	Programme of Actions (1-3 years) and key actors	Programme of Actions (3-5 years) and key actors
Identify and promote good practice.	Identification and promotion of good practice at sectoral and company levels.	<p>A – The Business of Biodiversity: Action for Wildlife, Sept 1999 (Northumbrian Water); Biodiversity and minerals: Extracting the benefits for wildlife, 1999 (Minerals and Nature Conservation Forum); Case Studies in business and biodiversity, March 2000 (Earthwatch); Putting a bit back – A Guide to Nature Conservation for Small to Medium-Sized enterprises (SMEs), 2001 (Earthwatch); Sectoral sustainability strategies (DTI, Defra, Sustainable Development Commission, trade associations).</p>	<p>Sectoral sustainability strategies (DTI, Defra, Sustainable Development Commission, trade associations); Good practice examples at company level.</p>	<p>Review company responses to BiE Index biodiversity question, identify sector leaders, publish a report on best practice and hold a workshop to promote this in Autumn 2003 (Earthwatch, EN, BiE). Identify and promote good practice in the water sector (Water UK, EN), and more generally in all sectors through SBS, Chambers of Commerce and Trade Associations (DTI, Defra).</p> <p>Revise, expand and re-issue case studies in business and biodiversity (Earthwatch); Develop website to promote best practice (Minerals and Nature Conservation Forum) and link this to BBRC (Earthwatch).</p>	<p>Review company responses to BiE Index biodiversity question, identify sector leaders, publish a report on best practice and hold a workshop to promote this in Autumn 2003 (Earthwatch, EN, BiE). Identify and promote good practice in the water sector (Water UK, EN), and more generally in all sectors through SBS, Chambers of Commerce and Trade Associations (DTI, Defra).</p> <p>Revise, expand and re-issue case studies in business and biodiversity (Earthwatch); Develop website to promote best practice (Minerals and Nature Conservation Forum) and link this to BBRC (Earthwatch).</p>

Ideas for potential work by the Education and Public Understanding Strategy Implementation Group to address the priority issues.

TREATING PEOPLE AS EQUAL, PARTICIPATING PARTNERS.

- Recognise that all information, communication and public understanding initiatives should be:
 - sensitive to the needs, knowledge, circumstances and aspirations of those towards whom they are aimed
 - socially inclusive
 - encouraging of dialogue, participation and a democratic approach

INTEGRATION OF EDUCATION AND PUBLIC UNDERSTANDING OF BIODIVERSITY INTO OTHER POLICIES OR STRATEGIES.

- Consider the possibilities for supporting understanding of biodiversity in the follow-up to the report of the Urban Green Spaces Taskforce. In particular, consider biodiversity elements of work on:
 - demonstration projects to spread good practice
 - improving the provision of green spaces for children and young people
 - improving the provision and training of staff to work specifically with community groups, including young people
- Take forward biodiversity public awareness and education elements of the Government's Food and Farming Strategy. In particular, consider giving support in relation to current and future initiatives on:
 - labelling and information
 - other ways to reconnect with consumers
 - giving encouragement to local education authorities to ensure that all school children get the chance to visit working farms for

example, by building on the Growing Schools initiative and research being undertaken by FACE, the Countryside Agency and DfES

- healthy eating, for example, working with the National Health Schools Standard
 - fruit in schools
 - educating children about foods, for example, building on NHSS and provision within the National Curriculum in Science, PE/Sport, PSHE and Food Technology
- Work with the Local and Regional Strategy Implementation Group on the public understanding, education and communication aspects of their work with regional bodies (such as Regional Development Agencies, Government Offices and Regional Assemblies), local authorities, and Local Biodiversity Action Plans and partnerships.

MAKING BIODIVERSITY RELEVANT TO PEOPLE, INCLUDING INCREASING KNOWLEDGE OF HOW THE VALUE OF BIODIVERSITY CAN BE MARKETED.

- Develop a publicity strategy to raise awareness of England's Biodiversity Strategy and to show its relevance to people. Components of the strategy could include:
 - a popular version of the Strategy
 - information leaflets in libraries and other public places
 - encouragement to science and other centres to co-ordinate exhibitions and other initiatives around the main themes of the Strategy
 - guidelines to groups and organisations working within formal and non-formal education on appropriate ways of linking with the Strategy
 - targeted support for initiatives that promote dialogue between and within local communities about biodiversity issues

- Identify media opportunities for promoting the main themes of the Strategy. This could include:
 - identifying how current provision can be orientated to support the Strategy, for example, through back-up material and on-line provision
 - greater communication and co-operation over future provision in relation to implementation of the Strategy
 - regular reporting of progress through biodiversity indicators
 - the identification of specific opportunities to encourage involvement at individual level, for example, through current affairs, gardening, travel and other leisure-based programming
- Consider ways in which current initiatives that support access to and educational use of urban green space can be further encouraged, for example, Green Pennant Awards, Green Flag Awards, English Nature’s Accessible Greenspace Standards, Community Forests
- Broaden outreach to engage new audiences, for example, within non-formal education settings; also recognise that engaging new audiences may require different, more inclusive approaches, for example, similar to those utilised in other fields, such as health awareness or commercial marketing
- Consider ways of linking biodiversity education experiences through networks of public venues such as libraries, urban green space, schools, museums, science centres, town halls and other information centres
- Promote neighbourhood renewal and New Deal as a way of maximising opportunities for engagement and participation of communities in relation to environment and biodiversity, particularly in deprived local authority areas
- Consider ways in which existing support for schools on education for sustainable development (ESD) could be broadened to give greater emphasis to biodiversity, e.g. QCA ESD website
- Examine how resources being developed by initiatives such as Growing Schools can be used to promote biodiversity
- Consider how such initiatives can promote outdoor experience in schools. This might include:
 - further research (e.g. identified as needed by the CA/FACE/DfES literature review) to find ways of encouraging schools to make more use of outside experiences
 - assessment and evaluation for biodiversity of initiatives involving outdoor opportunities
- Review opportunities for increased coverage of biodiversity and sustainability issues within other education policies
- Consider opportunities through the expansion of current initiatives in non-formal education, for example, through the Connexions Service
- Consider ways of promoting links between economic growth, attractive working environments and biodiversity

COMMUNICATING THE BENEFITS OF BIODIVERSITY, FOR EXAMPLE, IN TERMS OF SOCIAL OR BROADER EDUCATION GOALS (SEE CA/FACE/DFES LITERATURE REVIEW).

- Work with the Economics and Funding Strategy Implementation Group to consider how current funding programmes, e.g. Heritage Lottery Fund, New Opportunities Fund and the Landfill Tax Credit Scheme, can be used to support public understanding programmes relating to biodiversity

IMPROVEMENT OF EDUCATION EXPERTISE AND ENCOURAGEMENT OF PARTNERSHIPS WITHIN DIFFERENT SECTORS.

- Define more closely the role of government agencies, such as English Nature, the Countryside Agency and the Environment Agency in education for biodiversity. This could include:
 - ways of increasing co-ordination and improving communications between agencies

Promoting education and public understanding

- working more closely and in partnership with non-government bodies
- consider potential enhancement of the public understanding and education skills of relevant government agencies, for example, through professional development
- Provide opportunities that increase levels of understanding among local authority staff and elected members through training, CPD and other awareness-raising initiatives, e.g. through the pilot projects under Learning through Landscape – which also covers Heads, teachers, ground staff and governors
- Set up a forum or other network of broadcasters and practitioners to ensure that information exchange and dialogue is an ongoing process rather than dependent on particular events or issues
- Consider the recognition of national centres of excellence in biodiversity. This could include:
 - establishment of a national network of key sites for the interpretation of biodiversity, providing a continuum from national to local significance
 - encouragement of mechanisms among site providers to promote sharing of expertise and joint programmes
- Consider the implications for biodiversity education of the increasing links between formal and non-formal education, including through life-long learning
- Encourage partnerships between the business community and education initiatives

IMPROVE COMMUNICATION BETWEEN BIODIVERSITY PROFESSIONALS AND EDUCATORS.

- Develop mechanisms that ensure greater dialogue between biodiversity professionals and educators, for example, as an integral part of implementing SAPs, HAPs and LBAPs
- Consider developing guidelines and other tools for biodiversity professionals to enable them to engage more effectively with a variety of audiences
- Draw together information on current materials available to support biodiversity education

ADDRESS SKILLS SHORTAGES IN TAXONOMY AND SYSTEMATICS AND LACK OF BIODIVERSITY ELEMENTS IN TRAINING FOR RELEVANT PROFESSIONS.

- In the light of acknowledged shortages of taxonomic and systematic skills, review current provision and uptake of higher and further education courses, which specifically address these areas
- Identify opportunities to develop biodiversity modules or elements within relevant professional training, for example, planning, surveying, health and social sciences

Aims and Objectives of the UK Biodiversity Partnership

The UK Biodiversity Partnership's aims should be:

- To maintain and enhance biological diversity within the UK, paying particular regard to:
 - a) Overall populations and natural ranges of native species and the quality and ranges of wildlife habitats and ecosystems
 - b) Internationally important and threatened species, habitats and ecosystems
 - c) Species, habitats and natural and managed ecosystems characteristic of local areas
 - d) Biodiversity of natural and semi-natural habitats where they have been diminished over recent past decades
- To contribute to the conservation of global biodiversity
- To increase public appreciation and enjoyment of biodiversity and recognition of its value wherever it occurs
- To integrate biodiversity fully into policies and programmes as part of sustainable development

In pursuing these aims we should adopt the following objectives:

- To maintain and keep under review an overall strategy for the conservation and enhancement of UK biodiversity in the light of the biodiversity priorities of the four countries of the UK
- To bring together all relevant sectors to work in partnership
- To develop, implement and keep under review targeted action plans for the most important species and habitats

- To take direct measures to conserve species and habitat diversity, in particular through the conservation of threatened or protected species and important sites, and through the management or control of non-native species
- To encourage the preparation, implementation and review of Local Biodiversity Action Plans to support national biodiversity objectives and to take forward local priorities for action
- To take steps to minimise the adverse impacts of human activity on biodiversity, both direct and indirect
- To take steps to understand the effects on biodiversity of large-scale influences, such as ozone depletion and climate change, and determine appropriate responses
- To integrate biodiversity considerations into public policies and programmes
- To encourage more integration of biodiversity considerations into business policies and practices to support the delivery of biodiversity objectives
- To take steps to increase public awareness of biodiversity issues
- To identify, undertake and keep under review research and monitoring to support implementation of other objectives
- To develop and maintain comprehensive and accessible biodiversity information systems linking national and local records

**Membership of England
Biodiversity Group**

The National Trust

Royal Society for the Protection of Birds

Department for Environment Food and Rural
Affairs

English Nature

Plantlife

British Trust for Conservation Volunteers

Ministry of Defence Estates

Association of Local Government Ecologists

Countryside Agency

National Farmers Union

The Wildlife Trusts

Country Land and Business Association

Forestry Commission

Local Government Association

Environment Agency

ABI	Association of British Insurers	BUGS	Biodiversity in Urban Gardens
ACCA	Association of Chartered Certified Accountants	BURA	British Urban Regeneration Association
ACFM	Advisory Committee for Fisheries Management	BVPI	Best Value Performance Indicators
AFS	Assured Food Standards	BW	British Waterways
AGENDA 2000	Programme for reform of the Common Agricultural Policy agreed at the Berlin Council in March 1999 to cover the period 2000-2006	CA	Countryside Agency
ALGE	Association of Local Government Ecologists	CABE	Commission for Architecture and the Built Environment
AMP3	Asset Management Plan (Periodic Review of Water Prices)	CAP	Common Agricultural Policy
ANGst	Accessible Natural Greenspace standards and targets	CAMS	Catchment Abstraction Management Strategy
AONB	Areas of Outstanding Natural Beauty	CBAP	Company Biodiversity Action Plan
ASCOBANS	Agreement on the Conservation of Small Cetaceans of the Baltic And North Sea	CBD	Convention on Biological Diversity
AW	Ancient Woodlands	CBI	Confederation of British Industry
BAP	Biodiversity Action Plan	CCMS	NATO Committee of the Challenges of Modern Society
BARS	Biodiversity Action Reporting System	CEE	Council for Environmental Education
BASC	British Association for Shooting and Conservation	CEFAS	Centre for Environment, Fisheries and Aquaculture Science
BBRC	Business and Biodiversity Resource Centre	CEH	Centre for Ecology and Hydrology
BC	Butterfly Conservation	CF	Community Fund
B & CAG	Burials & Cemeteries Advisory Group	CFMP	Catchment Flood Management Plan
BiE	Business in the Environment	CFP	Common Fisheries Policy
BIG	Biodiversity Information Group	CHaMPs	Coastal Habitat Management Plans
BITC	Business in the Community	CIRIA	Construction Industry Research and Information Association
BOC	British Oxygen Company	COGAP	Code of Good Agricultural Practice
BR	Building Regulations	CONE	Cramlington Organisation for Nature and the Environment
BRE	Building Research Establishment	CP	Changing Places
BSBI	Botanical Society of the British Isles	CRoW	Countryside and Rights of Way Act 2000
BSG	Baker, Shepherd, Gillespie	CSL	Central Science Laboratory
BTCV	British Trust for Conservation Volunteers	CSR	Comprehensive Spending Review
BTO	British Trust for Ornithology	CSS	Countryside Stewardship Scheme
		CURE	Centre for Urban and Regional Ecology
		CYP	Children and Young People
		DCMS	Department for Culture, Media and Sport

Glossary

DEFRA	Department for Environment, Food and Rural Affairs	FC	Forestry Commission
DFEE	Department for Education and Employment	FD	Flood Defence
DfES	Department for Education and Skills	FEI	Forest Education Initiative
DFID	Department for International Development	FOCUS	Finding Out Causes and Understanding Significance
DfT	Department for Transport	FORGE	Financial Organisation Reporting Guidelines for the Environment
DoH	Department of Health	FOSSE	Forum on Seeds for a Sustainable Environment
DoT	Department of Transport	FR	Forestry Research
DTI	Department for Trade and Industry	FSC	Forest Stewardship Council
DTLR	Department of Transport, Local Government and the Regions	FTE	Full Time Equivalent
EA	Environment Agency	FWAG	Farming and Wildlife Advisory Group
EAF	Environmental Action Fund	FWPS	Farm Woodland Premium Scheme
EBG	England Biodiversity Group	GFA	Green Flag Awards
EC	European Commission	GIS	Geographical Information Systems
ECAP	Eutrophication Control Action Plan	GLOBE	Global Learning and Observations to Benefit the Environment
EcoQOs	Ecological Quality Objectives	GO	Government Office
EfA	Environment for All	GP	General Practitioner
EFS	England Forestry Strategy	GwK	Groundwork
EH	English Heritage	HA	Highways Agency
EIA	Environmental Impact Assessment	HABAP	Highways Agency Biodiversity Action Plan
EIRIS	Ethical Investment Research Service	HAP	Habitat Action Plan
ELIG	England Local Issues Group	HBF	House Builders Federation
EMAS	Eco-Management and Audit Scheme	HFA	Hill Farm Allowance
EN	English Nature	HLF	Heritage Lottery Fund
EP	English Partnerships	HO	Home Office
ERDP	England Rural Development Programme	IACR	Institute for Arable Crops Research
ERP	Estuaries Research Programme	ICES	International Council for the exploration of the Sea
ESA	Environmentally Sensitive Area	ICZM	Integrated Coastal Zone Management
ESD	Education for Sustainable Development	IDB	Internal Drainage Board
EU	European Union	IDeA	Improvement and Development Agency for Local Government
FACE	Forum for the Advancement of Continuing Education	IEMA	Institute of Environmental Management and Assessment
FAO	Food and Agriculture Organisation (United Nations)		

IIED	International Institute for Environment and Development	MACC2	Making a Corporate Commitment 2
IMO	International Maritime Organisation	MBR	Millennium Biodiversity Report
INCAS	Industry and Nature Conservation Associations	MCPA	Marine and Coastal Protected Areas
INTERREG	EU initiative concerning transnational co-operation on spatial planning	MEHRA	Marine Environmental High Risk Areas
IPA	Integrated Policy Appraisal	MOD	Ministry of Defence
IPPC	Integrated Pollution Prevention and Control	MONARCH	Modelling of the Natural Resource Responses to Climate Change
JNCC	Joint Nature Conservation Committee	MSC	Marine Stewardship Council
LA	Local Authority	MSR	Marine Stewardship Review
LA21	Local Agenda 21	NATO	North Atlantic Treaty Organisation
LBAP	Local Biodiversity Action Plan	NBN	National Biodiversity Network
LBP	London Biodiversity Partnership	NERC	National Environment Research Council
LBRC	Local Biodiversity Record Centre	NFU	National Farmers Union
LC & CP	Living Churchyard and Cemeteries Project	NGO	Non Governmental Organisation
LEA	Local Education Authority	NHS	National Health Service
LEADER	Liason Entre Actions pour le Développement de L'Economie Rurale (LEADER + is a European Community Initiative to support sustainable rural development)	NOF	New Opportunities Fund
LEAF	Linking Environment and Farming	NNR	National Nature Reserve
LGA	Local Government Association	NP & AC Act	National Parks and Access to the Countryside Act
LI	Landscape Institute	NRU	Neighbourhood Renewal Unit
LIFE	EU financial programme for environmental projects	NSRI	National Soil Resources Institute
LNR	Local Nature Reserve	NUFU	National Urban Forestry Unit
LPA	Local Planning Authority	NVZ	Nitrate Vulnerable Zone
LRC	Local Record Centre	ODPM	Office of the Deputy Prime Minister
LRSIG	Local and Regional Strategy Implementation Group	OECD	Organisation for Economic Cooperation and Development
LTCS	Landfill Tax Credit Scheme	OFR	Operational and Financial Review
M4I	Movement for Innovation	OFS	Organic Farming Scheme
MAGIC	Multi-Agency Geographical Information for the Countryside	OSPAR	OSPAR Convention for the Protection of the Marine Environment of the North East Atlantic
MARPOL	MARPOL international convention for prevention of pollution from ships	PAN-UK	Pesticide Action Network- UK
		Pillar 1	(of the CAP) Production-linked subsidies
		Pillar 2	(of the CAP) Funding under the EU Rural Development Regulation
		PPG	Planning Policy Guidance

Glossary

PRO4	Periodic Review of Water Company Prices and Investment (2004)	SSSI	Site of Special Scientific Interest
PSA	Public Service Agreement	SUDS	Sustainable Urban Drainage Systems
PTES	People's Trust for Endangered Species	T & CP	Town and Country Planning
PWLO	Police Wildlife Liaison Officer	TWT	The Wildlife Trusts
QCA	Qualification and Curriculum Authority	UDP	Urban Development Plan
RDA	Regional Development Agency	UKBAP	UK Biodiversity Action Plan
REGIS	Regional Climate Change Impact and Response Studies	UKBG	UK Biodiversity Group
RPG	Regional Planning Guidance	UKMAB	UK Man and Biosphere
RIA	Regulatory Impact Assessment	UKSIF	UK Social Investment Forum
RFDC	Regional Flood Defence Committee	UKWAS	UK Woodland Assurance Scheme
RMNC	Review of Marine Nature Conservation	UNECE	United Nations Economic Commission in Europe
RSPB	Royal Society for the Protection of Birds	UPF	Urban Parks Forum
RTPI	Royal Town Planning Institute	URGE	Urban Green Environment
SAC	Special Area of Conservation	VAT	Value Added Tax
SAFFIE	Sustainable Arable Farming for an Improved Environment	VCU	Value for Cultivation and Use
SAP	Species Action Plan	W & C Act	Wildlife and Countryside Act 1981
SBS	Small Business Service	WDA	Welsh Development Agency
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice	WES	Wildlife Enhancement Scheme
SD	Sustainable Development	WFD	Water Framework Directive
SEA	Strategic Environmental Assessment	WGS	Woodland Grant Scheme
SEEDA	South East England Development Agency	WHO	World Health Organisation
SEU	Social Exclusion Unit	WLMP	Water Level Management Plan
SIG	Strategy Implementation Group	WRAP	Waste and Resources Action Programme
SIGMA	Sustainability: Integrated Guidelines for Management – Farming and Wildlife Advisory Group	WT	The Wildlife Trusts
SME	Small and Medium Enterprises	WTO	World Trade Organisation
SMP	Shoreline Management Plan		
SPA	Special Protection Area		
SRC	Short Rotation Coppicing		
SRI	Socially Responsible Investment		

