

Working with the grain of nature – taking it forward: Volume I

Full report on progress under the England
Biodiversity Strategy 2002 – 2006



Cover photograph: Lindisfarne NNR (Peter Wakely, Natural England)

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Biodiversity Strategy 2002 – 2006

Defra wishes to thank everyone who has contributed to the preparation of this report, in particular to the members of the England Biodiversity Group, and to the members of the ten workstreams. They in turn have been supported by other people and organisations, too numerous to mention. Together their contributions and suggestions have been invaluable.

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1. Executive summary

This is a report on the first four years of implementation of the England Biodiversity Strategy, *Working with the grain of nature*, and responds to the Secretary of State's requirement to publish a full report on progress in 2006. The England Biodiversity Group presents this report at an exciting time for biodiversity. The Natural Environment and Rural Communities (NERC) Act, most of which came into force on 1st October 2006, has established Natural England as a powerful champion for the natural environment and created a duty for public and statutory bodies to integrate biodiversity into their decision-making. Natural England will be a key partner both in leading thinking on biodiversity and in the delivery of the strategy.

Our approach to conserving biodiversity in England comprises a combination of protecting the best wildlife sites, promoting the recovery of declining species and habitats, embedding biodiversity in all sectors of policy and decision-making, enthusing people and developing the evidence base. In this report, we give an overview of our achievements in each of these areas, progress reports for each of the ten workstreams¹ of the strategy, an analysis of lessons learnt, and new work programmes taking us to 2010. An update of the indicators for the strategy, which were first published in *Measuring progress: baseline assessment*², is being published as Volume II of this report. Six of the seven indicators for which we have been able to establish trend data show a positive trend, while the remaining one – populations of wild birds – appears to have stabilised.

On *protecting the best wildlife sites*, in July 2005, the UK became the first EU member state formally to designate all of its terrestrial sites of community importance under the Habitats Directive (CD 92/43/EEC) designating all 608 sites as Special Areas of Conservation. The percentage of the suite of Sites of Special Scientific Interest (SSSIs) in target condition in September 2006 is 73.1 per cent, and on track³ to achieve the target to achieve 95% of SSSIs in favourable or recovering condition by 2010. In April 2006, Defra published new guidance www.defra.gov.uk/wildlife-countryside/ewd/local-sites/index.htm designed to promote a more transparent and consistent approach to the identification selection and management of local wildlife sites.

On *promoting the recovery of declining species and habitats*, the recently published report on progress under the UK Biodiversity Action Plan (UK BAP) between 2002 and 2005 suggests that whilst some priority species and habitats are still declining, the last three years have seen more positive signs of progress. Notable successes include the Lesser Horseshoe bat, the Bittern and the Deptford Pink, cereal field margins and lowland calcareous grassland. However, the trends for some species and habitats continue to be a cause for concern with continuing or accelerating declines in a number of marine or coastal habitats reflecting a range of pressures on the coast, including coastal squeeze. The England Biodiversity Group will place considerable emphasis on large scale habitat restoration over the next four years, working to establish shared priorities, better engagement with regional bodies and a wider appreciation of the benefits of biodiversity-rich landscapes for people. Summaries of the proposed UK BAP targets are incorporated in work programmes for each relevant workstream at Chapter 8.

¹ Climate change adaptation, agriculture, woodlands and forestry, water and wetlands, coasts and seas, towns cities and development, local and regional biodiversity, business and biodiversity, economics and funding, and education and public understanding.

² www.defra.gov.uk/wildlife-countryside/biodiversity/biostrat/indicators/index.htm

³ The trajectory for the SSSI PSA Target can be found in Defra's Departmental Annual Report www.defra.gov.uk/corporate/deprep/default.htm

1. Executive summary

On *embedding biodiversity in policy and decision-making*, progress reports for each workstream are set out in chapter 6, and forward work programmes in chapter 8. To summarise:

Climate change has become an increasingly important focus. Radical changes in use and management of our land, water bodies and seas in response to climate change are likely to be as significant as the northward and up-mountain shifts in range, rising sea levels, increasing frequency of extreme events and acidification of the oceans. We have established a Climate Change Adaptation workstream to provide better guidance on impacts of climate change, identify research needs and promote adaptation of policies and programmes within the strategy. Priorities for 2006-2010 include developing a robust and accessible evidence base to support adaptation to climate change impacts, including an established network for detecting changes in biodiversity; integrating initial adaptations into all workstreams of the strategy and establishing processes to learn from experiences and adjust strategies accordingly, and raising awareness of impacts of climate change and means of adaptation in all relevant sectors, at national, regional and local levels.

In *agriculture*, the reform of the Common Agricultural Policy agreed in June 2003, was a major breakthrough as it reduced the environmental impact of agriculture by removing an incentive to intensify production and requiring compliance with environmental standards. Equally important has been supporting farmers to change their farming methods to conserve biodiversity through Environmental Stewardship. Farmland birds are among the species benefiting from the scheme and the Government's target to 'reverse the long-term decline in the number of farmland birds by 2020', is on track. Priorities for 2006-2010 include continued improvement in the condition of farmland SSSIs and keeping on course to achieve the farmland birds PSA target, farmland HAP and BAP targets.

On *water and wetland management*, work under way to promote catchment-sensitive farming, improved regulation of water abstraction as a result of the Water Act 2003, and a major environmental improvement programme for water and wetland sites as a result of the fourth Periodic Review of Water Prices will help to secure ecological objectives required by the Water Framework Directive. Priorities for 2006-2010 include continued improvements of water quality in rivers, canals and lakes, major improvements in the conditions of wetland SSSIs as a result of water company expenditure to tackle abstraction problems, implementation of water level management plans, and a common framework for wetland restoration in the wider countryside.

On *woodlands and forestry*, in June 2005, Government launched a new policy for Ancient and Native Woodland in England. The new policy represents a significant change in emphasis for forestry activities in England by placing native and ancient woodland at the heart of forestry policy. This was followed, in May 2006, by a consultation on the review of the England Forestry Strategy, www.defra.gov.uk/corporate/consult/forestry-strategy/index.htm identifying national priorities and policies over the next 5 – 10 years to which England's trees, woods and forests can make a particularly significant contribution. Priorities for 2006-2010 include maintaining the current extent of the ancient woodland with no net loss of native woodland, improving the ecological condition of both native and non-native woodland, restoring planted ancient woodland sites, increasing the extent of the woodland resource, and the rate of restoration and re-creation of open ground priority habitats from forestry in line with UK BAP targets, and ensuring that woodland, forests, trees and related open habitats make an increasing contribution to functional ecosystems and wider environmental services, and to people's quality of life.

On *towns, cities and development*, in 2005 Government published Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation and a linked legal Circular (ODPM Circular 06/2005/Defra Circular 01/2005), articulating ambitions for the land use planning system to contribute to the conservation of our natural heritage, and recognising the major role the planning system has to play in meeting the Government's obligations and national policies on halting the loss of biodiversity. A guide to good practice in planning for biodiversity and geological conservation published in 2006 by ODPM, Defra and English Nature complements the recent Government policy in PPS9 and legal Circular. Priorities for 2006-2010 include gaining greater recognition of the contribution of biodiversity to sustainable development and 'liveability' agendas in national, regional and local policies and programmes, increased capacity and skills to manage urban open space rich in biodiversity, including ensuring adequate resilience or adaptability to climate change, and ensuring the conservation and enhancement of biodiversity is considered throughout the urban environment.

On *Coasts and Seas*, in March 2006, Government set out plans for its Marine Bill to provide a new framework for the management of our coasts and seas, based upon marine spatial planning, that should provide a better system for delivering sustainable development of the marine and coastal environment, covering both the use and protection of marine resources. Priorities for 2006-2010 include continued progress towards this framework through the Marine Bill, and working with other EU Member States on the implementation of the European Marine Thematic Strategy and its implications.

The last four years have seen an increasing focus on *local and regional delivery* with a continuing drive to devolve decision-making out towards local and regional Government. Funding has been secured for local and regional co-ordination of biodiversity which will focus on supporting local and regional partnerships, delivering Biodiversity Action Plans regionally and locally, reporting and monitoring progress and integrating biodiversity into regional and local policies. Priorities for 2006-2010 include the further integration of biodiversity into local and regional policies, processes and programmes, such as Local Area Agreements, Performance Assessment, Community Strategies, facilitated by the NERC Act biodiversity duty, partnerships at the local and regional level that are secure and fully funded, and improving access to sources of advice, expertise and datasets for local and regional authorities.

On the *engagement of business*, good progress has been made with raising awareness of biodiversity through web based guidance, workshops and participation with BBC's '*Breathing Places*' campaign. Further work is underway on improving tools for managing biodiversity at a sector level. Priorities for 2006-2010 include helping businesses, irrespective of size, to make a positive contribution to biodiversity; raising awareness of companies and the public of the impact of business on biodiversity, achieving 95% of SSSIs in business ownership in favourable or recovering condition, equipping businesses with the tools to manage biodiversity positively, and integrating biodiversity needs into their operations and planning.

On *economics and funding* we have built up a more detailed picture of the amount of money spent on protecting and enhancing biodiversity in England. We have also contributed to the work to produce detailed estimates for the costs of delivering the revised UK Biodiversity Action Plan targets. Priorities for 2006-2010 include ensuring that the economic evidence base is taken into account across the strategy and developing a methodology for assessing the economic benefits of conservation projects. We also aim to build on existing research on ecosystem services

1. Executive summary

and develop the evidence base on valuation of these services. The use of economic incentives to deliver biodiversity objectives will be a further key aim.

On *enthusing people*, it has become clear that we need to engage more people in taking action to maintain and enhance biodiversity as part of their everyday lives. These principles are embodied in the *Breathing Places* campaign, being led by the BBC to encourage a million more people to take action to make their local environment more wildlife-friendly. The various workstreams of the strategy have worked closely with the BBC team to draw together a broad partnership to deliver the campaign. Priorities for 2006-2010 include raising awareness and understanding of biologically diverse greenspace as a key factor in our quality of life to record levels, engaging a million new people in positive actions to enhance and protect biodiversity, improving the coordination and integration of communications, education, participation and action for biodiversity activities within the sector with dynamic tools in place to support this, and embedding the importance of robust and resilient ecosystems into the formal education system as part of a programme of learning for sustainable development.

On developing the evidence base, since 2002 when the Strategy was first published there have been many significant developments. Examples include the first complete cycle of SSSI condition assessments and the 2005 reporting round on UK BAP priority species and habitats. The evidence includes socio-economic research and analysis such as work on costings and valuation and studies of climate change impacts and adaptation. In the period up to 2010 the partners in the England Biodiversity Strategy will work to update the evidence base through support for the continuation of existing monitoring schemes and new survey initiatives including a repeat Countryside Survey in 2007, extension of butterfly monitoring to the wider countryside, a repeat River Habitat Survey, an updated National Inventory of Woodlands and Trees, an extended network of long-term monitoring sites to detect impacts of climate change, the creation of an Agricultural Change and Environment Observatory and surveillance of marine habitats. Work to improve the quality and relevance of indicators will continue.

Halting biodiversity loss is a huge challenge, particularly in the light of climate change, which will exacerbate many of the adverse drivers. If we are to have any prospect of success we must step up our efforts to conserve and sustainably use biodiversity, not just through the traditional biodiversity mechanisms but by mainstreaming biodiversity across all policy areas. We also need massively to increase public awareness of the benefits of and threats to biodiversity both nationally and internationally. The England Biodiversity Group will work closely with Natural England which will be expected to lead on much of the thinking and delivery on landscape scale approaches, particularly on the important priority of large-scale habitat restoration. Overall, communication issues will play a far greater role throughout the delivery of the strategy in the period from 2006-2010.

2. Introduction

This is a report on the first four years of implementation of the England Biodiversity Strategy, *Working with the grain of nature*, and responds to the Secretary of State's requirement to publish a full report on progress in 2006. The England Biodiversity Group presents this report at an exciting time for biodiversity, following the launch of Natural England with a new purpose, uniting in a single organisation the responsibility for conserving and enhancing our natural environment and helping people to enjoy it. Natural England will be a key partner both in leading thinking on biodiversity and in the delivery of the strategy.

Published in October 2002, the strategy brings together England's key contributions to achieving the 2010 target to halt biodiversity loss, seeks to make biodiversity part of the mainstream of our thinking and emphasises that healthy, thriving and diverse ecosystems are essential to everybody's quality of life and well-being. The strategy is about partnership – partnership to deliver more biodiversity, for its own intrinsic value, for the services it provides, and because it enriches people's lives. The approach that it set out comprises a combination of: protecting the best wildlife sites; promoting the recovery of declining species and habitats; embedding biodiversity in all sectors of policy and decision-making; enthusing people and developing the evidence base. In particular, it set out five key policy areas where integration needed to be achieved: agriculture, water, woodland, marine/coastal management and urban. It also identified four areas where cross-cutting improvement was needed: driving local and regional action; the economics and funding of biodiversity; engaging business, and promoting education and public understanding.

In this report, we describe the progress we have made since 2002. We set out a new vision, an overview of the progress we have made taking a holistic approach, a review of our headline indicators, progress reports for each workstream of the strategy, and forward work programmes taking us to 2010. A companion volume, updating the indicators first published in *Measuring progress: baseline assessment*

www.defra.gov.uk/wildlife-countryside/biodiversity/biostrat/indicators/index.htm to help monitor the implementation of the England Biodiversity Strategy, is published as Volume II of this report.

3. A New Vision

The England Biodiversity Strategy, *Working with the grain of nature*, set out a vision:

“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.”

While this vision has served us well over the last four years, the England Biodiversity Group decided to update it to reflect four things:

- That domesticated biodiversity, including that found in cultural landscapes such as traditional orchards, was not excluded (by the word “wild”)
- The growing recognition of the centrality of people’s relationship to biodiversity to achieving the objectives of the strategy
- The Defra-led development of a more strategic approach to natural environment policy. Integration of the policy framework will be based on the conservation and enhancement of entire ecosystems – as set out in the UK Sustainable Development Strategy.
- The emergence of Natural England as a powerful champion of the natural environment.

The group has therefore adopted a revised vision:

Our vision is for a country – its landscapes and water bodies, coasts and seas, towns and cities – where living things and their habitats are part of healthy, functioning ecosystems; where we value our natural environment, where biodiversity is embedded in policies and decisions, and where more people enjoy, understand and act to improve the natural world about them.



(Defra)

Overview

The England Biodiversity Strategy *Working with the grain of nature* is about partnership – partnership to deliver more biodiversity, for its own intrinsic value, for the services it provides, and because it enriches people's lives.

Our approach to conserving biodiversity in England comprises a combination of:

- Protecting the best wildlife sites
- Promoting the recovery of declining species and habitats
- Embedding biodiversity in all sectors of policy and decision-making
- Enthusiating people
- Developing the evidence base

Protecting the best wildlife sites

Natura 2000

In December 2004, the EU Commission announced the adoption of the list of Sites of Community Importance (SCIs) for the Atlantic biogeographic region, which included the list of candidate Special Areas of Conservation submitted by the UK under the Habitats Directive (CD 92/43/EEC) http://europa.eu.int/comm/environment/nature/nature_conservation/natura_2000_network/biogeographic_regions/atlantic/index_en.htm

Less than six months later, in July 2005, the UK became the first EU member state formally to designate all of its terrestrial sites of community importance under this Directive. The UK has designated all 608 sites as Special Areas of Conservation, demonstrating the UK Government and devolved administrations' shared determination to protect these important areas. A list of the 608 UK SACs can be found at http://www.jncc.gov.uk/protectedsites/sacselection/SAC_list.asp.

The Environmental Liability Directive (ELD) was adopted by the European Commission in April 2004, aimed at preventing and remedying environmental damage to habitats and species protected under the EC Habitats and Birds Directives, damage to water resources, and to land contamination which presents a threat to human health. The Directive provides another means of protection for SACs and SPAs, and is based on the 'polluter pays' principle, whereby polluters bear the cost of remediating the damage they cause to the environment, or of measures to prevent imminent threat of damage. Policy options for transposition of the Directive are due to go out for public consultation in Autumn 2006.

Sites of Special Scientific Interest (SSSIs)

One of the Government's Public Service Agreement (PSA) targets is to achieve 95% of Sites of Special Scientific Interest (SSSIs) in favourable or recovering condition by 2010. On the basis of the latest available condition assessments, the percentage of the SSSI suite in target condition in September 2006 was 73.1 per cent, up 16.2 per cent on the March 2003 figure, and on track⁴ to achieve the target by 2010.

⁴ The trajectory for the SSSI PSA Target can be found in Defra's Departmental Annual Report www.defra.gov.uk/corporate/deprep/default.htm

4. A holistic approach

A notable SSSI success bringing wider biodiversity benefits is the Sustainable Grazing Initiative in Cumbria. Between 2002 and 2005, EN and RDS secured agreements with graziers over 34,000 ha of SSSI land – 29,500 ha of this has shifted to ‘unfavourable recovering’ condition. This is roughly a quarter of the SSSI land in Cumbria. By working with farmers and supporting shepherding, grazing pressure on upland habitats has been greatly reduced.

A landscape scale approach has been adopted, implementing sustainable grazing by working with all the farmers whose stock graze a mountain fell. This ‘whole fell’ approach has included large areas of land outside of the designated wildlife areas. The results extend well beyond these sites. This sustainable management brings wider biodiversity gains, such as restoration of upland heath and juniper stands, and landscape benefits of habitat restoration and support for traditional farming.

The SSSI legislative regime was significantly enhanced through the Countryside and Rights of Way Act 2000. Without broadening the scope of those improvements, Defra also took the opportunity provided by the NERC Act 2006 to address a small number of gaps in the regime identified since 2000. These changes will help increase the effectiveness of the legislation so as to secure fuller compliance with the existing regime and further deter harm to sites.

Local wildlife sites

Sites of local importance for biodiversity have a vital role to play in meeting overall national biodiversity targets and maintaining local natural character and distinctiveness. Such sites can also support research and education and those that are open to the public offer excellent opportunities for contact with nature. In April 2006, Defra published new guidance www.defra.gov.uk/wildlife-countryside/ewd/local-sites/index.htm designed to promote a more transparent and consistent approach to the identification selection and management of these important sites. The guidance draws together best practice to support local site partnerships in protecting these sites and help raise understanding of their importance.

Promoting the recovery of declining species and habitats

An explicit aim of the strategy is to deliver the UK Biodiversity Action Plan (UK BAP) in England, and an important measure of success in conserving England's biodiversity is how the status of priority species and habitats is changing. Measures of success include improving the extent or condition of habitats and expanding populations or distribution of species. In particular, success can be assessed in terms of progress towards the agreed targets for the priority species and habitat plans identified as part of the UK Biodiversity Action Plan.

In June 2006, the UK Biodiversity Partnership published a three-yearly report on progress between 2002 and 2005. Overall, the proportion of species and habitats showing a positive trend is greater than the proportion for which decline is continuing or accelerating. In addition, this proportion is higher for habitats and species in 2005 than it was in 2002. This suggests that whilst some priority species and habitats are still declining, the last three years have seen more positive signs of progress.

For example, decline of the Heath Fritillary butterfly has been slowed by improvements to woodland management in Kent. Although coppice management has declined overall, careful targeting of management and advice at key sites by the Lead Partner has helped to increase this population.



In Kent, improvements in woodland management have helped slow the decline of the Heath Fritillary
(Peter Wakely, Natural England)

4. A holistic approach

Maintenance targets for the Lesser Horseshoe bat have been surpassed with population increases of 39% in South-West England since 1998. This follows BAP work including site protection and the provision of habitat management advice plus a series of mild winters.



Populations of the Lesser Horseshoe bat have increased by 39% in SW England since 1998
(J J Kaczanow, *The Bat Conservation Trust*)

Species-focussed, well targeted habitat restoration has increased the number of booming Bitterns to 46 against a target of 21 and increased the number of occupied sites to 28 against a 2010 target of 22. Work on this species has been part funded by the European Union LIFE fund and has involved a wide partnership of conservation organisations. It has also helped to drive reedbed habitat restoration and expansion.



Habitat management has played a key part in increasing the numbers of Bittern
(Andy Hay, *rspb-images.com*)

4. A holistic approach

The Deptford Pink is one of a number of species where all of the current targets have been met. Its status as a BAP species has led to increased survey effort and work by the Lead Partner to carry out and encourage appropriate site management. This has resulted in substantial population increases at 10 of its 24 sites across England and Wales. The BAP has also prompted a partnership with the Highways Agency (HA), which has its own Deptford Pink Plan, and the discovery of two previously unknown populations. The HA is now sympathetically managing all known Deptford pink sites on its land.

Work by Local Biodiversity Action Plan partnerships is an important complement to the work carried out or coordinated by lead partners. Successes include the local village group formed to further the conservation of the scarlet malachite beetle, and the adoption of the Newcastle and other LBAPs as supplementary planning guidance.

However, the trends for some species and habitats continue to be a cause for concern. The decline is known to be continuing or accelerating for saltmarsh, and this reflects the pressure on the coast, including coastal squeeze. Perhaps the biggest concern is the limited progress made towards our BAP targets for habitat restoration and expansion. While targets for cereal field margins and lowland calcareous grassland have been achieved through the support of agri-environment schemes, progress is behind schedule for a majority of the habitats, for a variety of reasons. The England Biodiversity Group will place considerable emphasis on large scale habitat restoration over the next four years, working to establish shared priorities, better engagement with regional bodies and a wider appreciation of the benefits of biodiversity-rich landscapes for people.



Saltmarsh - an important resource providing feeding grounds and breeding sites for wading birds and wildfowl
(Peter Wakely, Natural England)

4. A holistic approach

The Mineral Valleys Project – How landscape partnerships can enhance and encourage biodiversity

The Mineral Valleys Project is a £5.2 million five-year programme of environmental improvements in west County Durham running from 2003 to 2008. The programme is led by Natural England and supported by the Heritage Lottery Fund. It contains 14 complementary projects delivered by 10 lead partners within the project area.

The Woodlands and Wildlife initiative led by Durham County Council follows on from work that was done to reclaim colliery, open cast and associated industrial sites which cover much of west County Durham. These sites have historically been reclaimed to agricultural fields or conifer plantations and had little or no biodiversity value. The Woodlands and Wildlife project is re-creating habitats of broadleaf woodland, grassland, heathland, wetland or Juniper scrub on 22 of these sites covering over 300 hectares.

Already the project has benefited biodiversity with:

- One of the largest Juniper plantations (1.5 hectares) in the North East being created at Daisy Hill;
- Great Crested Newts recorded in some of the new wetland habitats;
- Dingy Skipper butterfly recorded in a new grassland site and
- Red Squirrel recorded in new woodlands.



The 'Helping Otters' project aims to encourage breeding otters on the River Wear
(Paul Glendell, Natural England)

Two of the sites, Chapman's Well and Cornsay Colliery have been adopted as Local Nature Reserves.

Other initiatives such as *Action for Wildlife and Helping Otters* are looking at works to benefit specific species such as the Small Pearl-bordered Fritillary butterfly, Barn Owls, Brown Hare and otters. There are also two initiatives *Wild Wetlands* and *Accessing Wetlands and Beyond* which have created new wetland habitats within five miles of each other next to the River Wear and the River Gaunless.

4. A holistic approach

By working together with a wide variety of local partners, Natural England's landscape partnership approach has been able to improve the quality of the environment and encourage biodiversity over a significant natural area. The project has raised awareness of the importance of biodiversity for local people and businesses in the west of County Durham.

For more information on the Mineral Valleys Project see their website at www.mvp.org.uk or contact the project via the Northumbria Team.

Natural England

Lead Partners were asked to list the issues that were posing, or likely to pose, significant threats to the species or habitats, as well as constraints, and to identify possible solutions. Key findings were:

- **Habitat loss/degradation** (particularly due to agriculture, and inappropriate management practice) continues to be a significant threat for a high proportion of species and habitats;
- **Infrastructure development**, particularly on the coast and housing development, is emerging as a particular concern for habitats with nearly two thirds of habitat Lead Partners identifying this as a significant threat. This underlines the importance of the protected sites network and the crucial role of the planning system in safeguarding biodiversity;
- **Climate change** is an emerging threat for a high proportion (46%) of habitats.

Other factors include deer browsing in woodland, a lack of appropriate grazing (both under- and over-grazing) and succession occurring on sites. There appear to be differences in constraints to meeting our BAP targets between the types of plan. Problems with funding or resources were reported by most LBAPs, who also identified a need to increase the priority given to biodiversity conservation by local authorities. For habitats, the most frequently reported constraint is difficulty with policies or designation (for example, concerns over whether Environmental Impact Assessment Regulations will effectively protect semi-natural habitats outside of designated sites, and the lack of a marine protected areas network and inadequate control of damaging activities in marine and coastal habitats). For species, the most reported constraints were a need for more research and survey, and for improved habitat and species management. The solutions suggested by lead partners, relating to incentive schemes, legislation and policies, research and communications, will be of considerable help to the England Biodiversity Group in taking forward our detailed work plans.

Over the past two years, a review of UK BAP targets has been undertaken to update targets that have expired or need changing in the light of recent information, and particularly in the light of the 2010 target to halt biodiversity loss. For the first time, they have been allocated to the four countries. Summaries of the proposed new targets are incorporated in work programmes for each relevant workstream at Chapter 8.

The list of priority species and habitats is also being reviewed to ensure that the UK BAP remains responsive to both new information and conservation needs. The initial stage has involved a scientific assessment of conservation status. This list is likely to be considerably longer than the current list of 45 habitats and 475 species, partly because there have been continuing declines in common species and partly because there are better data and tools available and more time to complete this exercise than in 1994. The next stage will be to categorise species according to

4. A holistic approach

their predominant needs, and on the basis of whether action should be planned at the UK or the country level.

Ultimately, the vision is of fewer, more integrated, better plans, linked into policy sectors, with a presumption of using the workstream structure to deliver habitat, species and ecosystem scale priorities for England's biodiversity. This should assist in strengthening the essential link between the UK Biodiversity Action Plan and the England Biodiversity Strategy. In general it is envisaged that the two processes should work together with strategy workstreams providing the policy input, freeing up action plan steering groups to focus on management, research and survey and, for habitat groups in particular, the delivery of specific habitat restoration and re-creation projects.

The emerging list will be an important reference source, bringing all the scientific information on species and habitats together in one place. It will also be used to inform the statutory list under the Natural Environment and Rural Communities Act, which will replace the current list published under the Countryside and Rights of Way Act. The England Biodiversity Group considers that publication of this new statutory list should await completion of the review.

Funding for Biodiversity

Adequate funding is crucial if England is to make a full contribution to the 2010 target to halt biodiversity loss. The England Biodiversity Strategy recognised in 2002 that there would continue to be a need for direct and indirect public funding, justified by the public benefits that biodiversity brings. The same is true today. As is the need for the voluntary and private sectors to continue to provide important additional funding complementing that of the public sector.

Funding for biodiversity conservation is provided by a wide range of organisations and initiatives. For some organisations biodiversity conservation is a core objective, accounting for a large proportion of their overall budget, while for others it will represent a minor proportion of overall expenditure. It is therefore difficult to calculate the precise total expenditure, particularly as indirect spend on biodiversity is often not separately identified. Many expenditure items are designed to meet more than one policy objective, for example tree planting, which promotes biodiversity but might be largely driven by a demand for landscaping.

The Economics and Funding workstream has built up a more detailed picture of the amount money spent on protecting and enhancing biodiversity in England, and this has been used to develop the indicator E1 on the amount of expenditure on biodiversity in the UK⁵. Further information has been gathered as part of a project commissioned to estimate the costs of delivering the revised UK BAP targets⁵.

Provisional figures suggest a year-on-year trend for increasing public sector expenditure in England. By 2004/05, expenditure (£214m) had increased by 71% compared with the amount spent in 2000/01 (£125m). The trend for non-governmental organisational expenditure in England is less clear and has fluctuated over the last five years, stabilising at about £100 million in 2004/05.

Work commissioned as part of a project to estimate the cost of the revised UK BAP targets⁶ indicates that five sources (Defra, Wildlife and Countryside Link organisations, English Nature,

⁵ <http://www.ukbap.org.uk/GenPageText.aspx?id=98>

⁶ It is important to note that these figures relate to expenditure on Habitat Action Plans (HAPs) and Species Action Plans (SAPs) only.

4. A holistic approach

Forestry Commission and Heritage Lottery Fund) account for £184 million or 92% of estimated Biodiversity Action Plan (BAP) related expenditure in England. Agri-environment schemes are the major source of BAP-related expenditure in England, accounting for almost half of the current annual spend on BAP of c£201m.

- The combined total of the Wildlife and Countryside Link organisations (WCL) is the second largest contributor to BAP expenditure in England. Net of external funding, between £65 and £80m of spending directly relates to BAP habitats and species in the UK, with an estimated BAP-related spend of approximately £40 million in England.
- The next largest contributor of BAP-related expenditure in England was English Nature (EN). It is estimated that £18.6m of this conservation expenditure is directly related to the UK BAP.
- The Forestry Commission (FC) is the next largest contributor. The overall estimate of BAP-related expenditure by the Forestry Commission in England is £18 million.
- The Heritage Lottery Fund (HLF) is the other major contributor to BAP-related expenditure in England. HLF funding for biodiversity has been relatively constant at approximately £17m per annum between 2000/01 to 2004/05. Indications are for 2005/06 that there has been an increase in biodiversity spend to around £25m. HLF funding was extended to include priority species in 2002, although a number of priority species will have benefited through general habitat enhancement projects. To 2005, HLF has funded 10 priority BAP species projects that include Black Grouse, Basking Shark, Red Squirrel, Water Vole, Horseshoe Bat and Red Kite in England.

HLF funding has also helped to contribute to a range of UKBAP targets e.g. 80% of wood pasture/parkland habitat creation targets; 43% of chalk downland, 44% of coastal and lowland grazing marsh, and 66% of the fen conservation and restoration targets. The targeted Tomorrow's Heathland Heritage programme alone has delivered 76% of heathland BAP targets.

There are a number of other important biodiversity funding sources. In response to the strong support demonstrated through public consultation, the Big Lottery has allocated up to £354 million for the natural environment and access, to be spent on parks, community spaces, community enterprise and improved access to the natural environment. Recently, the Big Lottery has established the UK wide Breathing Places small grants programme in partnership with the BBC. This programme (£5 million total) is designed to provide funding for small groups who are inspired by the BBC's campaign. Improved biodiversity, and wildlife habitats which are accessible to all, are key aims of the scheme.

The Landfill Communities Fund (LCF) – formerly the Landfill tax credit scheme has a biodiversity category, introduced in October 2003, which is another important source of funding. Some of the larger distributors of LCF funding are now providing significant funding for biodiversity. For example the "Enriching Nature" programme devised by SITA Trust and distributed in partnership with the regional biodiversity fora is providing a minimum of £13.5 million for BAP habitats and species projects. Other significant LCF funders include Biffaward and Grantscape.

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In 2006, an additional £10m was allocated by the Government to the Landfill Communities Fund. Increases such as this means that in the future more money is likely to be allocated to biodiversity project through the LCF.

The England Biodiversity Group will continue to work with funding bodies to improve access to funding for biodiversity. Demonstrating the socio-economic benefits of biodiversity, including the ecosystem services it provides, will be an important part of this. In the meantime there have been some real successes which should be celebrated.

Embedding biodiversity in all sectors of policy and decision-making

Halting the loss of biodiversity by 2010 – and beyond

The England Biodiversity Strategy *Working with the Grain of Nature* represents the bringing together of England's key contributions to achieving the EU Gothenburg target to halt the loss of biodiversity by 2010. The international focus of this work was given further emphasis by the major stakeholder conference held in Malahide in Ireland in May 2004, when contributors to the England Biodiversity Strategy joined biodiversity stakeholders from across Europe to create the "Message from Malahide" www.eu2004.ie/templates/document_file.asp?id=17810.

The Malahide conference also saw the launch of IUCN's "Countdown 2010" initiative to raise awareness, in Europe of the 2010 target to halt biodiversity loss which provides an additional driver for biodiversity delivery. The initiative was endorsed by Government endorsement and given added prominence through the UK's presidency of the EU.

At a Nature Directors' meeting held under the UK Presidency of the EU, Tamas Marghescu, Regional Director for Europe, IUCN stressed the urgent need for all Member States to take action now to meet the 2010 target. In May 2006 the European Commission published its long awaited Communication on halting the loss of biodiversity by 2010 including an EU action plan. The England Biodiversity Group welcomes the communication which reflects the approach we have adopted of improving integration of biodiversity with wider policy aims.

Climate change

Substantial new evidence of the serious challenge posed by climate change has been published during the last four years. Recent studies have found that the expanding range and abundance of some mobile species including butterflies, marine molluscs, migratory birds and non-native invasive plants are consistent with patterns of warming seen in England over the past thirty years. Modelling studies show that under likely future climate scenarios these changes will accelerate, and for those species affected that are unable to move, climate conditions will become increasingly hostile. One study of the potential distributions of breeding birds in Europe predicted northward shifts in ranges by as much as 1000 km by 2070, with on average only 40% overlap with existing



Scientists are predicting an increase in the frequency of heavy rain days over the coming years
(Keith Dawson, Independent Photographer)

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distributions. This implies that 60% of current breeding areas will be unsuitable for these species within 70 years. The populations will inevitably decline unless they are able to disperse to and establish themselves in new areas.



The rising sea level is just one of the serious challenges we must face as our climate changes (*Defra*)

Other very serious challenges of climate change include rising sea levels, increasing frequency of extreme events and acidification of the oceans. All the increasing pressures linked to climate change are acting in addition to the current threats to biodiversity such as pollution, over-grazing, water stress, inappropriate management and habitat fragmentation. However, possibly as significant for biodiversity will be the effects of responses, mitigation and adaptation in other sectors, such as new crops and pests in agriculture, shifting patterns of marine fisheries, increasing demand for water, and promotion of renewable energy sources. These radical changes in use and management of our land, water bodies and seas provide both opportunities and threats for biodiversity.

Thanks to the growing numbers and skills of volunteers and long term investment in science from many sources we are beginning to collect the detailed information necessary to assess current impacts of climate change, to develop our understanding, and to build better models to predict how climate change might affect biodiversity in the future. All this information is necessary to help to plan future conservation activity to ensure opportunities are exploited and threats are minimised to protect our biodiversity.

However, in the face of these potentially very significant impacts, scientific uncertainty should not be used as an excuse for inactivity. There is much that we can do now to give a better future for biodiversity. The Conference of the Parties to the Convention on Biological Diversity in March 2006 encouraged all the Parties to integrate biodiversity considerations into all their relevant national policies, programmes and plans in response to climate change, taking into account the maintenance and restoration of the resilience of ecosystems which are essential for sustaining the delivery of their goods and services (Decision VIII/30). We have already started this process in England by establishing a Climate Change Adaptation workstream as part of the England Biodiversity Strategy – to provide better guidance on impacts of climate change, identify research needs and promote adaptation of policies and programmes within the Strategy. This will need to be long term activity as we gain new knowledge and review our successes and failures as part of an ongoing process of adaptive management.

Role of Biodiversity in mitigating climate change

Under the Convention of Biological Diversity (CBD), Parties have an obligation to identify and address threats to, or causes of, loss of biodiversity, which includes climate change. Biodiversity management can contribute to climate change mitigation and adaptation. The UN Framework Convention on Climate Change (UNFCCC) objectives include the stabilisation of greenhouse gas concentrations within a time frame sufficient to allow ecosystems to adapt to climate change. The UNFCCC calls for the conservation and enhancement of terrestrial, coastal and marine ecosystems as sinks for greenhouse gases; and the technical report indicates that there are significant opportunities for mitigating climate change, and for adapting to climate change while enhancing the conservation of biodiversity.

Mitigation of climate change involves reducing the emissions of greenhouse gasses from energy and biological sources and enhancing the sinks of these gases. Biological mitigation includes conserving sinks, increasing the amount of carbon sequestration by sinks, reducing emissions by substitution of fuels with biomass and adoption of different agricultural practices. Sinks for greenhouse gases such as carbon dioxide (CO₂) include existing woodland and forestry plantations, marine ecosystems and soils, including those of agricultural systems, grasslands, peatlands and wetlands. In the text below figures for amounts of carbon are presented in tonnes (t), mega tonnes (Mt) and giga tonnes (Gt) of carbon (C), per hectare (ha).

Adaptation consists of activities that will reduce vulnerability of human and natural systems to climate change. In addition to temperature increase, and a northwards shift in climatic zones, climate change is likely to result in sea level rise and bring changes in patterns of precipitation and extreme weather events, with increased droughts and flooding. The shifts in climatic zones and environmental conditions are likely to affect the distribution patterns of species and could cause changes in community structures. Adaptation should be incorporated into mitigation strategies so as to conserve biodiversity and associated ecosystem functions and provision of goods and services, at the same time as reducing emissions of greenhouse gases.

Mitigation by increasing carbon sequestration

Sink	Mitigation strategies	Associated adaptation
Marine	<p>In marine systems, the growth of algae is responsible for almost a third of the world's primary production, or conversion of solar energy and carbon from the atmosphere into biomass. In addition, the world's oceans provide a sink of 4000GtC, with a circulation between the air and the water of 90GtC per year that is driven by biological, chemical and physical processes. These various inter-related processes are not well understood and ways of enhancing marine sequestration are currently of research interest.</p> <p>Recently, problems have been identified associated with the scale of carbon uptake and resultant acidification of the oceans. Marine organisms use carbon for primary production and in carbonate chemistry. Shifts in the pH and productivity may affect marine ecosystems and fisheries, with further effects of the CO₂ regulation role of the oceans and climate change.</p>	<p>In addition to effects of temperature increase, changes in freshwater runoff from land may affect thermohaline gradients and plankton with consequences on other organisms harvested from the seas for food. Understanding and prediction of these changes will be an important step in providing appropriate adaptation.</p> <p>Coastal communities are able to tolerate extreme conditions of the coasts. Dunes and salt marshes provide habitat for a range of specialist plant species, which can absorb wave and wind energy and stabilise the substrate. Adaptation to counter sea level rise may include creation of more dune and salt marsh habitat to reduce storm damage and erosion of our coasts, but Integrated Coastal Zone Management will be required to avoid adverse impacts on other important goods and services provided by our marine habitats.</p>

Sink	Mitigation strategies	Associated adaptation
Woodlands	<p>The primary production and growth of woodland also provides a carbon sink. In the UK, it is estimated to represent around 90MtC, with two thirds of this locked into broadleaved woodland and the rest in conifers. The overstorey biomass in a well-stocked semi-natural broadleaved woodland can take up 187tC per ha per year. In addition to the biomass of the trees, woodland soils contribute to carbon sequestration and can achieve greater rates of uptake than grasslands or agricultural soils. Mitigation based on preserving or enhancing this sink includes conservation of existing woodland, avoidance of deforestation and considered re-forestation and woodland management. It is estimated that almost 3.5 MtC could be removed from the atmosphere and stored in the timber between 2006 and 2020 under the 1990 English Woodland Grant Schemes, assuming current planting levels. If these schemes prove successful across the UK, almost 25% of the land area could be woodlands and sequester around 8MtC per year by 2050.</p>	<p>Woodlands also provide ground cover that helps with interception of rain, enhancing percolation down to groundwater and reducing the speed of runoff from the land surface and associated erosion. This could contribute towards reducing anticipated water supply and flood protection problems associated with climate change. Creation or enhancement of woodland may contribute to adaptation for nature conservation, by increasing the landscape permeability for movement of species which depend on woodland.</p> <p>The development of ecological networks should provide heterogeneity at a landscape scale to enhance the resilience to effects of climate change for a wide range of species, not just woodland species, to enable their dispersal beyond their main centres of distribution.</p>
Soils	<p>Soils, especially peaty soils or organic soils found in the north and west, are one of the UK's largest sinks for CO₂, acting as a sink for around 6 GtC. Agricultural soils sequester carbon at different rates depending on the land use, see table below.</p>	<p>Warmer temperatures and less rainfall may reduce soil moisture, and drying soils release stored carbon and are prone to erosion. Establishment and maintenance of ground cover, such as woodland and semi-natural grasslands could help reduce this effect and enhance biodiversity.</p>
Wetland and peat	<p>The retention of peat and peat forming systems would help contribute to carbon sequestration. The rate of carbon uptake by peatlands in some systems has been given as 0.22 to 0.25tC per ha per year) in one study, but it can vary from 0.14 to 0.72tC per ha per year, as it is affected by temperature and rainfall. This means that it may also be affected by climate change. Although the rate of carbon uptake is slow, peat accumulations have developed over 1000s of years and represent a large sink of carbon. Peat contains the equivalent of approximately two thirds of all carbon in the atmosphere and carbon equivalent to all terrestrial biomass on the earth. There were 17200km² of peatlands with 1000km² actively growing peatland in the UK in 2002.</p>	<p>Peat forming systems are typically wetlands, peatlands and bogs, where cold, waterlogged conditions inhibit natural decay of the organic matter, which is formed by assemblages of plants that have evolved special characteristics to survive in the generally inhospitable conditions. An example of such a plant community is cotton grass blanket mire (<i>Eriophorum vaginatum</i>) which includes plants such as rushes, sedges and sphagnum mosses and a range of characteristic animal life. Other wetlands such as marshes and reedbeds provide carbon sequestration and support specialist assemblages of plants and animals, which are able to survive periodic inundation and water logged soils. Effects of increased droughts and flooding, could be ameliorated by wetlands. Many wetland species are</p>

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Sink	Mitigation strategies	Associated adaptation
Wetland and peat (continued)	These ecosystems are not generally productive for agricultural use, some are exploited for peat stripping, and some have been converted to forestry use or drained for grazing lands, and this results in a loss of carbon from the sink. While wetlands may act as a sink for some forms of carbon, such as CO ₂ , they may also act as a source for others, such as methane, but these emissions are considered negligible compared to anthropogenic sources.	specialised to tolerate wetland conditions, and are capable of withstanding erosion and stabilising or trapping sediments, which makes this type of ecosystem well-suited as an element of river engineering and flood protection. Wetlands could contribute to reducing problems associated with water supply because they enable retention of water or slow infiltration to groundwater and some wetland systems also provide services such as transformation or removal of pollutants and sediments.

Mitigation to reduce emissions may be through substitution of fossil fuels with renewable energy such as biofuels, hydroelectric, solar, wind or wave power and through changes in farming practice.

Sink	Mitigation strategies	Associated adaptation
Biofuels	Development and use of biofuels, such as coppice, sugar or oil bearing crops (eg rapeseed) would enable the crop to lock up solar energy and carbon dioxide in the biomass and release it again when the biofuel was burned, so there is no net gain or loss of carbon in the atmosphere through the short cycle. Biodiversity contributes to the growth of these crops, providing services such as pollination, biological pest control, sources of genetic material and essential soil conditions. Short rotation coppice has been shown to develop soils with good carbon sequestration rates, up to 1.6 MtC per ha per year.	Promotion of biofuels must have regard to potential adverse effects on biodiversity associated with large areas of monocultures of single species biomass, monotonous habitat structure and regular intensive cropping regimes. There is potential to enhance biodiversity if such schemes are planned to accommodate biodiversity and favour adaptation to climate change. This could be through sympathetic management regimes, creation of linkages with existing scrub and woodland to enable exploitation of available habitat by woodland species and favour dispersal or movement along corridors or patches between woodland in different geographical areas. Other enhancements are possible along the lines of current Environmental Stewardship Schemes.
Alternative Energy	Energy sources such as wind farms, solar panels, and wave harnessing reduce emissions, but there may be a wide range of other impacts on the environment, such as those associated with the use and disposal of metals from batteries.	Creation of areas for harnessing alternative energy could adversely affect existing habitat, and disrupt landscape patterns that favour dispersal, and will require careful planning to avoid such impacts.

Sink	Mitigation strategies	Associated adaptation
Livestock Farming	<p>Livestock farming is one of the largest sources of the greenhouse gas methane. A typical dairy farm on 180 ha produces a net flux of methane of 316 kg per ha per year. Reduction in stocking rates may be promoted under future climate change mitigation strategies.</p> <p>Grazing grasslands with no tillage, green manure and straw applications can sequester 0.3 – 0.6 tC per hectare per year. Soils under intensively managed crops are poor at carbon sequestration.</p> <p>Up to 40% of the methane and 60% of nitrous oxides in the UK are from agriculture. The use of inorganic fertilizers in agriculture contributes to release of oxides of nitrogen, and incentives to promote organic farming will help reduce these emissions.</p>	<p>Reduction in stocking rates must be carefully considered since it could affect the current land use with impacts on soil function of carbon sequestration provided by permanent pastures and grazing lands and impacts on farm biodiversity due to changes in the types of forage and feed crops grown.</p> <p>Grazing animals are important in sustaining many habitat types that would otherwise succeed to scrub, and such changes may affect the heterogeneity of the landscape with associated effects on dispersal opportunities for some species. A European study has indicated that changes in farming as a result of climate change may include large areas of land becoming economically marginal, which could also offer opportunities for habitat creation or restoration to enhance the landscape heterogeneity and favour dispersal.</p>
Organic Farming	<p>Organic farming exploits biodiversity and natural processes to enhance soil fertility, pollination and pest control; it also uses 30-50% less energy than conventional intensive farming since there are no energy requirements for fertilizer production and use.</p>	<p>Linking large areas of organic farming could contribute to an effective reduction in the environmental footprint of agriculture in terms of impacts on air and water quality as well as a reduction in greenhouse gases. This represents a landscape scale reduction in pressures on biological systems that could also enhance their resilience to climate change.</p>

Mitigation, adaptation and land use change

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Sink	Mitigation strategies	Associated adaptation
Land Use Change	<p>Consideration of other socio-economic drivers of change will also be important. Land use changes that may be in response to socio-economic or other consequences of climate change can release carbon from sinks, especially from soils and woodland or forest biomass.</p> <p>In addition to greenhouse gasses, land use changes may also affect climate, by changing the distribution of solar energy and evaporation and transpiration from soils and plants, which affects atmospheric moisture that is also a greenhouse gas.</p>	<p>Increase or enhancement of natural carbon sinks should include consideration of the needs of biodiversity, such as appropriate species and structural composition, sympathetic management and creation of links or a 'porous' landscape of habitat types that enables dispersal and movement of species following shifts in favourable climatic conditions. However re-instatement or creation of natural sinks should not be at the expense of other ecosystems, such as peatlands and wetlands, grasslands or less intensive agricultural land since these systems provide important roles in environmental regulation and support a range of plants and animals that contributes to the overall habitat mosaic and diversity of species and genetic material in the landscape. This variety of life also provides resistance and resilience to change, as slight differences between species or in genetic make up within species enable each to make different use of different conditions. Proposals for changes in land use should be based on an understanding of ecosystem functions, interactions between ecosystems and the goods and services they provide and consideration of the full range of impacts and benefits.</p>

Table showing carbon sequestration by soils under various agricultural or forestry uses

Cover/Use	t C per ha per year	Change in use	t C per ha per year
Forest management	0.4-0.5	Arable to grass	0.8
Crops	0.3	Grazing to agro-forestry	3.1
Continuous wheat or maize	0.05-0.5		
Grazing land	0.3-0.5		

Data in Table from IPCC (2000) IPCC Special Report on Land Use, Land-Use Change and Forestry. A special report of the Intergovernmental Panel on Climate Change, eds R T Watson, I R Noble, B Bolin, N H Ravindranath, D J Verardo & D J Dokken PCC Secretariat, c/o World Meteorological Organisation, Geneva

Modernising Rural Delivery

The four years since the publication of the *Working with the grain of nature* have seen significant changes in the rural delivery landscape, many directly affecting the delivery of biodiversity priorities. Following Lord Haskins' Review of Rural Delivery in 2003, Defra published the Rural Strategy 2004, www.defra.gov.uk/rural/strategy, setting out the Government's new devolved and targeted approach to rural policy, and modernised delivery arrangements. An important thrust of the strategy is to bring together resources and decision-making at a more local level, to empower regional and local partners to deliver the overall aim of sustainable development in rural England.

The principle of sustainable development was carried through to the Natural Environment and Rural Communities (NERC) Act in March 2006 which set up Natural England as a powerful champion for the natural environment, bringing together the strengths of English Nature, parts of the Countryside Agency, and most of the Rural Development Service to conserve and enhance our landscapes and biodiversity and importantly to help people enjoy them. It also established the Commission for Rural Communities as a strong national rural adviser, advocate and watchdog, charged with ensuring Government policies are making a real difference on the ground in tackling rural disadvantage.

Clause 40 of the NERC Act extends to all public authorities the duty to have regard to the conservation of biodiversity in the exercise of their functions. The purpose of the duty is to catalyse a culture shift so that public bodies make biodiversity a natural an integrated part of their decision making process. Members of the local and regional workstream of the strategy are overseeing guidance on the implementation of the biodiversity duty which will be published shortly.

In addition, the NERC Act further protects SSSIs from damage, clarified national parks legislation, and strengthened the enforcement powers of those fighting wildlife crime, and curtailed the inappropriate use of byways by motor vehicles.

The Commons Act

Common land is about 3% of the area of England. It is an important part of our national heritage, valued for agriculture, recreation, landscape and nature conservation. But much of it is at risk, mainly as a result of overgrazing in the uplands (although in lowland areas under-grazing is the primary problem) and also from abuse, encroachment and unauthorised development.

About 55% of common land in England is designated as SSSIs, but 43% of this is classified by Natural England as in poor or declining condition. The Act will therefore make an important contribution to helping deliver our commitments on biodiversity and improved management of common land – particularly in helping to achieve the PSA target to bring 95% of SSSIs into favourable or recovering condition by 2010 – and also deliver real benefits in terms of sustainable farming, and public access for current and future generations.

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Defending Biodiversity – The Ministry of Defence Approach

A recent assessment of current information about biodiversity on the defence estate showed that approximately 80% of the estate supports nationally important habitats and species. Of the priority habitats and species highlighted as being under threat in the UKBAP, 35 habitats and 138 species are known to occur on both the rural and built defence estate.

There are several statutory and policy obligations on the Ministry of Defence (MOD) relating to managing this biodiversity. Under the NERC Act 2006, the MOD as a Government Department has a duty to have regard to the purpose of conserving biological diversity in carrying out its functions. In Scotland, the Nature Conservation (Scotland) Act 2004 places a duty on every public body to further the conservation of biodiversity consistent with the proper exercise of their functions.

The wider sustainability agenda also informs MOD's biodiversity conservation work. The Framework for Sustainable Development on the Government Estate gave MOD 5 targets, including having our SSSIs in favourable condition and management planning for biodiversity.

To fulfil these obligations MOD is using the opportunity provided by these targets to improve its understanding of the biodiversity interest across the totality of the estate, our ability to contribute to the UK's Biodiversity Action Plan targets and the issues for both biodiversity and defence delivery. To facilitate this, the MOD has developed strategic objectives to direct the Department's biodiversity work and an audit of the estate's biodiversity is being carried out to improve our understanding of biodiversity on the estate.

The development of these Strategic Objectives has taken both the new targets provided by the SD Framework, and the broad range of other biodiversity and conservation activities that take place across the estate; and combined them to outline the overarching biodiversity objectives for the estate for the future, and support the biodiversity management that has occurred for many years.

Strategic Objective 1: To be an exemplar in the management of designated sites.

Strategic Objective 2: To ensure natural environment requirements and best practice are fully integrated into the estate management.

Strategic Objective 3: To contribute, as appropriate, to the UK Biodiversity Action Plan (and devolved biodiversity strategies).

These strategic objectives are supported by further sub-objectives and key initiatives and activities to implement them, such as through Integrated Land Management Plans (ILMPs).

Land management planning on the Defence Estate includes provisions for addressing biodiversity within the existing structure of ILMPs. MOD is currently reviewing the current status of these plans, to identify which sites need plans and to ensure that existing plans contain management action linked to BAP targets, where appropriate.

The challenge for the future, for both MOD and its partners, is to ensure that the biodiversity interest of the defence estate is recorded accurately, that sites of importance are identified and have management plans or actions agreed taking into account the revision and review of BAP targets, and new information as it becomes available.

Ministry of Defence

The UK Sustainable Development Strategy and taking a more strategic approach to natural environment policy

In March 2005, Government launched *Securing the future – delivering the UK sustainable development strategy*. This set out a new purpose and principles for sustainable development and new shared priorities agreed across the UK, including the Devolved Administrations. The strategy included a new integrated vision, with stronger international and societal dimensions, five principles⁷, with a more explicit focus on environmental limits, four agreed priorities – sustainable consumption and production, climate change, natural resource protection and sustainable communities – and a new indicator set, which is more outcome-focussed, with commitments to look at new indicators such as on wellbeing.



(Andy Hay, rspb-images.com)

⁷ Living within environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

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The strategy recognised the need to consider ecosystems as a whole, and to increase our understanding of how ecosystems work, their resilience and vulnerability, how they are affected by cumulative and combined pressures, and the value of ecosystem goods and services that they provide. Indicators of the success of the strategy (www.sustainable-development.gov.uk/indicators/index.htm), include bird population indices and the status of priority habitats and species.

The strategy committed Defra to integrating natural environment policy – by which we mean policies on air, water, land (including soil) and biodiversity. This integrated policy framework will be based on the conservation and enhancement of whole ecosystems. This is a long term agenda which will involve further developing and applying expertise on key areas such as environmental limits and valuation, and is intended to deliver a wide range of benefits such as enabling us to:

- Set ecological objectives for air, water, land/soil and biodiversity with the aim of maintaining healthy, functioning ecosystems
- Identify and/or set environmental limits
- Quantify the 'hidden' value of ecosystem services
- Deal more effectively with cumulative pressures, including the threat of climate change
- Set priorities and deal with conflicting demands
- Develop new and improved tools to help policy and decision makers ensure that environmental impacts are fully taken into account

In the longer term, this new approach will help to inform wider decision making across Government in the context of Sustainable Development.

Invasive and non-native species

Many non-native species are part of our biodiversity and cause no problems. But invasive non-native species are widely recognised as having serious and damaging effects on biodiversity, reflected in the EU Biodiversity Communication and in Article 8(h) of the Convention on Biological Diversity (CBD). There are adverse economic and social as well as environmental impacts; this is therefore a cross-cutting issue affecting a number of different workstreams of the strategy.

In March 2005, Defra published the Code of Practice for the horticultural industry and work is in hand on another for the companion animal industry. Specific measures have also been taken forward through the NERC Act to regulate the sale of invasive non-native species and power for the Secretary of State to issue or approve codes of practice in connection with non-native species. This latter provision will give such codes particular weight in any proceedings.

At the higher level, Defra has also established a Great Britain wide Programme Board to provide a coherent and strategic overview of the issues, and a working group has now been set up to start the important work of developing a GB wide strategy.

Global Strategy for Plant Conservation

The Global Strategy for Plant Conservation committed the UK to achieving 16 outcome oriented targets by 2010. The UK quickly forged a response, Plant Diversity Challenge, which identified the critical UK contribution to each target.

These targets include developing prioritised checklists for species, identifying those species that deserve particular conservation attention through the red-listing process and places of exceptional botanical importance through determining Important Plant Areas. Identifying mechanisms to conserve species, encouraging the sustainable use of plants, promoting greater awareness about plants and plant diversity and ensuring the UK has the skills and knowledge to identify and conserve species for future generations are important outcomes from the strategy.

A conference of partners from the statutory and voluntary sector met in April 2006 and reviewed progress in each area. For each target significant achievements were highlighted as well as issues that needed to be resolved if the UK is to meet its 2010 commitments.

Making sure we conserve the UK's plant diversity is of utmost importance and the recent assessments highlighting the condition of statutory sites (SSSI) and report on the status of BAP species indicates that we have a long way to go if we are achieve our aims. Critical to this will be to make sure the mechanisms we have available are appropriate and targeted (Environmental Land Management Schemes, BAP and SSSI designation). To conserve threatened plant and fungus species effectively in their natural environments their needs must be fully integrated within all habitat and wider-landscape initiatives. The area of habitats in 'favourable' condition does not necessarily indicate consistent management for important plant species; only those sites which have plants or fungi as a 'designated feature' are explicitly monitored for these, and this is only a proportion of those which contain threatened plants and fungi. Although there are steps being taken to recognize plant requirements (for instance, SSSI management takes account of some BAP species) integration needs to include other threatened species requirements.

Plant Diversity Challenge is proving to be an effective champion for plant conservation and if we are to meet the Global Strategy targets and UK commitments we must ensure there is effective communication and join-up across UK BAP strategies, country strategies for England, Scotland, Wales and Northern Ireland and other policy initiatives.

The good news is that we have an active and able community of voluntary organisations, societies and local groups committed to identifying, recording and conserving the UK plants and fungi. Encouraging, harnessing and supporting these skills, knowledge and action will be key to the quality of the UK's achievements in 2010.

Plantlife

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Sustainable management by sector

Work carried out under each workstream of the strategy to embed biodiversity into all areas of policy and decision-making is described in detail in the progress reports. Some of the successes are highlighted below.

Agriculture

The impact of agriculture is a key area where integration of biodiversity is vital to our aims, and we are making good progress with this.

The Government's main policy statement on farming remains the Strategy for Sustainable Farming and Food (SFFS). At its heart is a drive to make farmers more market, and less subsidy focused while managing their businesses in more environmentally and socially responsible ways.

Implementation of the reforms to the CAP agreed in June 2003 is central to the SFFS. Farmers are now free to farm to the demands of the market as subsidies have been decoupled from production. This reduces the negative environmental impacts of farming, as subsidy is dependent on compliance with environmental standards.

Another key milestone of the SFFS has been the launch of Environmental Stewardship which supports farmers to change their farming methods to conserve biodiversity. Farmland birds are among the species benefiting from the scheme and the Government's target to 'reverse the long-term decline in the number of farmland birds by 2020', is on track. Higher Level Stewardship represents a new and major delivery mechanism for the many special sites and priority habitats and species that require more complex and costly management, and is targeted to where it can do most good.

*The Forward Look*⁸ of the *Strategy for Sustainable Farming and Food Strategy*, published on 18 July 2006, sets out key areas of ongoing work that need to be taken forward, building on the work that has already been put in place under the SFFS at both a national and regional level. It has five priority themes: succeeding in the market; improving the environmental performance of farming; sustainable consumption and production; climate change and agriculture and animal health and welfare.

⁸ The Forward Look is supportive of the principles laid out in the Secretary of State's speech 'One Planet Farming' at the Royal Show 2006. This speech and the Forward Look can be found at www.defra.gov.uk/farm/policy/sustain/index.htm.

Biodiversity and Animal Health and Welfare

Livestock farming practices which maximise animal health and welfare, can have positive benefits for biodiversity. Positive effects on the environment are achievable from all management systems and husbandry regimes.

Considerable research has been undertaken on management of grassland and moorland to maximise animal production and to increase biodiversity. These have found that a reduction in stocking density, rotational grazing and high standards of husbandry maximised livestock quality and thus output per hectare. These management changes also resulted in a reduction in overgrazing and increased sward diversity.

A general reduction in stocking density decreases nitrogen and phosphorus losses and thus has a positive effect on sward biodiversity and by knock-on effects for insects, birds and mammals. It should be noted that simply reducing stocking density does not directly improve health and welfare and that associated management changes must be implemented to optimise this.

Retention and replanting of hedgerows and trees can have benefits to livestock by providing shelter from the elements and facilitate controlled rotational grazing allowing recovery and resting of the pasture. The biodiversity benefits of hedgerows and mature trees are well recognised.

Managing pasture carefully prevents poaching and water-logging which are detrimental to grassland biodiversity. Animals grazing water-logged pasture have an increased risk of becoming infected with parasites and liver flukes with intermediate hosts, which thrive in these wet environments. Water-logging and poaching increases the risk of foot rot in hoofed animals. Lameness is a recognised welfare concern and has major impact on animal production.

Grazing can be essential for maintaining some environments and maximising biodiversity. Chalk downland and wet land systems require grazing of competitive species to allow the less vigorous plants to grow thus maximising plant biodiversity.



Sustainable grazing management can maximise livestock quality and output with wider biodiversity gains
(Natural England)

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Farming and animal health practices can have severe impacts on the environment if care is not taken. Defra is supporting the industry led 'Sustainable Control of Parasites in Sheep' (SCOPS) initiative which develops management plans to ensure effective and safe use of dips and drugs. Some of these chemicals can have devastating effects on fish and amphibians if allowed to enter watercourses.

Another important initiative is the Integrated Pollution Prevention and Control (IPPC) legislation, which covers indoor intensive pig and poultry sectors. Farms are required to control the ammonia emissions. In the long term this is likely to result in better designed housing and management systems which in turn will improve animal health and welfare. Similar schemes covering other pollution and emissions from farming are also being developed.

It is important to note that some intensive farming systems can be more beneficial to biodiversity than extensive systems. Intensive systems tend to have lower levels of ammonia pollution. A farmer may have an intensive farming system in one corner of his land and use the rest of his property for forestry, set aside or wildlife purposes. In other circumstances multiple activities can be undertaken on one piece of land. Defra is currently funding research investigating the integration of extensively reared poultry in commercial woodlands.

In conclusion, good husbandry, health and welfare in all farming systems can have benefits to biodiversity and should be encouraged.

Water and wetland management

Taking a catchment-wide approach to land and water management is an essential element in securing biodiversity improvements of our water and wetland habitats. Work under way to promote catchment-sensitive farming will help achieve this. So will improved regulation of water abstraction as a result of the Water Act 2003, and expenditure by water companies to rectify damage on Natura 2000 sites and SSSIs as part of the 4th Periodic Review of Water Prices covering the period 2005-10. These mechanisms will help to fulfil the requirements of the Water Framework Directive, which is the single most important driver in taking forward Defra's water policy, set out in "Directing the Flow", published in 2003.



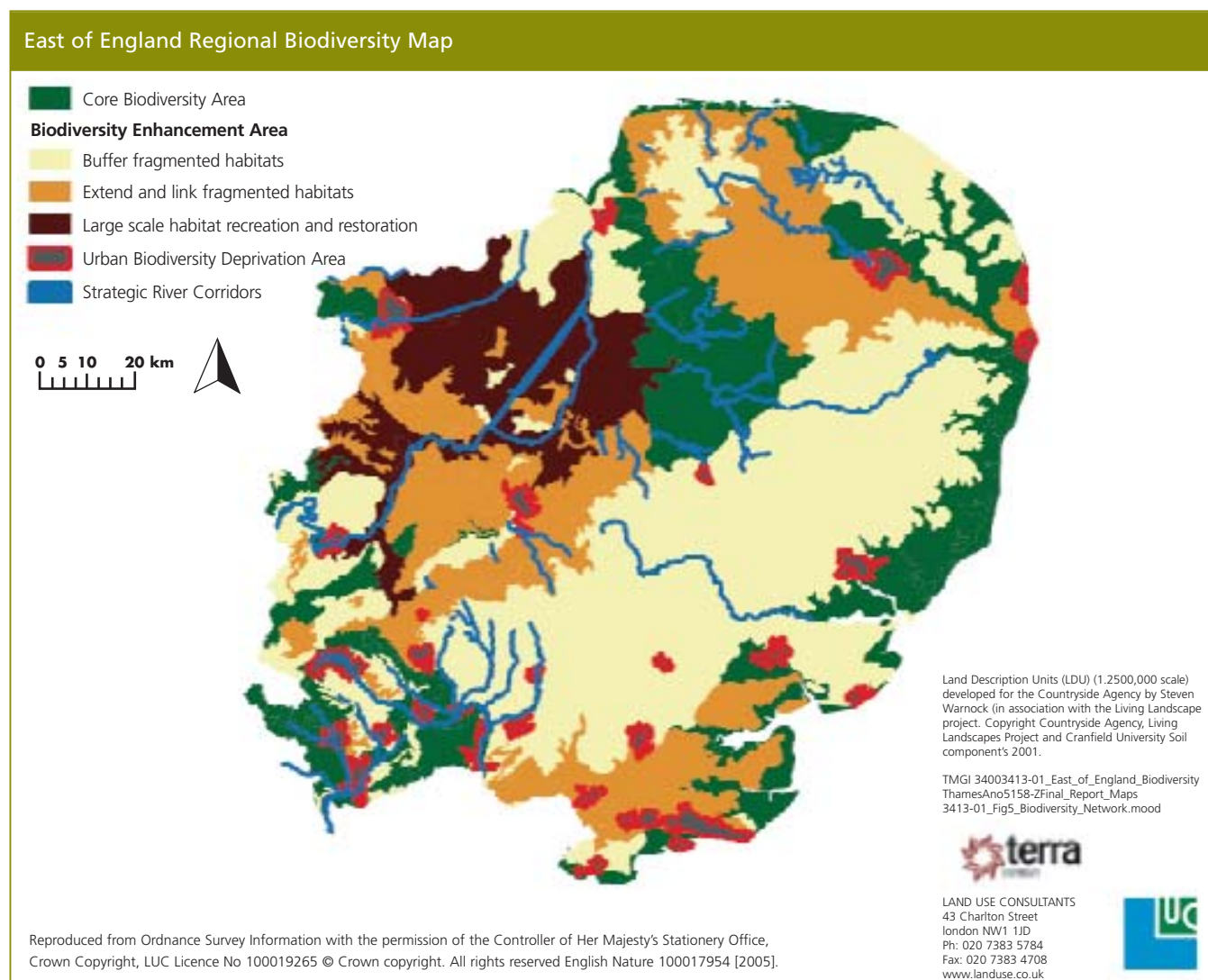
Trout in Chalk rivers are vulnerable to abstraction-related drought problems
(Dave Key, Rural Development Service)

Local and Regional Policy

The last four years have seen an increasing focus on local and regional delivery with a continuing drive to devolve decision making to local and regional Government. Following the publication of the Local Government White Paper in 2006, the integration of biodiversity into Local Area Agreements and the evolving performance framework will be a continuing focus for the Local and Regional workstream of the strategy.

In 2005, Defra allocated additional resources to English Nature to support regional and local biodiversity coordination. This funding is being used to support the regional and local delivery of biodiversity including supporting local and regional partnerships, delivering Biodiversity Action Plans regionally and locally, reporting and monitoring progress and integrating biodiversity into regional and local policies.

A proportion of this funding supports Regional Biodiversity Co-ordinators who co-ordinate regional biodiversity partnerships and help support local and regional delivery. The remainder is being used to support key local biodiversity partnerships.



This initiative was driven by the need for an informed response by the Regional Biodiversity Forum to the environmental chapter of the Regional Spatial Strategy. Given the high levels of growth outlined in the East of England Plan, the need was identified for a network of biodiversity areas and corridors both to conserve and restore biodiversity. The East of England Biodiversity map was published by the Regional Biodiversity Forum, and gained considerable support through its inclusion in the Regional Spatial Strategy.

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Towns, Cities and Development

The Government's response to Kate Barker's independent review of housing supply in December 2005 envisages that by 2016, housing provision will be increased so that the annual net additions to the housing stock will total 200,000 houses per year. As part of the wider issues about location and design, development pressure will further stretch already scarce water resources, especially in the south east, and give rise to expectations about flood risk management. Whilst there is a clear need to increase housing supply, the new generation of home-owners also has legitimate expectations that the new house-building is sensitive to the environment and provides "green lungs" close to where people live. For example, we need careful analysis of the value of brown-field sites for wildlife if the best decisions are to be made for future housebuilding. Integrating habitat protection and creation within a truly integrated development control, land and water management policy framework requires considerable effort. In cases where development takes place on 'biodiversity poor' areas such as intensive agricultural land, these measures could actually yield a net gain for biodiversity.

In 2005, Government published Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation and a linked legal Circular (ODPM Circular 06/2005/Defra Circular 01/2005), articulating ambitions for the land use planning system to contribute to the conservation of our natural heritage, and recognising the major role the planning system has to play in meeting the Government's obligations and national policies on halting the loss of biodiversity.



A guide to good practice in planning for biodiversity and geological conservation published in 2006 by ODPM, Defra and English Nature complements the recent Government policy in PPS9 and the legal Circular. This guide provides straightforward advice for planning authorities to help them understand more about their natural environment, to develop policies which promote its protection and enhancement and to make decisions on developments where biodiversity and geological conservation form a key part.

In July 2002 Planning Policy Guidance Note 17: Planning for Open Space, Sport and Recreation was published, providing the planning framework for the

Street trees provide effective screening and improve the aesthetic appearance of an area. *(George Gate, Forestry Commission)*

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provision and protection of open spaces. It promotes a strategic, evidence-based approach to the provision of quality green spaces by requiring local authorities to audit existing facilities and make rigorous assessments of the existing and future needs of their communities for open space, sports and recreational facilities. It asks planning authorities to take into account the role of open spaces as habitats for wildlife when planning their open spaces.

The Olympics and Biodiversity

The London 2012 vision is to host an inspirational, safe and inclusive Olympic Games and Paralympic Games and leave a sustainable legacy for London and the UK. This vision and the strategic objectives for the Games are underpinned by the principles of 'sustainable development'. Ministers from all Departments are agreed on the goal of making these the most sustainable and green Games to date.

The Department for Culture, Media and Sport is co-ordinating Whitehall's Olympic Programme. The Olympic Delivery Authority (the ODA) has responsibility for building the Olympic Park and infrastructure. The London Organising Committee for the Olympic Games (LOCOG) raises sponsorship funding, runs the Games and leads on all issues to do with communications and the image of the Games.

To support the achievement of the 2012 vision, the Olympic Board has agreed a London 2012 Olympic Games Sustainability Policy, which highlights five key themes where the Board feels it can make the biggest impact and achieve the most beneficial outcomes. These are: Climate Change, Waste, Biodiversity, Inclusion and Healthy Living.

Defra, together with Natural England and other key stakeholders, is working closely with the ODA and LOCOG to maximise the environmental benefits the Games bring to London and the UK, and to help implement the Sustainability Policy. On biodiversity specifically, the aim is to enhance the ecology of the Lower Lea Valley and other London and regional 2012 venues, and to encourage the sport sector generally to contribute to nature conservation and enhancing the natural environment. The ODA has assessed the impact of the Olympic Park on existing wildlife and its habitats and will take account of this in the design, construction and long term operation of the park.

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Woodlands and Forestry

In June 2005, Government launched a new policy for Ancient and Native Woodland in England. The new policy represents a significant change in emphasis for forestry activities in England by placing native and ancient woodland at the heart of forestry policy.

Subsequently, in May 2006, Defra launched a consultation on the review of the England Forestry Strategy, www.defra.gov.uk/corporate/consult/forestry-strategy/index.htm, identifying national priorities and policies over the next 5 – 10 years to which England's trees, woods and forests can make a particularly significant contribution. This proposes four objectives for forestry policy:

- To safeguard England's resource of trees, woods and forests for future generations;
- To protect the environmental resources of water, soil and air, and to protect and enhance biodiversity and landscapes, both woodland and non-woodland, and cultural values;
- To ensure that woodlands and trees enhance the quality of life for those living in, working in, or visiting England;
- To encourage the development of new or improved markets for sustainable woodland products and services where this will deliver identifiable public benefits, nationally or locally.



The new Strategy, which will follow the consultation, will be supported by a joint Forestry Commission and Natural England-led action plan for national delivery, and will give shape and direction to local delivery through the wide range of partners engaged in the Regional Forestry Frameworks.

Forestry Policy – Safeguarding trees for the enjoyment of future generations
(Forestry Commission)

Coasts and Seas

In March 2006, Government set out plans for its Marine Bill, a new framework for the seas, that will work towards delivering clean, healthy, safe, productive, and biologically diverse oceans and seas <http://www.defra.gov.uk/corporate/consult/current.htm> . Marine nature conservation proposals contained in the consultation document include marine protected areas, whether to introduce a framework for marine ecosystem objectives, controls on unlicensed activities, enhanced enforcement arrangements, and whether to make changes to species protection legislation for the marine area. The consultation period ended on 23 rd June 2006. A summary of the responses was published in October 2006.

Enthusing people

If we are to approach our objectives for halting the loss of biodiversity by 2010, we need to engage more people in taking action to maintain and enhance biodiversity as part of their everyday lives. Over the past four years, the England Biodiversity Group has come to recognise three things more strongly than ever:

- We need to focus on outcomes, rather than getting 'messages' across
- People are motivated by making a difference to their local 'patch'
- We are more likely to engage people if we show them a vision of what they can achieve, than by giving them depressing news stories.



Volunteers giving their talent, time and tireless enthusiasm, fulfilling a vital role in helping to conserve and improve our environment
(Andy Hay, rspb-images.com)

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These principles are embodied in the Breathing Places campaign, being led by the BBC to encourage a million more people to take action to make their local environment more wildlife friendly (See Box).

Breathing Places

The BBC *Breathing Places* campaign aims to mobilise millions of people to get more actively involved in 'hands on' activity and volunteering to conserve wildlife and create nature-friendly green space across the UK. It is based on a partnership approach which will join up and co-ordinate this activity so that there is a visible transformation of the landscape of cities and neighbourhoods across the UK. Through events and media coverage, in addition to direct public engagement, it will significantly raise awareness, understanding and commitment to conservation in the general public.

The workstreams of the England Biodiversity Strategy – particularly Education and Public Understanding, Local and Regional and Business – have worked closely with the BBC team to draw together a broad partnership to deliver the campaign. The BBC regional teams are also working increasingly closely with the Regional Biodiversity Coordinators to ensure campaign delivery is integrated with their regional networks and action plans.

The campaign focuses on inspiring and supporting participation in workplaces, communities and neighbourhoods and in schools and other organisations working with children and young people.

Breathing Places highlights the relevance of biodiversity to a wide range of agendas. It showcases how taking action to improve wildlife and habitats can bring substantial social and economic benefits through improving local environments, encouraging outdoor education and recreation activity and fostering pride and a sense of place within communities.

BBC is working closely with key partners in the sector to ensure the resources and approach developed through Breathing Places leave a lasting legacy for the sector.

Audience research commissioned by the BBC suggests that 63% of adults in Great Britain – over 30 million people – are interested in nature and wildlife. The research segmented this audience into distinct clusters which differed according to the way they related to nature – for example the “child-led”, who were primarily interested in nature as an experience to share with their children, while the “helpless backyarders” are preoccupied with the fact that nature is under threat, but feel too overwhelmed to do anything to help. The research went on to suggest that there needed to be different strategies for engaging the different segments of the population (See table opposite).

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Cluster	Number of People	Representative catchphrase	Emphasis on interests/strategy for engagement
Concerned campaigners	2.1m	'Let's make a difference'	<ul style="list-style-type: none"> • Endangered species • UK conservation • Marine life • Wildlife in the garden • International conservation
Child-led	8m	'I'm into nature and wildlife because of the children.'	<ul style="list-style-type: none"> • Wildlife information for children • Baby and young animals • Environmental information for children • Conservation centres and museums to visit • Organised trips and days out
Nature Enthusiasts	5m	'I really want to get more involved – I love nature.'	<ul style="list-style-type: none"> • Wildlife in the garden • Endangered species • Animal behaviour • Birds • Baby and young animals
Passive preservationists	3.5m	'We should try and keep natural things / the environment as they should be.'	<ul style="list-style-type: none"> • Coastlines and waterways • Animal behaviour • UK conservation • Conservation centres and museums to visit • Landscapes and geographical features • International conservation
Helpless Backyarders	5.6m	'I'm interested in nature and stuff but it's all just too much.'	<ul style="list-style-type: none"> • Wildlife in the garden • Endangered species • Animal behaviour • Birds • Coastlines and waterways
Armchair action	5.3m	'I love the programmes...'	<ul style="list-style-type: none"> • Animal behaviour • Wildlife in the garden • Marine life • Endangered species • Mammals

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Based on the audience segmentation, the BBC commissioned focus groups to try to identify any cross-cutting themes or triggers that could be used to inspire participation. Two key triggers emerged:

Children:

- Children are the key to getting many people to join in – schools are often the most meaningful locus of community spirit;
- Nature is an important focus for family activities – spending time doing something with the kids ;
- Also a sense of the welfare of the next generation and the legacy we are leaving for them.

Local:

- ‘My patch’ is a very powerful concept;
- Making ‘my patch’ nicer is more relevant than ‘global conservation’, ‘sustainable development’, etc;
- Making projects very local, providing a clear sense of the impact of work done, and a clear reward for effort will be the most effective approach;
- People in the cities are, if anything, more passionate than those living in suburban or rural settings.

Breathing Places is not only hugely important in its own right, but because it gives us an important model – one with a core set of outcomes and some very simple messages, with scope for people to tailor these to their own individual setting, with many small projects working towards what amounts to a massive canvas.

Engaging children and young people

Young people aged under 16 represent about twenty per cent of the UK population and one in three households have dependent children.

The environmental movement invests in children and young people because we want the young people we work with to become discerning in their life choices, acting as ambassadors and advocates for our values, recognising nature and the environment as being both important for their quality of life and at the heart of sustainable living. Children and young people should have opportunities to access and explore nature, to learn about their surrounding environment and to develop an understanding of the influences which shape their environment.

The environmental voluntary sector has played a major role in engaging children and young people in their natural environment and providing opportunities for learning and development.

Schemes such as The Wildlife Trusts’ Wildlife Watch and RSPB’s Wildlife Explorers, which are aimed specifically at children, help to encourage children to enjoy, understand and learn about their natural environment. Initiatives such as playschemes, children’s clubs and youth groups

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with an environmental flavour offer direct contact with nature and provide opportunities for enjoyment, participation, learning and skills development, personal achievement and contribution – and making friends. They provide a safe context for the repeated positive experiences and interaction that really influence future choices and values and help young people build a positive appreciation of the living world that remains with them for a lifetime. The approach to different ages and minority groups will vary, as will the structure and nature of activities, but ultimately the raw materials – local greenspaces, the world we all share – doesn't. This sort of club or group activity depends upon the dedication, enthusiasm, passion and professionalism of many thousands of staff and volunteers across hundreds of organisations every day.



Starting young: nursery school children learning about their environment
(Isobel Cameron, Forestry Commission)

As children mature they naturally seek greater independence, self determination and responsibility – which may be available through established groups, but which they may also act on individually. Young people are attracted to many activities traditionally undertaken by environmental volunteers: managing habitat areas, creating wildlife spaces, running campaigns, helping at events and learning species identification and recording. Like all volunteers they want to feel valued, to learn new skills and to socialise. Volunteering can help them fulfil their potential outside the formal education system. Drawing together complementary partners who can both engage young people and facilitate environmental knowledge and opportunity is fundamental to increasing activity in this area.

Schools and colleges provide many children and young people with opportunities to learn about the natural world, or simply to learn outside their usual classroom setting. The Education Outside the Classroom Manifesto aims to provide all children and young people with a variety of high quality learning experiences outside the classroom environment, whether that be during school, after school or during holidays. This manifesto is intended to be a 'movement', or joint undertaking which many stakeholders create and which anyone, including providers, voluntary organisations, youth groups, schools and local authorities can sign up to. Environmental organisations supply a vast range of creative curriculum-linked sessions and resources to meet this demand. Organisations are valued for their local insight and knowledge, sites available to visit and their expertise.

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The needs of audiences that include or comprise young people vary considerably and contacts, initiatives and resources must be carefully targeted if they are to reach specific groups. Young people in particular appreciate and respond to initiatives designed just for them.

The Wildlife Trusts are currently running a three year project to build capacity in local Wildlife Trusts to work with young people aged 13-19. Funded by DfES, it is enabling English Trusts already active to share best practice and learn from each others' experiences whilst encouraging others who have no previous contact with this age group to take the plunge. Using the environmental context, Trusts are running residentials, enabling peer learning, enlisting young volunteers, working with excluded pupils, training junior rangers and involving more and more young people in shaping and running their own initiatives. Complementing this Defra has funded a project interviewing young people already engaged in a number of different projects to record their opinions – to let us know what it is that they like about wildlife, the environment and the activities they are involved in. These positive images and comments will be used to further promote the value of engaging young people in their natural environment.

The Wildlife Trusts

Recent research¹⁰ has demonstrated the contribution that greenspace and access to nature make to health and well-being. The evidence indicates that nature can make positive contributions to health, help recovery from pre-existing stresses or problems, have an immunising effect by protecting from future stresses and aid concentration. The evidence also suggests that these benefits are enhanced when the natural environment being experienced is more diverse or species rich.

Government recognises these benefits, and the potential they provide for improving the health of the nation and reducing health-care costs. In October 2005, Government completed the introduction of the new Countryside and Rights of Way Act 2000 right of access. This allows people to wander at will over some 750,000 hectares of mountain, moor, heath and downland and registered common land to which they did not previously have access. The new right was rolled out across England over a period of a year and accompanied by events in each region to encourage more people to get out and enjoy some of the most wild, spectacular and nature-rich countryside in England. Government is now looking at ways to improve access to England's coast, within a wildlife and landscape corridor that offers enjoyment, understanding of the natural environment and a high quality experience and is managed sustainably in the context of a changing coastline. Other initiatives being pursued include not only providing areas of greenspace close to where people live via programmes such as Doorstep Greens, but also encouraging the provision of greenspace as an integral part of the development control system.

People's inherent enthusiasm for nature is perhaps nowhere better demonstrated than in the Northern Red Kites project where hundreds of children have been building close relationships with red kites reintroduced from the Chilterns, as part of a concerted effort to reintroduction

¹⁰ A countryside for health and well-being: the physical and mental health benefits of green exercise. Countryside Recreation Network, April 2005; Natural Fit: can green space and biodiversity increase levels of physical activity? Dr William Bird, RSPB, October 2004

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campaign. Forty three schools have each adopted a released bird and enjoyed seeing it build a new life in the wild. They learn about tracking equipment used to monitor the birds' movements and receive regular updates on its progress.

Northern Kites – The People's Kites

The Northern Kites project aims to reintroduce and ultimately re-establish the Red Kite as a breeding bird in northeast England, after an absence of over 170 years. It comprises four key elements:

- **Wildlife** – the return of the Red Kite to its former range in northeast England
- **People** – the opportunity to give people and communities access to the kite, so that they can enjoy and learn about wildlife and the wider environment through the Project
- **Economics** – the chance to show how such a Project can be good not just for wildlife and people, but also for the local economy
- **Partnership** – the illustration of how partners from the charitable, private and public sectors, working in an imaginative way together can better deliver rewards not just for wildlife but also to improve local people's quality of life



School children being introduced to their adopted Kite, The Winlaton Phoenix
(Neil Wasp/Northern Kites)

Based in Gateshead's Derwent Valley, the project has released 94 kites since 2004. Survival of adult birds has been very good, with only four known mortalities so far and in the Spring of 2006, young were fledged from two nests – the first time Red Kites had bred in the northeast of England for nearly two hundred years. In addition, the project has been very successful in engaging local communities: in a four week period over 5000 people visited a 'watch point' to see the first breeding kites. Every kite released by the project is adopted by a local school, and each school receives updates on the whereabouts and activities of their own adopted bird. Volunteers have also contributed over 7000 hours to the work of Northern Kites, including building the young kites' aviaries, helping at public events and radio-tracking released kites.

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Only two years after releasing its first kites to the region, it is clear that the Northern Kites Project has raised the level of wildlife awareness in the general public in the northeast and is starting to put biodiversity on the wider agenda as a quality of life issue.

Northern Kites is a partnership initiative between Natural England, RSPB, Gateshead Council, Northumbrian Water, The National Trust and the Forestry Commission, with additional funding from the Heritage Lottery Fund and the SITA Trust.

For more information: www.northernkites.org.uk

RSPB/Natural England

Over the past three years, Defra has sponsored the “Communicate” conferences in Bristol – international events that develop skills in communication for conservation issues. These conferences have brought a unique gathering of environmental and conservation communicators to share experience and knowledge and tackle the challenge of turning conservation awareness into action. “Communicate” is developing a ‘Feel-good Manifesto’, collating inspirational stories on their developing website to celebrate success, however small, share experience and empower people to make change.

Developing the evidence base

The headline and sectoral indicators used for measuring progress in the England Biodiversity Strategy (See Chapter 5, and the report on *Measuring progress: 2006 assessment* published as Volume II of this report) are in many cases just the tip of the iceberg in terms of the evidence arising from surveillance, monitoring and research. The indicator trends and their implications cannot be understood without reference to this wider evidence base. An up-to-date and dynamic evidence base is necessary to inform the scope and priorities in the Strategy, to help evaluate options and support the formulation of policy, to steer effective implementation and to assess the overall outcomes, including the continuing update and development of indicators. Evidence for the England Biodiversity Strategy is drawn from many sources ranging from international assessments to local surveys, drawing at many levels on volunteers who willingly contribute time and expertise to the identification and recording of biodiversity.

Since 2002 when the Strategy was first published there have been many significant developments in the evidence base which are too numerous to mention individually. Some examples of evidence are also presented in other sections of this report and are used within the indicators, including for example the first complete cycle of SSSI condition assessments¹¹, the 2005 reporting round on UK BAP priority species and habitats¹², and the annual Breeding Bird Survey¹³. The evidence includes socio-economic research and analysis such as work on costings and valuation (see Boxes ‘Funding for biodiversity’ and ‘The Economic value of biodiversity’) and studies of climate change impacts and adaptation (see Box ‘Role of biodiversity in mitigating climate change’). Some of the other evidence highlights are:

¹¹ See: www.english-nature.org.uk/special/sssi/report.cfm?category=N

¹² The UK Biodiversity Action Plan: *Highlights from the 2005 Reporting Round*, Defra, 2006

¹³ The State of UK’s Birds 2005, RSPB, 2006

International

- The Biodiversity Synthesis Report¹⁴ of the Millennium Ecosystem Assessment (MA) shows that human society depends on healthy, thriving biodiversity, for food, fuel, shelter, materials, medicines, soil fertility, crop pollination, soil stability, cleansing of waters, climate regulation and more. However, 60% of global ecosystem services studied by the MA are assessed as degraded or used unsustainably.
- A review undertaken by the Royal Society¹⁵ concludes that carbon dioxide (CO₂) emitted to the atmosphere by human activities is being absorbed by the oceans, making them more acidic. Over the past 200 years the average pH of surface seawater has fallen by 0.1 units and could fall by 0.5 units by the year 2100. The impacts will be greater for some regions and ecosystems, and will be most severe for coral reefs and the Southern Ocean. The impacts of ocean acidification on other marine organisms and ecosystems are much less certain.

Species trends

- The JNCC's 'Nature Barometer'¹⁶ highlights that species associated with upland habitats of the UK (coniferous plantations, bogs and acid grassland) have experienced the greatest decline over the past 25 years.
- The total number of larger moths in Britain has fallen by a third since 1968¹⁷. The Rothamsted network of light traps has been recording numbers of larger moths caught every night from hundreds of locations. Out of 337 moth species for which population trends could be assessed two thirds (226 species) show a decline over the 35 year study. The declines were most marked in the eastern half of England and are likely to have consequences for other organisms (eg birds which feed on caterpillars). Changes in the extent and quality of suitable habitats, pesticide use, eutrophication and light pollution are thought to be the main reasons for decline.
- Butterfly Conservation's analysis of butterfly trends over the past 30 years¹⁸ highlights brownfield sites and unmanaged grassland as two habitats where new thinking is needed in terms of conservation priorities. Brownfield sites provide important refuges for butterflies but re-development of sites is implicated in the national decline of some species (eg Dingy Skipper). Their importance for biodiversity is often not appreciated. Conservation objectives for (mainly chalk) grassland have tended to focus on maintaining species-rich swards but potentially to the detriment of some butterflies (eg Small Blue and Duke of Burgundy) that require a more mixed habitat of tall grass and scrub. Overall the distributions of 72% of the 57 butterfly species assessed have declined since the 1970s.

¹⁴ Millennium Ecosystem Assessment: *Biodiversity Synthesis*, Island Press, 2005

¹⁵ Ocean acidification due to increasing atmospheric carbon dioxide, The Royal Society, 2005

¹⁶ See: www.jncc.gov.uk/page-3712

¹⁷ The State of Britain's Larger Moths, Butterfly Conservation, 2006

¹⁸ The State of Butterflies in Britain and Ireland, Butterfly Conservation, 2006

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Woodlands

- Research by the Centre for Ecology and Hydrology into long term changes in woodland ecology¹⁹ shows a marked, 36% decline in species-richness of the ground flora over the past thirty years. The changes are attributed to a number causes including the general ageing of woodland stands, absence of management and nutrient enrichment. Whilst ageing woods may create more shade, and hence tend to reduce diversity in the ground flora, they may also increase opportunities for invertebrates, fungi and lichens associated with older trees and dead wood.
- A survey of woodlands by the British Trust for Ornithology and Royal Society for the Protection of Birds²⁰ found that 11 out of 34 woodland bird species had undergone large increases in population (greater than 25%) whilst 8 species had undergone large decreases (greater than 25%) since the 1980s. Long distance migrants such as Tree Pipit and Spotted Flycatcher declined by up to 70% in some areas. No single reason explains these declines in local populations, however, changes in woodland structure involving woodland age, management and deer browsing are thought to be significant factors.



In some areas the Spotted Flycatcher has declined by up to 70% (Andy Hay, *rspb-images.com*)

¹⁹ Long-term ecological change in British woodlands (1971 – 2001), English Nature, 2005

²⁰ See: www.forestry.gov.uk/forestry/INFD-6MWL96

Farmland

- The Botanical Society of the British Isles and Plantlife's project Making it Count for People and Plants²¹ found that the marked decline in weed species of arable fields has been stopped and possibly reversed since the late 1980s and this is thought to be, at least partly, an outcome of changes in agricultural policy over this period. However the study also found a continuing decline of plant species associated with infertile habitats, particularly calcareous grassland and dwarf shrub heath.
- The British Trust for Ornithology, University of East Anglia and the Royal Society for the Protection of Birds' study on farmland birds in the arable landscape²² shows that increasing winter food resources can have positive effects on local breeding populations of seed-eating birds. As local bird populations tend to share resources within 500m to 1km of each other the maximum number of birds can be reached by agri-environment options, such as winter stubbles and wild bird cover crops, spaced at least 1km apart.

Marine

- The MarClim²³ research project shows that marine species are responding to alterations in climate. The biogeographic limits of southern intertidal species are extending northwards and eastwards towards the colder North Sea at a rate of up to 50 km per decade.
- Monitoring of cetacean strandings in a project co-ordinated for Defra by the Institute of Zoology and Natural History Museum²⁴ shows that between 2000 and 2004 there was a year-by-year increase in the reported number of strandings. Bycatch was the major cause of death in UK stranded harbour porpoises and common dolphins and the majority of these were stranded in south west England. It is not clear whether the increasing number of strandings reflects a genuine increase in bycatch related mortality or other factors such as changes in abundance and distribution of these two species and increased coastal vigilance.
- However, generally in the marine environment the evidence base is less well developed and the Government's recently completed assessment of the state of UK seas²⁵ concludes that there is a significant gap in understanding the distribution and health of seabed habitats and the status of many marine species is unknown.

Access to information

- Great advances have been made in mobilising and providing access to existing biological information at local and national levels through the development of the National Biodiversity Network (NBN). The NBN now provides access to 12 million records for around 7000 different species in England. These data are beginning to be used operationally to help the targeting of conservation actions and inform local planning decisions.
- English Nature's report on the state of nature in the lowlands²⁶ summarises evidence from many sources and concludes that continuing habitat loss is no longer a major threat but there is a continuing decline in quality relating to agricultural intensification, lack of appropriate management, water use and quality, development pressure and air pollution.

²¹ Change in the British Flora 1987 – 2004, BSBI London, 2006

²² See: www.defra.gov.uk/science/project_data/DocumentLibrary/BD1616/BD1616_2757_FRP.doc

²³ See: <http://www.mba.ac.uk/marclim/>

²⁴ Cetaceans strandings investigation and coordination in the UK: Final Report to Defra for the period 1st January 2000-31st December 2004, Defra, 2006

²⁵ Charting Progress: An Integrated Assessment of the State of UK Seas, Defra, 2005

²⁶ State of Nature: lowlands – future landscapes for wildlife, English Nature, 2004

4. A holistic approach

Future plans

In the period up to 2010 the partners in the England Biodiversity Strategy will work to update the evidence base through support for the continuation of existing monitoring schemes and new survey initiatives which include: a repeat Countryside Survey in 2007; extension of butterfly monitoring to the wider countryside; a repeat River Habitat Survey; an updated National Inventory of Woodlands and Trees; an extended network of long term monitoring sites to detect impacts of climate change; the creation of an Agricultural Change and Environment Observatory and surveillance of marine habitats. Work to improve the quality and relevance of indicators will continue in order to allow assessment of the overall 2010 target at a range of scales. Where appropriate this work will be undertaken at a UK level in partnership with the devolved administrations, the respective country agencies and the JNCC.

We will undertake research on the relationships between biodiversity, ecosystem functions and the goods and services they provide. We will improve understanding and forecasts of the impacts of climate change and adaptation and mitigation strategies. We will develop methods to measure the social and economic impacts of biodiversity change, take account of the value of ecosystems services in decision making, assess cumulative impacts of development and apply the ecosystem approach. We will continue to undertake research to develop policy on the effective targeting and implementation of Environmental Stewardship together with the development and refinement of land management options.

We will continue to support the development of the National Biodiversity Network and data collection by National Societies and Schemes and Local Record Centres to extend and update the information available to decision-makers at all levels.

We will continue to analyse the knowledge gaps and prioritise research needs working with partners in the UK through the Biodiversity Research Advisory Group (BRAG) and in the European Union through the European Platform for Biodiversity Research Strategy. We will explore the options for collaborative funding with the UK Research Councils and other research funders, including through engagement with the Environmental Research Funders Forum and the European Research Area Network for Biodiversity (BiodivERsA).

Going forward

Refreshed work programmes for each of the ten workstreams of the strategy, including summaries of the relevant UK BAP targets proposed for England, are presented in Chapter 8. A number of common themes emerge from the individual workstream programmes, including climate change, valuing the economic benefits of biodiversity, invasive species and landscape scale approaches. For one of these – climate change – we have established a climate change adaptation workstream with the specific remit to “climate-change proof” the other work programmes, as they develop. The Economics and Funding group will lead cross-cutting work on valuing economic benefits, working with the Education and Public Understanding workstream to articulate the work that has already been done on the benefits of biodiversity. The England Biodiversity Group will work closely with Natural England which will be expected to lead on much of the thinking and delivery on landscape scale approaches, particularly on the important priority of large-scale habitat restoration. Overall, communication issues will play a far greater role throughout the delivery of the strategy in the period from 2006-2010.

5. Measuring our progress – Headline indicators

Measuring progress against national and international commitments is essential if we are to identify key challenges and assess how well they are being addressed. In December 2003, the England Biodiversity Group published *Measuring progress: baseline assessment*²⁷, to help monitor the implementation of the England Biodiversity Strategy. The indicators also contribute to the global effort to monitor the commitment made at the World Summit on Sustainable Development in Johannesburg in 2002 to significantly reduce the rate of biodiversity loss by 2010 and the European Union objective of halting biodiversity loss by the same date.














Since 2003, we have undertaken further development to improve the indicators, and have published updates of indicators as and when new data have become available. The data underlying the indicators are gathered on different cycles; some are gathered annually, or even monthly; others are updated on a three year, or longer, cycle. A full update of the indicators is published in tandem with this report. Indicator updates and further development will continue and, by 2010, a time series for the indicators will be available to help assess England's contribution to the global and European targets for biodiversity.

We review below the eight 'headline' indicators which were first presented for all the workstreams in the 2003 baseline assessment to illustrate progress towards key objectives across the range of sectors of the strategy, as well as the new headline indicator – H1(b) Populations of butterflies²⁸. Six of the seven headline indicators for which trends have been assessed in 2006 show positive progress, while for H1(a) – populations of wild birds in England, the trend appears to have stabilised. One indicator, H6 – UK fish stocks, has improved between 2003 and 2006. However, this is a consequence of an improved method of calculation resulting in a positive assessment.

²⁷ www.defra.gov.uk/wildlife-countryside/biodiversity/biostrat/indicators/index.htm

²⁸ The indicator of populations of butterflies (H1b) is a new indicator included for the first time in the 2006 assessment. The indicator on local biodiversity targets (H7) has been developed and published for the first time. The indicator on public attitudes (H8) has not been updated because it is based on data from Defra's Public Attitudes Survey: a new survey is being planned for 2007. All the remaining headline indicators have been updated since 2003. The indicator on agri-environment schemes (H4) be developed in the future to reflect the new Environmental Stewardship Scheme introduced in England.

5. Measuring our progress – Headline indicators

Summary assessment of headline indicators		2003 assessment	2006 assessment
H1(a)	Populations of wild birds in England		
H1(b)	Populations of butterflies in England	Indicator not developed	
H2	Condition of Sites of Special Scientific Interest (SSSIs) in England	No trend data	
H3	Status of Biodiversity Action Plan priority species and habitats in England		
H4	Area of land under agri-environment scheme agreement in England		
H5	Biological quality of rivers in England		
H6	UK fish stocks fished within safe limits		
H7	Delivery of local biodiversity targets in England	Indicator not developed	No trend data
H8	Public attitudes to biodiversity		No assessment
Indicator trend moving towards objective		4	6
Indicator trend uncertain or insufficient data		5	3
Indicator trend not moving towards objective		0	0



Clear positive trend



No trend or uncertain trend



Clear negative trend

5. Measuring our progress – Headline indicators

Published March 2006

H1(a) Populations of wild birds in England

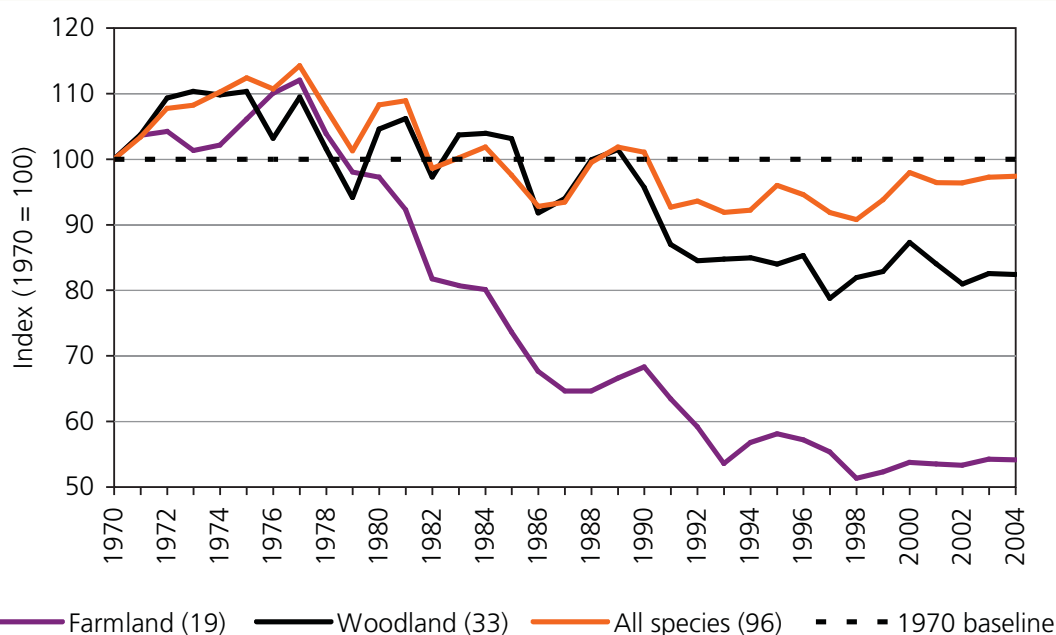
Objective: To reverse declines in wild bird populations

Assessment of indicator progress towards objective

2003  ; 2006 

Populations of wild birds, especially farmland and woodland birds, have fallen considerably from the high levels recorded in the mid-1970s. However, in 2004, the indicator of the overall population of breeding birds in England was at a virtually identical level to the start point of 1970, and has shown very little change since 2000. Populations of woodland and farmland birds have changed little since the previous year, though there have been major decreases overall in the populations of farmland birds and, to a lesser extent, woodland birds over the longer term. After 20 years of progressive decline, populations of woodland and farmland birds appear to have stabilised.

Indicator of farmland, woodland and all species bird populations 1970 – 2004



Source: British Trust for Ornithology, Royal Society for the Protection of Birds, Joint Nature Conservation Committee, Defra

Populations of common birds are considered to be a good indicator of the broad state of biodiversity because they occupy a wide range of habitats, tend to be near the top of the food chain and long-term data are available from which to assess changes. The Government has a Public Service Agreement (PSA) target to reverse the long-term decline in the number of farmland birds by 2020. In addition, the Forestry Commission has a target to reverse the long-term decline in the number of woodland birds by 2020.

5. Measuring our progress – Headline indicators

Published November 2006

H1(b) Populations of butterflies in England

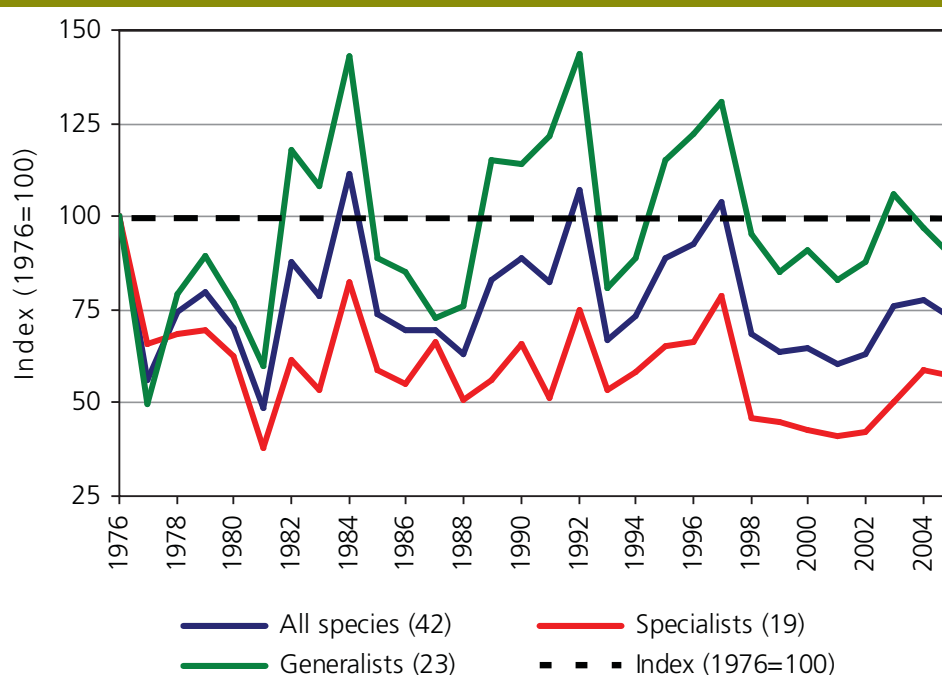
Objective: To reverse the long-term declines in butterfly populations

Assessment of indicator progress towards objective

2003 Indicator not developed; **2006** ✓

The overall population of butterflies has fluctuated over the last thirty years, with peaks at six to eight year intervals, and a progressive decline over a 30 year period. The 19 'specialist' species have fared worse than the 23 'generalist' species. Following a low point of 40% of the baseline in 2001, populations of specialist species recovered to 57% of the baseline in 2005. The recent trend is therefore assessed as positive.

Populations of butterflies in England 1976 – 2005



Number of species in indicator shown in brackets.

Source: Butterfly Conservation, Centre for Ecology and Hydrology, Defra, Joint Nature Conservation Committee

Butterflies are considered good biodiversity indicators because they respond rapidly to changes in environment and management, occur in a wide range of habitats, and are representative of many other insects, which collectively account for more than 50% of terrestrial UK wildlife species. The butterfly indicator plays an important role in assessing whether sufficient habitat diversity across semi-natural sites is being maintained and habitat fragmentation is being successfully mitigated. Butterflies are also sensitive to the effects of climate change.

5. Measuring our progress – Headline indicators

Published November 2006

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

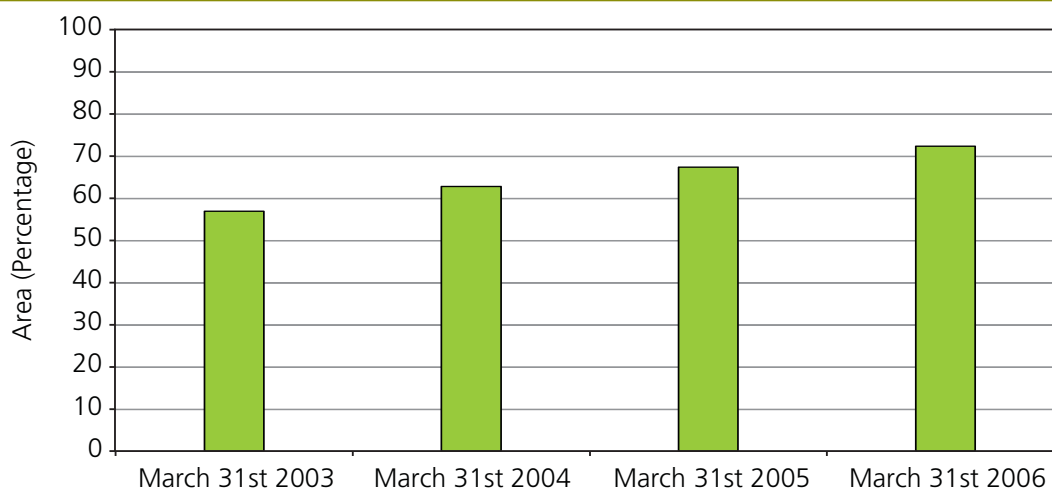
Objective: To increase the proportion of SSSI designated land in favourable condition

Assessment of indicator progress towards objective

2003 No trend data; **2006** 

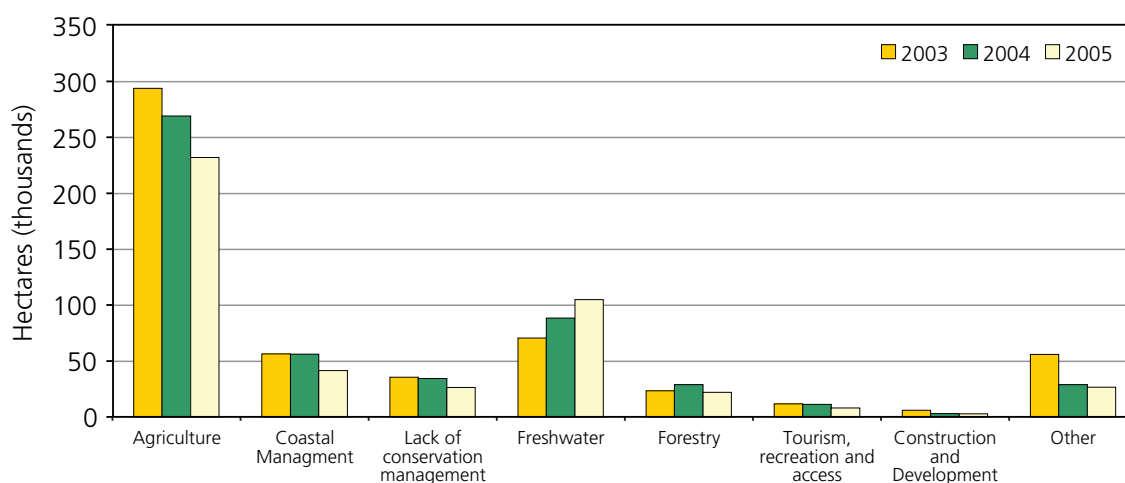
The percentage area of SSSIs in favourable condition has increased from 57% in March 2003 to 72% in March 2006. The indicator shows good progress but further improvement is needed to meet the target of 95% in favourable condition.

Percentage of area of SSSIs in England meeting PSA target conditions



PSA = Government's Public Service Agreement

Main causes of unfavourable conditions of SSSIs



Source: Natural England

5. Measuring our progress – Headline indicators

Published November 2006

H3 Status of Biodiversity Action Plan priority species and habitats in England

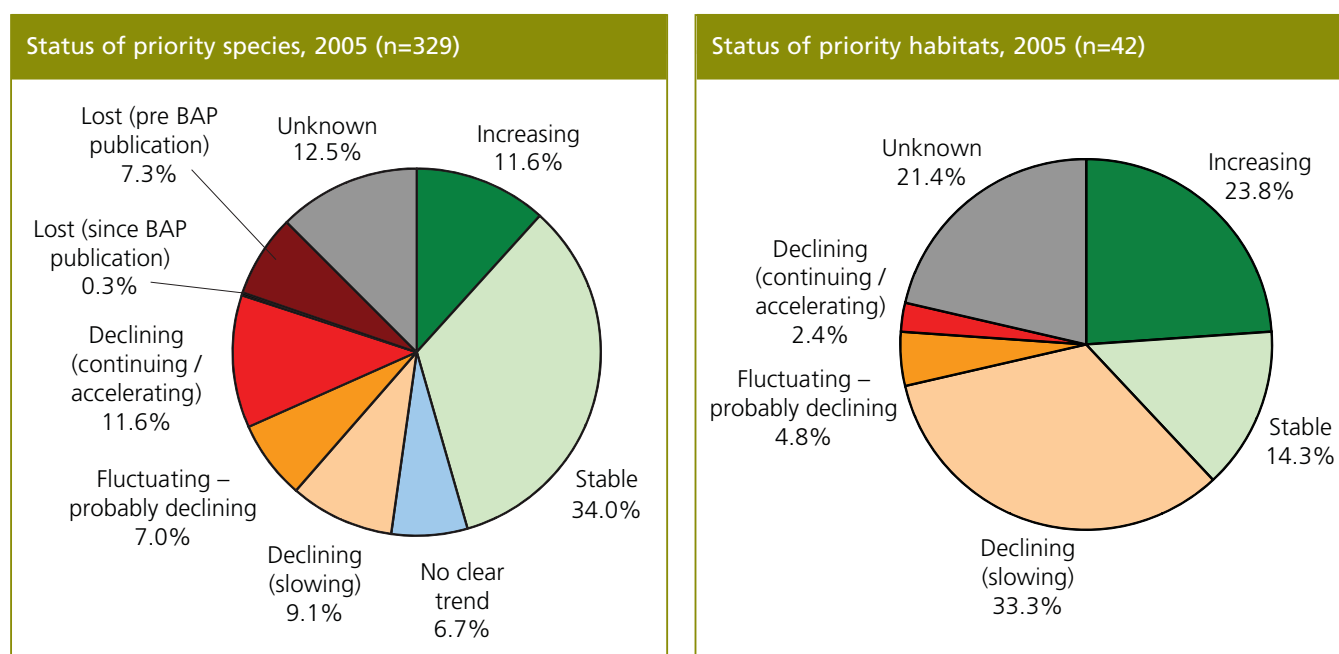
Objective: To reduce the proportion of priority habitats and species for which status is unknown, and to halt and ultimately to reverse the decline in England's priority species and habitats²⁹

Assessment of indicator progress towards objective

2003  ; 2006 

Overall, the proportion of species (55%) and habitats (71%) showing a positive trend (i.e. those for which the decline is slowing, those which are stable and those which are increasing) is greater than the proportion for which decline is continuing or accelerating, and the number of species and habitats with positive trends has increased between 2002 and 2005.

The proportion of species and habitats for which the status is unknown has fallen, from 26% of species and 40% habitats in 2002 to 12% of species and 21% of habitats in 2005.



Source: Natural England, Joint Nature Conservation Committee

An important measure of success in conserving England's biodiversity is how the status of priority species and habitats is changing. Measures of success include improving the extent or condition of habitats and expanding populations or distribution of species. In particular, success can be assessed in terms of progress towards the agreed targets for the priority species and habitat plans identified as part of the UK Biodiversity Action Plan.

²⁹ Amended from 2003 to combine two objectives as one.

5. Measuring our progress – Headline indicators

Published November 2006

H4 Area of land under agri-environment agreement in England

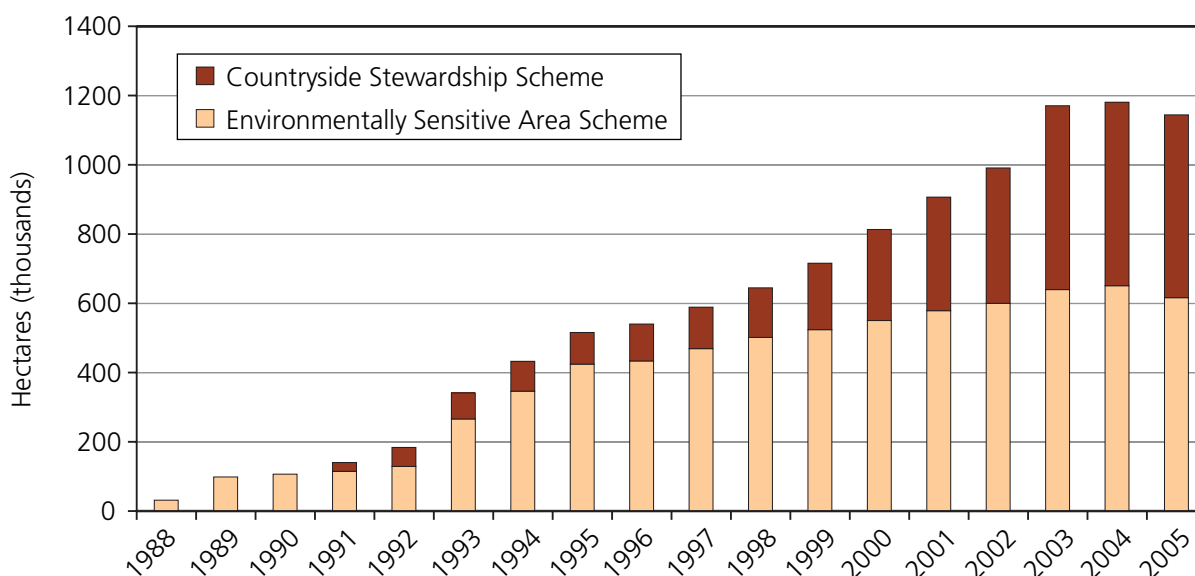
Objective: To promote and reward appropriate land management techniques that benefit semi-natural habitats

Assessment of indicator progress towards objective

2003  ; 2006 

The indicator shows that the area of land under agri-environment agreement increased rapidly until 2004.

Area of land under agrienvironment scheme agreement in England 1988 – 2005



Source: Defra

Since 1987, a number of voluntary agri-environment schemes have been introduced that provide payments to farmers to protect and enhance biodiversity, landscapes and historic features and to promote public access. Existing agri-environment schemes have been reviewed and the new Environmental Stewardship Scheme was launched in 2005. The indicator shows that the rate at which land has been entered into the Environmentally Sensitive Area (ESA) and Countryside Stewardship Scheme (CSS) agreements in England accelerated since 1992 to reach a peak of just under 1.2 million hectares in 2004, about 12% of the area of agricultural land in England.

5. Measuring our progress – Headline indicators

Published May 2006

H5 Biological quality of rivers in England

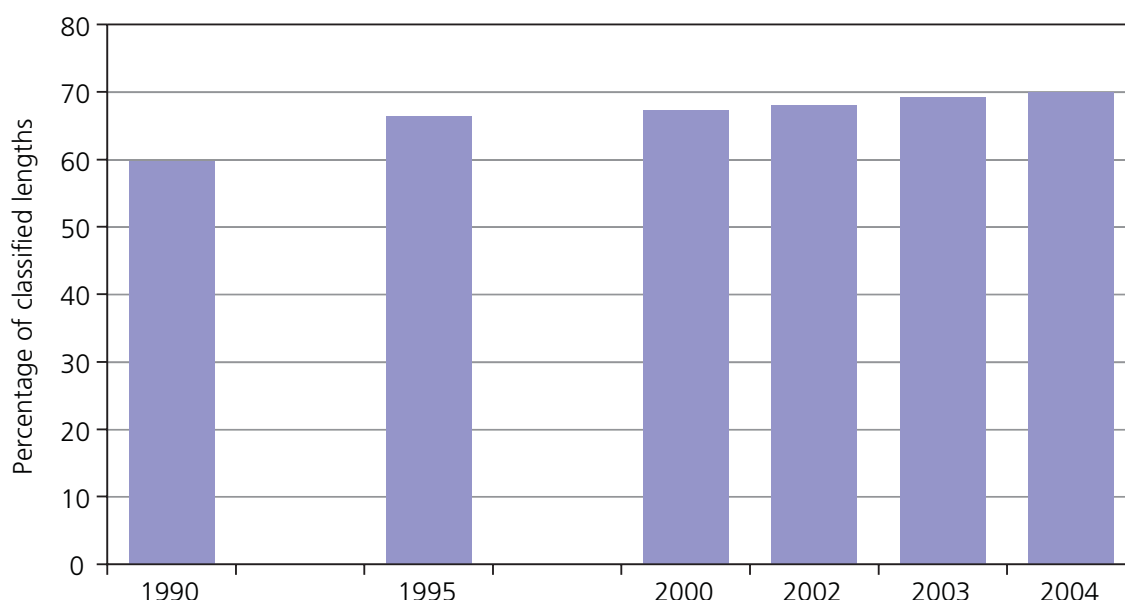
Objective: To reverse historical habitat degradation and restore the quality of wetland ecosystems by increasing the proportion of surface waters in good condition

Assessment of indicator progress towards objective

2003  ; 2006 

The indicator shows a steady improvement in the biological quality of rivers over the last 5 years, and a marked improvement since 1990.

Percentage of rivers in England in good biological condition: 1990 – 2004



Source: Environment Agency

The ecological health of the water environment is a key test of its sustainable management. The indicator shows river lengths which support diverse aquatic macro-invertebrates (eg snails, beetles, larvae and worms) and which are likely to also support a complementary range of flora and fauna. River length of good biological quality has increased slightly from 67% in 2000 to 70% in 2004, following a marked improvement in the 1990s. The increasing trend suggests that there is an improvement in the river habitat quality and associated biodiversity. This reflects more sympathetic river management and adoption of pollution prevention measures by various sectors including major investment in, and control of, point source pollution.

5. Measuring our progress – Headline indicators

Published November 2006

H6 UK fish stocks fished within safe limits

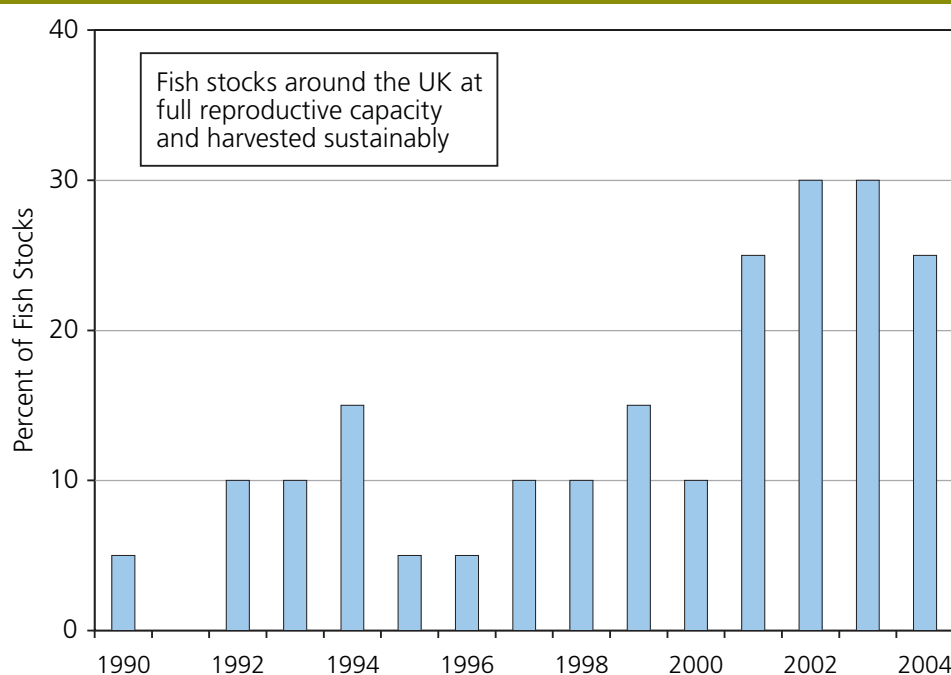
Objective: To protect the fish stocks around the UK by increasing the percentage of stocks fished sustainably

Assessment of indicator progress towards objective

2003 🌊; 2006 ✅

Since 2001, between 25% and 30% of fish stocks have been assessed as being at full reproductive capacity and harvested sustainably, up from between 5% and 15% in the 1990s. The indicator trend is therefore assessed as positive although substantial further improvements are needed to achieve the long term sustainability of UK fisheries.

Sustainability of fish stocks around the UK: 1990 – 2004



Notes: Based on 20 stocks for which status has been assessed throughout the period. Figures relate to finfish stocks only and are derived from ICES ACFM stock assessment reports.

Source: Centre for Environment, Fisheries and Aquaculture Science/Advisory Committee on Fisheries Management reports

Fish are an integral component of marine biodiversity. They are also important in the food chain for seabirds, seals and cetaceans and are a source of food and employment for people. Sustainable fisheries will help to ensure our marine ecosystems remain diverse and resilient and provide a long term and viable fishing industry, which will benefit all. There have been improvements in the proportion of assessed fish stocks considered to be fished sustainably.

5. Measuring our progress – Headline indicators

Published November 2006

H7 Delivery of local biodiversity targets in England

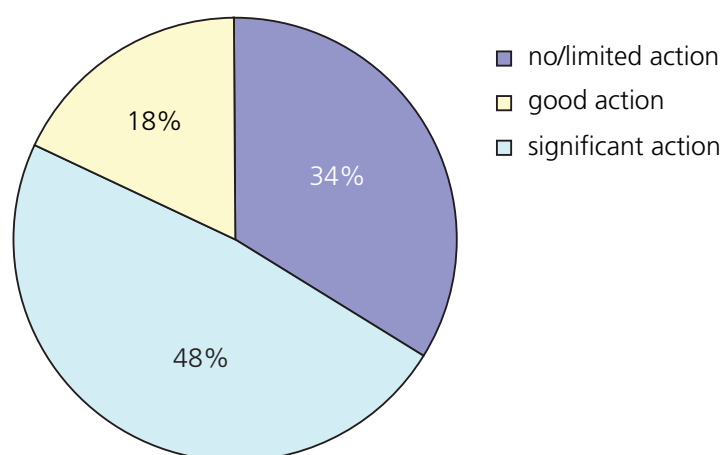
Objective: To encourage delivery of local biodiversity partnership objectives and targets

Assessment of indicator progress towards objective

2003 Indicator not developed ; **2006** No trend data

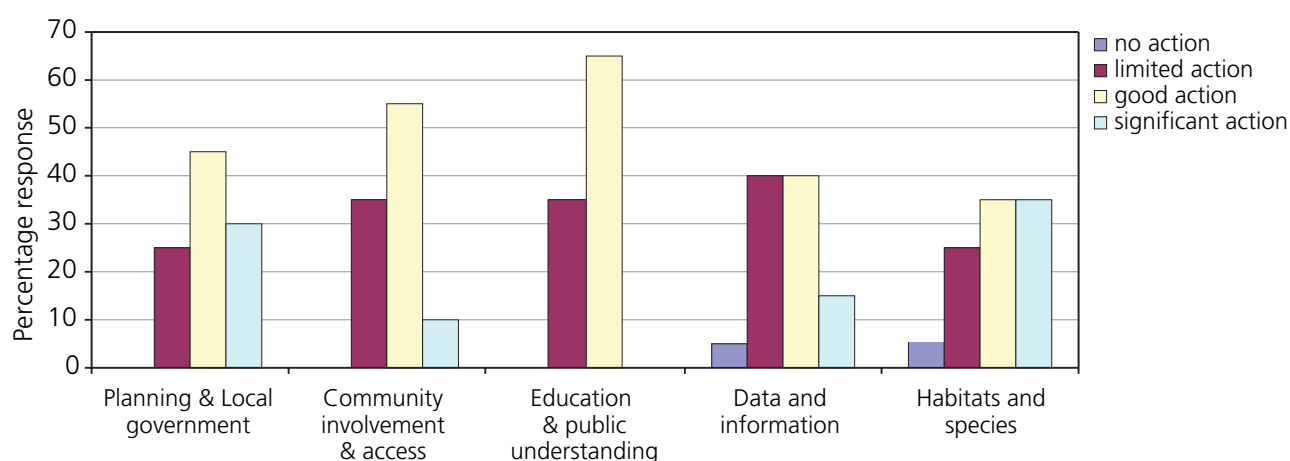
A good or significant level of action was recorded across five key elements of delivery by, on average, 66% of the Local Biodiversity Partnerships that were assessed in 2005. Significant levels of action were reported most frequently on delivery of action for habitats and species. No trend data are currently available.

Status of delivery of local biodiversity objectives across 5 key elements by Local Biodiversity Partnerships in England



Source: Defra

Delivery of biodiversity objectives for 5 key elements n=20



Source: Defra and local partners

5. Measuring our progress – Headline indicators

Published 2003

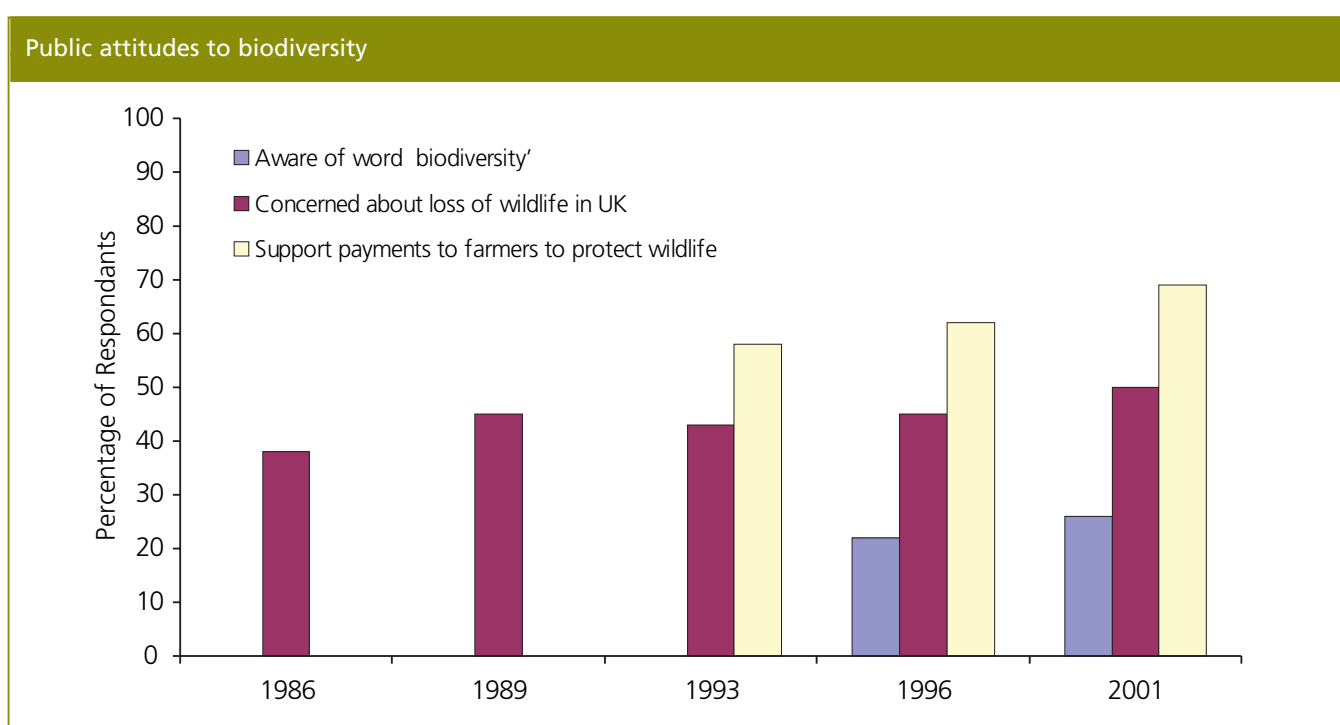
H8 Public attitudes to biodiversity

Objective: To raise public awareness of and promote positive attitudes towards biodiversity

Assessment of indicator progress towards objective

2003  ; **2006** No Assessment, not updated since 2003

Concern about loss of wildlife and willingness to pay for conservation have increased.



Source: Defra (Public Attitudes Survey 2001)

People in all walks of life play a vital role in championing wildlife conservation. Willingness to support and participate in active conservation of biodiversity is developed through media coverage, campaigns by non-governmental organisations and direct experiences. Concern for loss of wildlife has fluctuated but in general has increased from 38% in 1986 to 50% in 2001. Support for the payment of farmers to protect wildlife has increased from 58% in 1993 to 69% in 2001. Awareness of the term 'biodiversity' (introduced into public policy at the Rio Earth Summit in 1992) has increased slightly since 1996 from 22% to 26%, but it remains relatively unfamiliar.

6. Progress Reports for each workstream

Preamble

The sections that follow describe the work of the ten workstreams. These represent five key policy areas where integration needs to be achieved: agriculture, water and wetlands, woodland, marine/coastal management and urban; and five areas where cross-cutting improvement is needed: driving local and regional action; the economics and funding of biodiversity; the engagement of business; promoting education and public understanding and climate change³⁰.

In March 2004, we held a workshop to facilitate joint working between the sectoral and cross-cutting groups and identify the key deliverables from each workstream for 2006. These are referred to as the “key deliverables” in the text that follows, and the progress relating to the key deliverables is highlighted. Significant work has been done across all workstreams of the strategy to embed biodiversity in all areas of policy and decision-making. In summary:

Agriculture

Considerable progress has been made on policies to enhance the biodiversity value of agricultural land, with reforms to the Common Agricultural Policy now in place that should reduce the negative impact of subsidy payments, and the roll out of a new Agri-environment scheme, Environmental Stewardship, that is now introducing widespread incentives for positive environmental management.

Water and wetlands

Substantial progress has been made on several fronts. There have been significant developments in legislation, policy, strategic planning and on-the-ground improvement work. Together, these have raised the profile of water and wetland biodiversity.

Advances include action to incorporate wider biodiversity requirements into river basin planning and management. The developing ‘Wetland Vision for England’ will help planners and practitioners contribute to a holistic approach of land and water management. On a practical level more than 170 water and wetland SSSIs will benefit from £500m of investment work during 2005-2010 as a result of the fourth Periodic Review of Water Prices. Tackling diffuse pollution, responding to increased pressures on water resources as well as other consequences of climate change, and the need for a coherent approach in dealing with non-native invasive species remain major challenges.

Woodlands and forestry

The launch in 2005 of the Government policy on ancient and native woodland, backed by numerous practical initiatives and projects, represented a major step forward in promoting enhanced biodiversity in England’s woodlands and forests. Good progress has been made with the development of a statement of delivery policy and practice on the restoration of open habitats from forest and this will also make a substantial contribution to biodiversity and other public benefits.

³⁰ In December 2004, EBG held a workshop meeting on climate change, following which a further cross-cutting workstream was established to identify the impact of climate change on the work of the EBG, and to advise on how to respond to the challenge of climate change, and in particular in developing adaptive strategies in existing policy frameworks and for new decisions.

6. Progress Reports for each workstream

Towns, cities and development

Notable developments include the publication of Planning and Policy Statement 9 in August 2005; inclusion of biodiversity in CABI Space's broader agenda; publication in March 2006 of guidance for the management of parks and urban green spaces, and progress on the research work on the value of biodiversity in urban gardens (BUGS).

Coasts and seas

A Marine Bill will put in place a better system for delivering sustainable development of the marine and coastal environment, both the use and protection of our marine resources and addressing economic and social as well as environmental concerns.

This will propose a more strategic and streamlined approach to managing marine activity, and also in contributing towards the European Marine Strategy.

Climate change adaptation

A new cross-cutting Climate Change workstream was created to provide guidance on impacts of climate change, identify research needs and promote adaptation strategies.

Local and regional biodiversity

Capacity to deliver biodiversity at the local and regional level has been further secured via funding allocated in the 04/05 Spending Review and SITA Environmental Trust allocations. Steps have been taken to raise the profile of biodiversity at the local and regional level through integrating biodiversity into mechanisms such as community strategies, performance assessment and planning frameworks.

Economics and funding

Achievements include an analysis of funding for biodiversity in England; work on compiling a framework of biodiversity valuation methodologies; providing information on economic values of biodiversity which are currently available; and work on the costing of the UK BAP.

Business and biodiversity

Overall progress has been good, with most notable successes being raised awareness of biodiversity within the business community, engagement with the BBC on business involvement with their Breathing Places campaign and production of a thorough assessment of the availability of tools for companies to manage biodiversity in England.

Education and public understanding

The process of being engaged in the *Breathing Places* campaign has energised activity across the whole England Biodiversity Strategy. It has also become a rallying point for many within the biodiversity sector and is in the process of engaging many Departments and Agencies across Government at national and regional level. The central role of communications and public awareness activities within all workstreams has been highlighted and work has begun on developing tools to assist those workstreams in achieving better outcomes.

6. Progress Reports for each workstream

Workstream Leaders

Agriculture	Ann Davies (Defra) succeeded in August 2005 by Sue Armstrong-Brown (RSPB)
Water and Wetlands	Paul Raven (Environment Agency)
Woodlands and Forestry	Simon Pryor (Forestry Commission)
Towns, Cities and Development	David Goode (University College, London)
Coasts and Seas	John Roberts (Defra) succeeded in May 2006 by Diana Linskey (Defra)
Climate Change Adaptation	Andrew Stott (Defra)
Local and Regional Biodiversity	David Miller (Durham County Council) succeeded in May 2006 by Paul Cobbing (Government Office West Midlands)
Economics and Funding	Helen Dunn (Defra)
Business and Biodiversity	Mike Barry (Marks and Spencer)
Education and Public Understanding	Doug Hulyer (Wildfowl and Wetlands Trust)

6. Progress Reports for each workstream

Agriculture

Vision

Conservation and enhancement of biodiversity associated with farmed and semi-natural habitats, within the context of viable rural business in which land managers maximise, and are valued for, their contribution to conservation.

Key deliverables to 2006

1. Roll out the new Environmental Stewardship Scheme in 2005 (Complete)
2. Rationalise conservation advice – codification, aggregation and knowledge transfer

Progress/ Achievements to date

Key deliverable 1 has been completed with Environmental Stewardship successfully rolled out in 2005 and over 2.5 million hectares now under agreement. The Agri-environment scheme review was completed and Environmental Stewardship (ES) was launched in 2005. ES now includes resource protection measures which are a new objective for agri-environment schemes in England. The new schemes promote and reward appropriate land management techniques that will benefit existing semi-natural habitats, help reverse losses in farmland features of value to wildlife and retain existing semi-natural farmland habitats.



Entry Level Environmental Stewardship (ELS) and Organic Entry Level Environmental Stewardship (OELS) are aimed at encouraging the majority of farmers in England to participate in an agri-environment scheme with a range of simple but effective low-cost management options. These will have the cumulative effect of producing wide-scale benefits for biodiversity on farmland. To date nearly two million hectares of agricultural land is being managed under ELS.

Higher Level Environmental Stewardship (HLS) will provide additional benefits particularly for BAP priority habitats and species, via a more intensive, but carefully targeted approach to habitat management.

To date nearly two million hectares of agricultural land is being managed under ELS
(Andy Hay, rspsb-images.com)

6. Progress Reports for each workstream

Key deliverable 2. Substantial progress has been made on the rationalisation of Defra funded conservation advice. New contracts for the provision of Defra funded conservation advice are in place, and an advice co-ordination project is currently underway. This project aims to identify ways to better co-ordinate the process of developing and deploying Defra funded advice to farmers and land managers, including conservation advice. In addition there has been progress in the Whole Farm Approach, with the evaluation of the Whole Farm Appraisal Pilots completed and a decision on national roll out due in 2006.

Other achievements include the mid-term review of the Common Agriculture Policy (CAP), negotiated in June 2003, resulted in decoupling (breaking the link between subsidy and production – removing the incentive for intensive agricultural practices), and making subsidy dependent on satisfying a range of environmental conditions (Cross Compliance) which will promote good environmental practice. These changes were implemented from January 2005. The inclusion of compulsory buffer strips and hedgerow protection and management conditions within Cross Compliance should benefit biodiversity by providing additional habitat, and also by linking existing fragmented habitats and isolated species (including those which are BAP priority). A monitoring observatory, the Agriculture Change and Environment Observatory (ACE), has also been set up which will report on changes to farming practice as a result of CAP reform.

- Establishment of the New Forest National Park Authority.
- Extension of Nitrate Vulnerable Zones completed
- Common Land Reform Bill published

Challenges

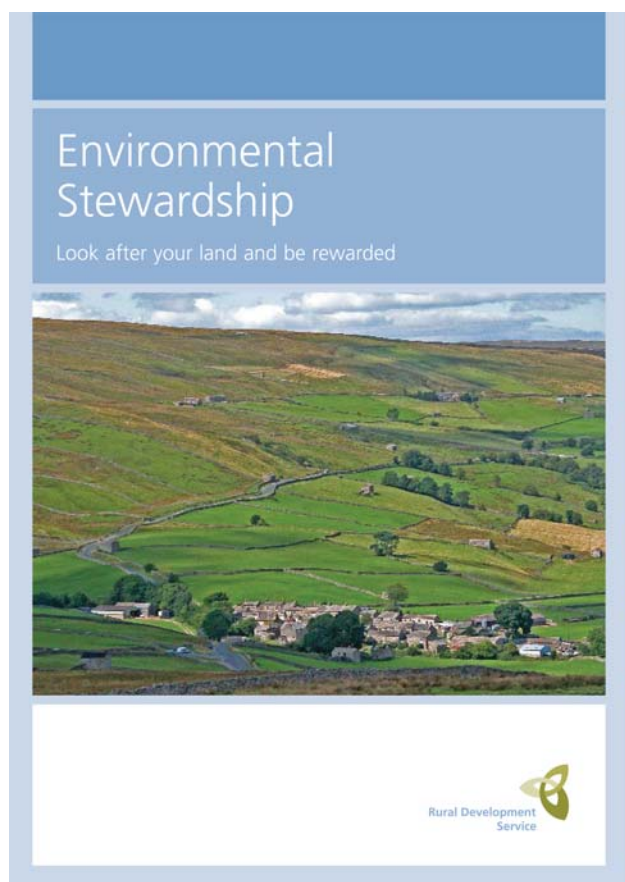


Key challenges include ensuring that there is adequate funding for Environmental Stewardship in the next Rural Development Programme (2007-2013). Monitoring of the 2003 Common Agricultural Policy reforms over the coming years will be key to the success of the work of the Agriculture Workstream. The ACE Observatory will be the main tool that helps us do this. A work programme for the Observatory has been devised with several new monitoring contracts due to be let which will provide a monitoring framework and baseline information from which to review the impacts of CAP reform. ES monitoring results will also feed into the observatory to provide a bigger picture of changes in the agricultural landscape.

The introduction of environmental stewardship schemes may help to restore populations of the once common Cornflower
(Peter Wakely, *Natural England*)

6. Progress Reports for each workstream

Longer-term prospects to 2008 and 2010



The effects of market forces on the agriculture sector post-CAP reform are unknown and it is acknowledged that it will be more difficult to predict the changes to farming practice under the new CAP regime. Areas of particular concern at the moment are: unmanaged abandonment of semi-natural habitats (particularly BAP priority habitats such as heathland); further intensification and specialisation of cropping/production; further loss of mixed farming systems or particular systems such as extensive beef grazing, and the effects of wide-scale cropping of novel and bio-fuel crops, all of which could have a potentially negative impact on biodiversity. The predicted wide-scale biodiversity benefits of Entry Level Environmental Stewardship will only happen if there is significant take-up of the scheme.

We need to ensure that that the target of 60% of agricultural land in England to be managed under the scheme by 2007 is met. Reducing nutrient surpluses in agriculture and improving the biodiversity value of agriculturally productive land is a key area of new work to be taken forward, moving conservation from the edge to the centre of the field.

6. Progress Reports for each workstream

Water and Wetlands

Vision

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.



Wetland habitats provide a multitude of benefits from filtering out pollution and reducing flood pressures, to recharging underground water supplies (*Peter Wakely, Natural England*)

Key Deliverables to 2006:

1. Integration of biodiversity into river basin planning and management
2. A strategy for tackling diffuse pollution from agriculture.

6. Progress Reports for each workstream

Progress

Substantial progress has been made on a geographical information system to help build wider biodiversity requirements in river basin planning and management (Key Deliverable 1).

The second phase of river basin characterisation required by the Water Framework Directive (WFD) has revealed the extent of nutrient enrichment in rivers, lakes and ponds in England (Key Deliverable 2).

Work to develop a Biodiversity Framework for river basin management plans, progressed well, with the River Ribble being used as a pilot. Other research looked at the potential impact of land use change on flooding in the Ripon catchment. In 2005 the Ripon catchment research was well under way. Progress has been characterised by a number of small-scale advances: hydrological monitoring has been installed; meetings have been held with local farmers and landowners to raise awareness of the project, and encourage land management practices (including uptake of HLS) to contribute to flood risk management and improve biodiversity. The first phase of the river basin Biodiversity Framework (River Ribble pilot) has been completed.

Implementation of the Water Framework Directive (WFD) has moved forward with the second phase of river basin characterisation well under way. Work on developing biological water quality objectives, and agreeing water quality targets for designated sites, was further underpinned with regulations³¹ to implement the WFD and publish maps summarising the first phase of river basin characterisation. These maps detail the pressures contributing to the risk of water bodies failing to achieve good ecological status by December 2015. In 2005 the second phase of river basin characterisation started taking into account a wider range of water bodies and a paper has been received by Defra stakeholder group with proposals for a number of additional lakes, saline lagoons and networks of drainage channels of biodiversity significance. In addition, the first ever national (UK) database inventory of lakes larger than 1 hectare was completed.

Natural England, the Environment Agency, the RSPB and now also the Wildlife Trusts, are producing a joint Wetland Vision for England. This Vision will provide a visual interpretation of the scale and potential location of new and restored water and wetland habitats, bringing our wetland heritage back to life. A wide consultation on the project was launched in February 2006, and the intention is to produce a vision document and the basis of a mapping tool showing wetland creation opportunities by mid 2007.

Biodiversity in protected sites has been an important factor in the fourth Periodic Review of Water Prices where £500m of investment will benefit more than 170 water and wetland SSSIs damaged by sewage pollution and over-utilisation of water. Also included are schemes to improve the condition of upland SSSIs and achieve more sustainable approaches to water quality through land management measures.

³¹ The Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 have been made jointly with the National Assembly for Wales: the regulations cover Wales and most of England

The Water Environment (Water Framework Directive) (Northumbria River Basin District) Regulations 2003 which transpose the Directive in relation to the Northumbria River Basin District. Separate Regulations are provided as this District includes a small part of Scotland)

The Water Environment (Water Framework Directive) (Solway Tweed River Basin District) Regulations 2004 transpose the Directive in relation to the Solway Tweed river basin district which crosses England and Scotland

Water Environment and Water Services (Scotland) Act 2003. The Scottish Environment Protection Agency is the named Competent Authority.

6. Progress Reports for each workstream



A joint wetland vision for England – providing a visual interpretation of the scale and potential location of new and restored water and wetland habitats
(Peter Wakely, Natural England)

Challenges

Tackling diffuse pollution remains the single biggest task to ensure that water and wetlands SSSIs achieve favourable or recovering condition by 2010. A major programme of farmer engagement is now underway in forty priority catchments, through the England Catchment Sensitive Farming Delivery Initiative, for which Defra has allocated £25M over the period from April 2006 to March 2008. In parallel with this, a costed framework of action is needed, setting out changes in policy, economic incentives and funding streams to ensure delivery of the necessary improvements, with priorities clearly identified.

Longer-term prospects

Biodiversity gains from implementing the Water Framework Directive remain a major goal for the group. This means an integrated and sustainable approach to flood and erosion risk management, wise use of water resources and taking measures to improve water quality at a catchment scale. Adequate funding for land management incentives to tackle diffuse pollution from agriculture, and a clear policy mechanism for ensuring action is taken where voluntary measures are inadequate, remain essential ingredients in making catchment-sensitive farming a reality. Given competing demands for scarce resources, targeting priority catchments will be a major challenge, but work on the wetland vision and river basin biodiversity frameworks will help to identify priority areas.

The biggest single long-term issue is climate change and the need to anticipate and adapt to the likely geographically-related trends in precipitation, extreme weather events such as summer drought and winter storms as well as pressures on freshwater habitats from sea level rise, and the consequent long-term viability of certain habitat types in various parts of the country, particularly the south-east. Non-native invasive species present an increasing threat to our native wetland biodiversity, and work to tackle this issue will become a more significant part of the group's work programme.

6. Progress Reports for each workstream

Woodlands and Forestry

Vision

Woodlands 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.



Protecting the irreplaceable – preventing loss or damage to our ancient trees and woodland (*Isobel Cameron, Forestry Commission*)

Key deliverables

1. New Governmental policy for ancient and native woodland – with delivery measures
2. New statement of policy and practice for restoring non woodland, or open, habitats on forest land.

6. Progress Reports for each workstream

Progress

The new Government policy for ancient and native woodland – ‘Keepers of Time’ – has been launched. This focuses on the range of public benefits that such woodlands provide, and the need for management and restoration to prevent further loss of biodiversity. Detailed new practice guidance has been developed with input from a wide range of stakeholders and is at consultation stage (Key Deliverable 1). Specific new protection was provided for ancient woodland by ODPM in Planning Policy Guidance 9 which was published in 2005.

Significant progress has been made on the restoration of non-woodland, or open, habitats on forest land. Views were sought on the principle and overall direction via the consultation on England’s Trees, Woods and Forests. An analysis of progress to date was completed for both the public forest estate and areas in private ownership. This showed that over 5000 hectares of heathland alone had been restored by 2006. Development of a statement of delivery policy and ‘joined up’ implementation measures are expected in 2007 (Key Deliverable 2).

Work started in 2002 on developing a new package of incentives for woodland management and creation as part of the England Woodland Grant Scheme (EWGS). In 2005 the full EWGS was launched with specific targeting of grants to improve condition, restore ancient woodland and expand native woodland.

A full survey of the ancient woodland on the Forestry Commission estate was completed and published in 2002. This was followed by the start of work on improving and restoring these ancient woodlands.

In 2005 a major research project to identify the possible causes of the decline of woodland bird populations was completed. This complemented comparable research into long term changes in woodland vegetation. Both studies suggested changes in woodland structure may be a significant cause of long-term declines. The downward trend of woodland bird populations appears to have been arrested but it is too early to be confident that this is not a short-term effect. Research is ongoing and new guidance on how to manage woodland in a way that benefits declining birds has been produced.

Woodland protection and conservation was integrated into agri-environment schemes in 2003. This included buffer strips, small-scale woodland creation and conservation of farmland trees. By 2004 the protection had been successfully integrated into both the Entry Level and Higher Level agri-environment Schemes.

In 2005 increased funding was secured and a greatly enhanced programme to improve the condition of woodland SSSIs is now being implemented. This will enable the delivery of the 2010 PSA target for the 108 000 hectares of woodland SSSIs plus the 26 000 hectares of non-woodland SSSIs on the Forestry Commission estate.

Challenges

Identifying external threats and creating a multi-sector approach is the most important issue to effectively tackle threats such as diffuse pollution, development pressures and rising populations of problem species, especially deer. Ensuring the management of woodlands and restoration of non-woodland habitats are adequately funded and targeted through EWGS Higher Level Stewardship will be a priority.

6. Progress Reports for each workstream

The steady downturn in woodland management activity due to unfavourable timber markets has been a problem, but the woodfuel market could be a major opportunity to reverse this decline.



Grants issued under the England Woodland Grant Scheme are aimed at improving condition, restoring ancient woodland, and expanding native woodland. *(Keith Dawson, Independent Photographer)*

Longer-term prospects

The key deliverables from 2008 to 2010 will build on the success of the last 2 years. Ancient woodland and the restoration of open habitats will remain the key priorities. In future, we hope to focus more on addressing threats at the landscape scale. Initially, we will promote this approach through incorporating ecosystem principles and spatial planning approaches into relevant policy and practice. There are also opportunities to set a positive example by delivering best practice management for biodiversity across publicly owned woodland.

6. Progress Reports for each workstream

Towns, cities and development

Vision

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 a minimal impact on wildlife habitats and contributes to the conservation of biodiversity.



Urban gardens can play a vital role in supporting biodiversity in our towns and cities
(Andy Hay, rspb-images.com)

Key deliverables

1. All urban local authorities to recognise the functional importance of the green infrastructure in their plans and proposals
2. CABE Space to have incorporated EBS priorities in their work programme

6. Progress Reports for each workstream

Progress

On key deliverable 1, *Planning Policy Statement 9: Biodiversity and Geological Conservation* and the associated Circular were published in August 2005. PPS 9 makes clear that planning policies should aim to maintain and enhance, restore or add to biodiversity interests and recognises that it is possible to build in beneficial biodiversity features as part of the design of new developments. PPS 9 is also supported by a Good Practice Guide, published in March 2006 which includes practical examples of how local authorities can plan positively for biodiversity. These documents recognise the importance of urban areas and the key principles reflect the aims in the England Biodiversity Strategy for ensuring that the impact of planning decisions on biodiversity are fully considered.

The group also contributed to a study of urban areas by the Royal Commission on Environmental Pollution. The study is focusing on the urban environment, including the environmental impacts of urban living, and the implications for health and well-being. The Chair of the Group was also commissioned to provide a report on the importance of the Green Infrastructure. This emphasised inter alia the importance of biodiversity for flood alleviation with recommendations regarding implementation of sustainable urban drainage systems, and the health benefits of biodiversity within urban areas. The Commission expects to publish its report early in 2007.

On Key Deliverable 2, the establishment of CABI Space to champion open space issues has ensured input on biodiversity through its Strategic Enablers and Standards Advisory Group. In 2005, CABI Space began development of guidance, aimed at parks managers, on encouraging biodiversity in urban green spaces and integrating biodiversity into parks and green space management. This was published in June 2006. Biodiversity is now also included within CABI space's broader agenda, for example as a case study in guidance on involving young people in the design and care of urban spaces www.cabispacespace.org.uk/data/pdfs/youngpeoplesguide.pdf.

Green roofs have been promoted through publications by the City of London and English Nature and a conference held at Sheffield University. CIRIA published a '*working with wildlife*' information pack in 2004, and set out proposals to provide guidance on biodiversity in buildings focusing on technical, structural and planning issues in integrating ecological and sustainable drainage features (primarily green roofs) into building design.

In 2004 a research project on the value of urban gardens for biodiversity began across the UK including 2 cities in England. By 2005, the results of the first phase of the Biodiversity in Urban Gardens research (BUGS1) in Sheffield were available on the BUGS website: <http://www.shef.ac.uk/uni/projects/bugs/BUGS1/bugs1-index.html>.

A second project (BUGS2), which is partly funded by Defra, builds on the methods and findings of the first study, but involves work across four cities in the UK, and is set to continue into 2006/2007. The broad aims of the project are to establish the size and composition of the resource that domestic urban gardens provide, the occurrence of important features for biodiversity and ecosystem functioning across those gardens, and the composition and structure of the floral assemblages associated with the urban garden resource across different cities.

In 2006, as part of the wider review of UKBAP priority species and habitats, English Nature put forward a case for the inclusion of 'post-industrial land of high nature conservation value' as a new priority habitat. The Group supported this recommendation.

6. Progress Reports for each workstream



Bird feeders provide a welcome supply of food during difficult times of the year, and are an ideal way of encouraging birds into our gardens
(Paul Glendell, Natural England)

Challenges

Closer working with DCLG on cleaner, safer and greener communities is crucial to embed biodiversity within the urban fabric and there is a need to develop closer links with RDAs. For example, we need to work with DCLG and CABE to support local authorities in the creation and management of high quality urban green spaces that can enhance biodiversity. Specifically, local green space strategies need to have due regard for biodiversity. The numbers of houses proposed in response to the Barker Review is likely to place a considerable strain on the environmental infrastructure. It is, therefore, important to ensure that the functional benefits of biodiversity form a key consideration in future development proposals and that the nature conservation value of brownfield sites, where appropriate, is recognised. Given the breadth of the towns, cities and development agenda, a key challenge is maintaining focus on those areas where the group can add value and bring maximum benefits for biodiversity. The group will work closely with the Local and Regional Group on shared areas of responsibility.

Longer-term prospects

There is a need for recognition of priority urban habitats and species in the UKBAP with agreed targets. This should help address the mistaken perception that urban biodiversity is less important than that found in the countryside. There is also a need for increased capacity and skills for the management of open space rich in biodiversity. Biodiversity needs to be fully integrated into urban design and management, from buildings to public (eg street trees) and green spaces, brownfield land to domestic gardens, as parts of networks of functional 'green infrastructure'. The Group will take the opportunity to influence proposals for a Planning Gain Supplement which could make a substantial contribution to the functional environmental infrastructure in urban areas. This has particular relevance to coping with the impacts of climate change in urban areas.

6. Progress Reports for each workstream

Coasts and Seas

Vision

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.



Striking a balance – reconciling human needs with the conservation and restoration of wildlife habitats
(Peter Wakely, Natural England)

Key Deliverables to 2006:

1. Improving the current framework for managing human activity which affects the marine environment
2. Participating fully in the European Marine Strategy Directive and representing UK interests.

6. Progress Reports for each workstream

Progress

Under the Review of Marine Nature Conservation (RMNC), a pilot project was completed in the Irish Sea which examined the integration of biodiversity objectives into marine environmental management at a regional sea scale. The Review of Marine Nature Conservation published its report to Government in 2004 and detailed its investigation and recommendations for improving protection for habitats, species and system functioning in UK waters. In December 2005, the four administrations prepared a joint response to the RMNC recommendations entitled '*Safeguarding Our Sea Life*'. This response document sets out the shared policies for marine biodiversity and the intentions in relation to the 16 recommendations made in the Working Group's report.

In 2003, the Darwin Mounds was afforded protection through an EC regulation which prohibited the use of bottom trawls or similar towed nets operating in contact with the bottom of the sea. Informal consultation on the designation of the site as a Special Area of Conservation (SAC) was carried out by UK Government in 2003. Following the transposition of the Habitats Directive through the Offshore Marine Regulation, due to be made early in 2007, the Darwin Mounds will be formally consulted on for designation as a SAC.

Defra's five year strategy, published in December 2004, announced the intention to introduce a Marine Bill in the current Parliament. Through this process Government will be addressing a number of key areas, including marine spatial planning, reviewing how the licensing system for marine developments might be simplified and improved, and mechanisms to improve the protection of marine biodiversity which may include marine protected areas, species protection provisions and establishing ecosystem objectives for the marine environment. A Marine Bill consultation document was published in March 2006. It set out the five main areas expected to be covered in a Bill and how they interact and asked specific questions on four of those areas. The outcome of this consultation will help determine the timetable for the further development of proposals and introduction of a Bill to Parliament.

In December 2004, Defra commissioned a pilot study in the Irish Sea, to explore how Marine Spatial Planning might work in practice. The final report was published in February 2006 and is available at www.abpmer.co.uk/mspp.

In 2003, the seven completed pilot Coastal Habitat Management Plans (ChaMPs) around the coast of England aimed to reconcile the requirements of Natura 2000 sites with natural coastal processes and coastal defence.

In 2004 Defra commissioned a stocktake of the current framework for managing activity in the coastal zone. This has been followed up with the publication of an 'Integrated Coastal Zone Management' (ICZM) consultation paper in June 2006 to gather views from coastal stakeholders on possible objectives for an ICZM strategy for England. When completed this strategy will complement similar ones being prepared for Wales, Scotland, and Northern Ireland.

Challenges

Subject to the wishes of Parliament, the Marine Bill will provide the mechanism to enable us to address the challenges of protecting nationally important marine species and habitats. It will be important to ensure that the Bill is implemented properly to identify appropriate areas for protection.

6. Progress Reports for each workstream

Formal consultation on the Offshore Marine Regulations was undertaken between May and June 2006. Once in place these regulations will allow Special Areas of Conservation and Special Protection Areas to be designated between 12 – 200 nautical miles. The UK is committed to establishing a representative network of marine sites in UK waters. A work programme involving survey and site selection has been developed to progress the establishment of this network.

Longer-term Prospects

Prospects for the workstream will be dependent on progress towards delivering a Marine Bill, and in working with other EU Member States on the European Marine Strategy Directive and its implications (e.g. for monitoring, targets and ecosystem objectives). We will ensure that where possible we continue to reconcile human needs with the conservation and restoration of wildlife habitats throughout these processes, and continue to explore how issues such as climate change might impede success.

6. Progress Reports for each workstream

Climate Change Adaptation

Vision

Landscapes and seas in which species are able to survive or to disperse and colonise new areas, establishing new habitats, in the face of climate change. Policies in all sectors which seek to minimise impacts on biodiversity, to maximise opportunities to accommodate rapid changes in biodiversity, to maintain the supply of ecosystem goods and services, and to minimise emissions of greenhouse gases.

Key Deliverables to 2006

1. Climate Change Workstream established and terms of reference agreed.
2. Research contract undertaken to review evidence of impacts and explore adaptation options.

Progress

The new Climate Change workstream was established in March 2005 to:

- develop higher level guidance about the impact of climate change on biodiversity;
- develop guidance literature for biodiversity practitioners;
- identify research need and examine adaptation and resource protection strategies;

Since its establishment the workstream has been involved in two main activities. Firstly, the workstream commissioned a research project with the NERC Centre for Ecology and Hydrology (CEH), Oxford Brookes University and the British Trust for Ornithology. As part of this project the workstream has organised two workshops. One to explore the options for adaptation available for the EBS sectors and another to identify and prioritise research needs.

Secondly, in order to maximise synergy and avoid duplication, the workstream has engaged with other relevant initiatives in the UK and Europe, including:

- The Adaptation Policy Framework of the UK Climate Change Programme;
- The UK Biodiversity Reporting and Information Group (BRIG) guidance on adaptation to climate change for biodiversity planners and practitioners;
- Other relevant research and monitoring initiatives in the UK (eg. MONARCH3, PRINCE, BRANCH, BioClim; MarClim, MCCIP, TarMon);
- English Nature's information pack on 'Climate change – space for nature?'
- the European Environment and Sustainable Development Advisory Councils (EEAC) conference in September 2005; and
- the European Platform for Biodiversity Research Strategy (EPBRS) meeting held under the UK Presidency of the European Union in October 2005;

6. Progress Reports for each workstream

Outcomes

- Review of scientific evidence of impacts of climate change on biodiversity in England, including an exploration of the adaptations that are needed to meet the challenge of climate change;
- Costed proposals for establishing a network of monitoring sites for detection of climate change and air pollution impacts in the UK, published.

Challenges

The obstacles to delivery include: the gaps and high degree of uncertainty in the evidence base; the time and skills required to obtain, assimilate and communicate new knowledge; the lack of an existing policy framework for cross-sectoral adaptation.

Longer-term prospects

A robust, accessible, knowledge and evidence base is needed to support adaptation to climate change impacts, including an established network for detecting changes in biodiversity. Initial adaptations must be integrated into all workstreams and processes established to learn from experiences and adjust strategies accordingly. We need to develop both practical techniques and a strategic overview for adaptive management. We need to achieve a high level of awareness of impacts of climate change and means of adaptation in all relevant sectors, at national, regional and local levels.



Climate change will result in more episodic rainfall (Paul Glendell, Natural England)

6. Progress Reports for each workstream

Local and Regional Biodiversity

Vision

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.

Key Deliverables to 2006:

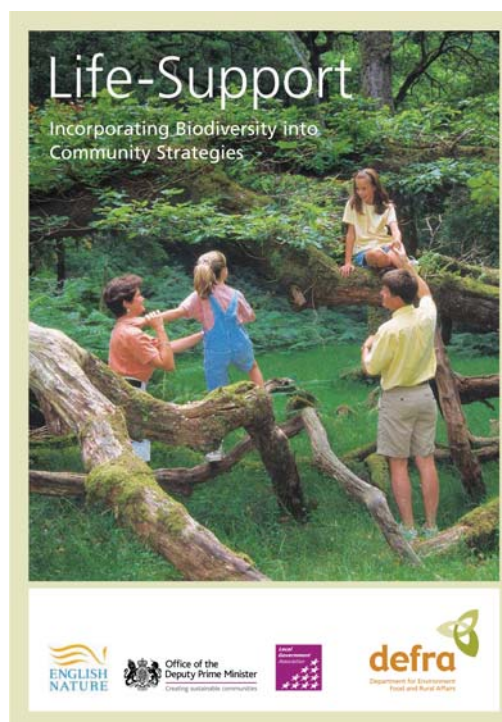
1. 100% Community Strategies to have explained role they play in delivery of local BAPs.
2. Biodiversity considered key component of regional government strategies.

Progress

On Key Deliverable 1, the workstream published guidance on incorporating biodiversity into Community Strategies, entitled, '*Life-Support*'. This was distributed to all Local Strategic Partnership Chairs, Chief Executives of Local Government and local biodiversity contacts. *Life Support*, and an accompanying CDROM resource are used by local biodiversity practitioners to encourage better incorporation of biodiversity objectives. The workstream also published '*Natural Partners*' illustrating how local biodiversity partnerships work towards their species and habitat targets as well as influencing key local economic and social sectors. A study commissioned by English Nature shows 63% of community strategies scoring moderate to good with regard to integration of biodiversity. Twenty per cent of strategies have targets built into action programmes and indicators.

On Key Deliverable 2, based on questionnaire surveys conducted in 2005 regional biodiversity partnerships in England report a high degree of integration of biodiversity into regional programmes and strategies, specifically 70% or above. The weakest area of integration is within Regional Economic Strategies.

The group has focused primarily on increasing capacity for delivery at the local and regional level and identifying and capitalising on opportunities to integrate biodiversity into local and regional policy. A major success for the group was securing £2.35m through Defra for regional and local delivery of biodiversity. This funding has led to recruitment of regional biodiversity co-ordinators. In addition, the exchange of ideas and good practice between Regional Biodiversity Forums has been encouraged to help the incorporation of biodiversity into regional, social and economic drivers, indicators and reporting. In 2004 a Regional Biodiversity Chairs Group was established to contribute to progressing the England Biodiversity Strategy.



6. Progress Reports for each workstream

In 2005, SITA Environment Trust allocated £13.5m to support local and regional biodiversity projects. The workstream worked closely with SITA Trust in developing a partnership between the Trust and the Regional Biodiversity Partnerships so that the funding delivered reflects regional biodiversity priorities.

A biodiversity 'Exchange Fair', held in Sheffield in March 2004, and a further LBAP conference in 2006 contributed to communication between local and regional practitioners, national lead partners and those leading on aspects of the England Biodiversity Strategy. In 2005 the Workstream participated at the '*Local Government Association 2005 Conference*'. The group was able to raise the profile of biodiversity within local authorities and showcase work on performance indicators, community strategies and the BBC Breathing Places campaign.

A research project on measuring local authority performance on biodiversity has been completed. A biodiversity indicator has been identified and a mapping methodology to record the indicator has been developed. This research will help to establish an evidence base for including biodiversity in future performance assessment frameworks.

Further opportunities have been taken to integrate biodiversity into local and regional policies, for example, the reflection of biodiversity in the Defra-led Regional Rural Delivery Frameworks and Rural Pathfinders, the inclusion of biodiversity indicators in Regional Spatial and Economic Strategies and promoting the incorporation of biodiversity into Local Area Agreements. This will be further developed as part of the 2006-2010 work programme. The Natural Environment and Rural Communities (NERC) Act 2006 also includes a duty on all public bodies to have regard to the purpose of conserving biodiversity. This affects local government and many regional bodies such as regional assemblies and regional development agencies. As part of their 2006 – 2010 work programme, the workstream are developing guidance to assist bodies in delivering this duty.

Challenges

A key priority is to ensure that the regional core services identified by the workstream are delivered to maximise the potential for securing longer term sustainable funding. These services include maintaining regional and local biodiversity partnerships, securing funding and influencing local and regional policy and delivery. Key drivers such as the biodiversity duty within the NERC Act can potentially play a major role in influencing policy at the local and regional level. The group will need to assess how to maximise the impact and effect of this duty and assess what support and guidance is required at the local and regional level.

Longer-term prospects

In the longer term, the workstream needs to focus on landscape scale initiatives which encompass economic and social objectives. Further work is also required to ensure that Local and Regional authorities have access to sources of advice, expertise and datasets necessary for them to integrate biodiversity into policies, processes and programmes. Work must continue on integrating biodiversity further into local and regional government, building on the driver provided by the biodiversity duty in the NERC Act. The requirement to compete with other local and regional priorities, such as economic or social concerns, will be a continuing challenge.

6. Progress Reports for each workstream

The Economics and Funding of Biodiversity

Vision

A holistic view of the implications for biodiversity of our decisions, taking account of the full economic costs and benefits to the economy, the environment and society as a whole, including future generations. Identifying and highlighting issues on both the scale of funding and allocation processes in order to ensure that our biodiversity objectives can be met.

Key Deliverables to 2006

1. Framework for valuing biodiversity to inform project and policy appraisals.
2. Costing the delivery of the UK BAP.

Progress

The Economics and Funding group has undertaken work on improving the way in which biodiversity is incorporated into public sector decision making. This work has culminated in guidance to Defra's Better Regulation Unit on the inclusion of biodiversity considerations and values in Regulatory Impact Assessments (Key Deliverable 1)³².

In 2003 research was undertaken to assess the impact of the quality of the environment (including biodiversity) on economic development and regeneration and to establish means of valuing changes in biodiversity. Members of the group have been involved in a number of studies which were completed and published by 2004, and which have contributed to our knowledge and understanding of the value of biodiversity³³. All of this work has been, and will continue to be, used by the group to illustrate the importance of the value of biodiversity in economic development and human welfare. The group has delivered a paper: The Economic Value of Biodiversity, which provides a framework for considering the economic value of the benefits associated with biodiversity conservation and enhancement (Key Deliverable 1).

In 2005 the Group was involved in the BAP target review process, ensuring that there was sufficient data to enable better costing of the BAP process. To this end, a research project to cost BAP was reported in May 2006. The initial report proposed a revised methodology for costing the HAPs and SAPs. The project has subsequently estimated the costs of delivering the BAP targets. In addition, this project updated the funding analysis for England (Key Deliverable 2).

In 2003, the main funding sources for biodiversity were scoped and quantified, as a prelude to identifying funding gaps and means of filling them. This is particularly important at local level where continuity of funding to support the capacity of local partnerships remains fragile. An initial funding paper was completed and circulated to the wider England Biodiversity Group in May 2005. This work has been further informed by the work done on the BAP costings and the

³² See <http://www.defra.gov.uk/corporate/regulat/ria/envguide/biodiversity/index.htm>

³³ These included the Evidence Based Policy Fund research on 'Valuing changes in Biodiversity' by Christie et al, 'Revealing the Value of the Natural Environment' by GHK and GFA Race, which considered the value of biodiversity both in terms of its contribution to human welfare, and its value for economic development, and the project on the 'Importance of the Quality of the Environment for Economic Development and Regeneration' by the University of Reading.

6. Progress Reports for each workstream

Defra work on Indicators, of funding of expenditure on biodiversity in the UK, and of UK Government funding on conservation of global biodiversity.

In 2004 members of the Economics and Funding group were involved in the setting up and work of the Socio-economic sub-group of the UK Biodiversity Research Advisory Group³⁴. This latter group was charged with undertaking an analysis of the UK Biodiversity Action Plan (UK BAP) and related policy commitments, and with identifying and prioritising socio-economic research needs. This group represents an important and valuable addition to the work being undertaken in this field.

Challenges

The group needs to ensure that the messages contained within the valuation framework are effectively communicated to the other groups within the strategy, in a way that is of maximum benefit to the wider England Biodiversity Group. The group also needs to update the funding analysis to reflect any changes that may occur, and take forward work on the natural economy.

Longer-term prospects

We would expect in the coming years to have a clearer picture of the extent to which biodiversity objectives should be achieved through specifically targeted programmes as distinct from a more biodiversity-orientated application of other main programmes such as the new Entry Level Stewardship Scheme. We aim to refine our understanding of how biodiversity is valued by people so that these values can be explicitly incorporated into public sector decisions. We also aim to build on existing research on ecosystem services and develop the evidence base on valuation of these services. The use of economic incentives to deliver biodiversity objectives will be a further key aim of the group.

The Economic Value of Biodiversity

The conservation of biodiversity in England underpins and supports valuable and varied landscapes and wildlife habitats. These are valuable to people because they:

- Support the production of food, timber and other rural produce
- Provide a resource for recreation, leisure and tourism
- Support vital ecosystem services – such as climate regulation, flood management and carbon storage
- Provide habitats for wildlife, which is valued by people both because it adds interest to countryside activities and for its very existence

This natural environment also has an important impact on the country's economy. Linkages between the environment and the economy can be grouped in terms of activities that help to shape and manage the natural environment, such as nature and landscape conservation, agriculture and forestry, and activities that benefit from the quality of the natural environment, such as tourism, fisheries, and the processing and marketing of 'green' food and timber.

³⁴ Publications on research priorities identified by the BRAG socio-economic sub group can be found at <http://www.ukbap.org.uk/BAPGroupPage.aspx?id=12>

6. Progress Reports for each workstream

Collectively, activities within sectors that are closely and positively connected with the management of the natural environment support nearly 300,000 full time equivalent (FTE) jobs in England, and contribute £6.5 billion in gross value added. This is more employment than is supported by either the chemicals or motor vehicle manufacturing industry in England. It is estimated that:

- There are 8,600 FTE jobs in nature and landscape conservation in England, in a variety of public, voluntary and private sector organisations;
- Around a quarter of forestry employment and output can be attributed to the establishment and management of semi-natural woodlands, and the harvesting and processing of the timber they produce;
- Green agricultural systems, including organic systems and land in agri-environment schemes, are estimated to support 27,000 FTE jobs and contribute £400 million in value added;
- Commercial fisheries, and fish processing activities, which support 5,300 and 8,300 FTE jobs respectively in England, are dependent on the sustainable management of the marine environment;
- More than 50% of rural tourism activity is dependent on landscapes and wildlife, supporting nearly 180,000 FTE jobs;
- Just over 2% of the £120 billion food chain involves the production and marketing of produce linked to a high quality rural environment (GHK 2004).

In addition, the conservation of biodiversity is directly valued by the public and can be measured by their willingness to pay for biodiversity improvements. Evidence using this approach includes: a study by Christie et al (2004) which estimated the economic value of biodiversity enhancements associated with an expansion of agri-environmental programmes at £16.55m PA for Cambridgeshire. The same study estimated the value of habitat re-creation programmes at £12.25m PA for Cambridgeshire and £6.21m PA for Northumberland. A study by Foster and Mourato (2000) estimates the value of human health and biodiversity impacts associated with pesticide use. Aggregated across the UK population the total value of preventing the decline of 9 species of birds was estimated to be £246m per year (1997 prices). A study by Willis et al (2003) estimated the non-use value of biodiversity within forests in the UK at £386m PA.

Business and Biodiversity

Vision

Companies automatically engaging in the management of, and reporting on, biodiversity as an integral part of their business operations and processes.

Key deliverables

1. Raised awareness of biodiversity within business, through better integration of biodiversity into environmental benchmarking and reporting mechanisms
2. Improved availability of sector based tools for companies to assist with the management of biodiversity.

Progress

Good progress has been made with raising awareness of biodiversity through web based guidance, workshops and participation with BBC's 'Breathing Places'. Further work now underway on improving tools for managing biodiversity at a sector level (Key Deliverable 1).

The workstream contributed to English Nature's work on improving condition of SSSIs in business ownership (Improvement from baseline of 53% company owned/managed SSSIs in 2003 in favourable condition to 71% in 2005) (Key Deliverable 2).

In 2003 work started on providing case studies for the DTI's Operating and Financial Review (OFR) working group on materiality. In 2004 the case study examples of 'materiality' in key business sectors were produced and disseminated, and the group responded to DTI's consultation exercise on proposals to introduce a statutory OFR for large companies. However, in November 2005 Government took the decision to repeal the mandatory requirement on quoted companies to prepare an OFR as contained in the OFR regulations so that they are required to prepare a Business Review instead.

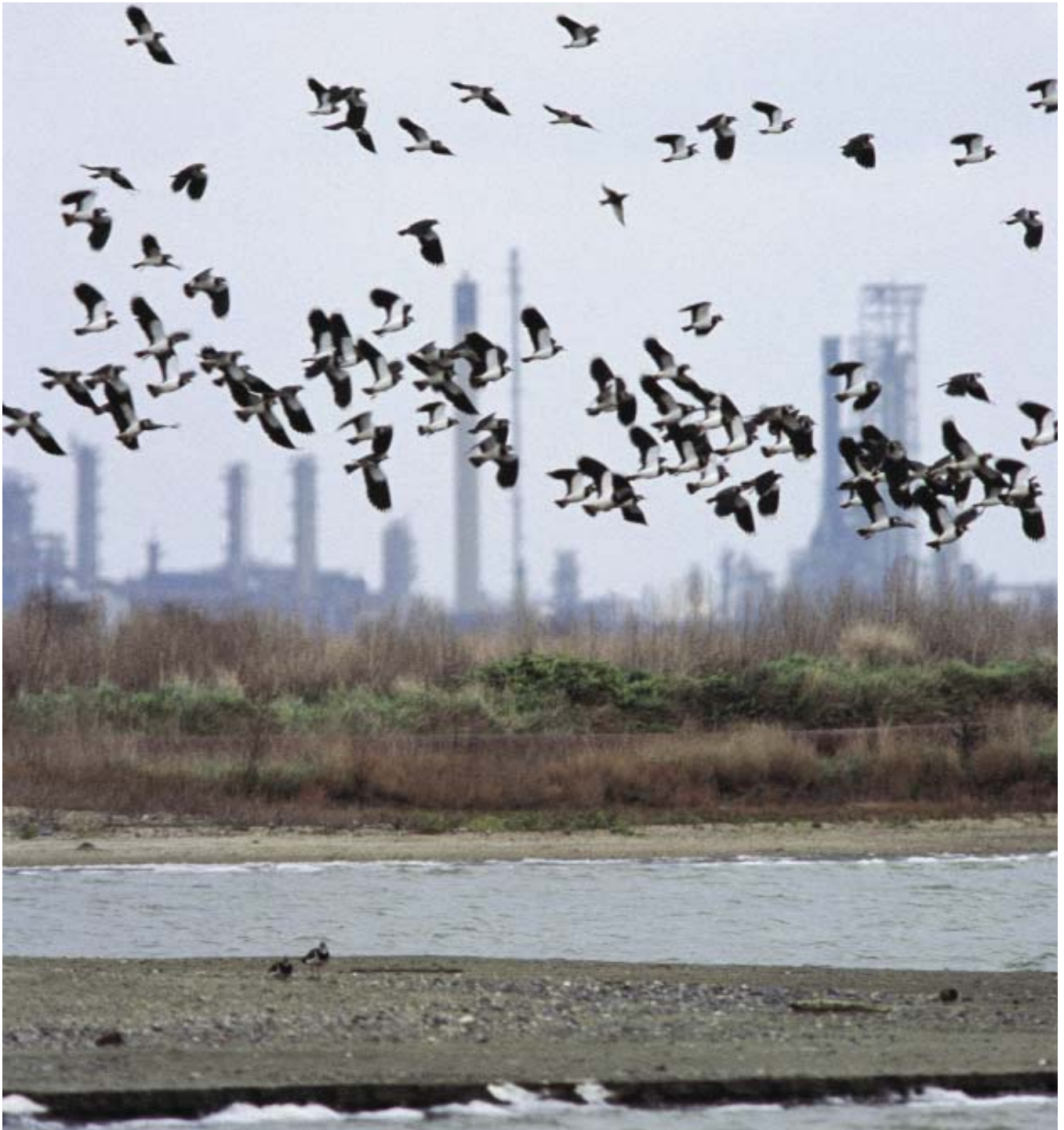
In 2003 regional workshops were planned to increase companies' understanding of biodiversity and their business. By 2004 over 80 participants from local biodiversity partnerships, NGOs and local government offices had taken part in six 'Engaging Businesses with Biodiversity' workshops held across England.

In 2003 the workstream improved the indicator on the condition of SSSIs in business ownership. In 2004 English Nature published the first ever analysis of the corporate sector in delivering nature conservation objectives *England's Best Wildlife and Geological Sites – The condition of Sites of Special Scientific Interest in England 2003: Business Supplement*. In 2005 the workstream advised English Nature (EN) on the content of a guide on managing SSSIs for business.

In 2003 plans for practical guidance on the management and assessment of company landholdings for biodiversity were prepared. The Business and Biodiversity Resource Centre website hosted by Earthwatch was updated including good practice guidance. A thorough analysis of the biodiversity tools currently available in the following eight industry sectors – Construction & Building Materials, Forestry & Paper, Mining, Oil & Gas, Utilities, Food Producers

6. Progress Reports for each workstream

& Processors, Food & Drug Retailers and Leisure & Hotels was produced in 2005. The analysis also outlined gaps where further tools are needed, and recommended solutions for filling these gaps and improving the biodiversity benefits delivered by each of the sectors. The workstream also investigated ways of improving the current business indicators and participated in the scoping of a 'Business and Biodiversity' practitioner guide in conjunction with IEMA and Aggregate Industries.



As users and beneficiaries of biodiversity, business & industry are becoming more aware of the need to manage their biodiversity impacts (Andy Hay, rspb-images.com)

6. Progress Reports for each workstream

Challenges

Key challenges for the future include further integration of biodiversity protection and enhancement into environmental and social responsibility programmes. Raising awareness and understanding of the business case for biodiversity remains the workstream's main goal. We need to work with the environmental programmes of trade bodies and industry associations to encourage more reporting on biodiversity.

The BBC's Breathing Places campaign provides an excellent opportunity to engage business in biodiversity. As there is no particular BBC workstream focused specifically on business (as for schools and communities), the challenge is to ensure that a sufficient number of businesses become actively engaged with the campaign.

Longer-term prospects

In the longer term there is a need to develop further common standards and performance criteria for biodiversity in business, in environmental management systems and in advice on reporting and disclosure. It is hoped that the Breathing Places campaign will provide a vehicle to engagement for many businesses new to biodiversity, and promote the benefits of involvement. A future challenge will be to encourage participation in sectors who do not perceive biodiversity to be a business risk and in small-medium sized companies (SMEs). The group will continue to support Natural England in their role in helping businesses contribute to meeting PSA SSSI targets.

6. Progress Reports for each workstream

Education and Public Understanding

Vision

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.

Key Deliverables to 2006:

1. Development of a tool to assist in the development and delivery of targeted programmes of Education and Public Understanding for biodiversity
2. Development of sector Education and Public Understanding plans i.e. water & wetlands, agriculture, woods & forests, coasts & seas, urban
3. Development of major public awareness and participation campaign structure and network

Progress

A brief has been produced for the creation of a tool based upon work previously undertaken by Australian NGOs and the *'Educating for Life'* publication produced by the Council for Environmental Education (CEE). This work was delayed as a result of other priorities such as the Breathing Places campaign and will be progressed through 2007. (Key Deliverable 1).

All work streams include communications objectives in their refreshed work programmes. The group has also developed proposals for a communication strategy for *Working with the grain of nature*. This will be delivered as part of EPU's 2006-2010 work programme. (Key Deliverable 2)

The group has worked in close partnership with the BBC to establish Breathing Places, a 3 year campaign aimed at engaging a million more people in taking action for biodiversity. This project is underway with structures in place for delivery of a series of activities culminating in a major participatory event to be held in 2008 and 2009 (Key Deliverable 3).

The need to encourage better links between the sector workstreams of the England Biodiversity Strategy was acknowledged early on in the group's work programme. Work began on developing education and public understanding plans and examples of such plans were developed for the Water & Wetlands and Coast & Seas workstreams. However, the development of these sectoral plans has been challenging in the absence of an overall strategic communications framework. Work started in 2005 on using communications activities to raise the profile of biodiversity across all workstreams. To this end, work has begun on developing a communication strategy which will review all aspects of the EBS to produce an integrated approach which engages communications and education experts within Government, Agencies, NGOs and elsewhere.

In 2003 the need for a series of focused workshops to improve the engagement of the media sector was identified. Throughout 2004 and 2005 significant progress was made with the development of a major public awareness and participation campaign. The workstream has been able to create a joint working partnership with the BBC developing a new approach to public participation which will come to fruition in a major campaign during 2007 to 2009. In 2005 the workstream has also facilitated closer working between members and partners including further engagement in the annual *'Communicate'* conference.

6. Progress Reports for each workstream

Group representatives have been involved with DfES in developing the Manifesto for Education Outside the Classroom. One of the aims of this is to establish a multi-partner 'movement' to facilitate a range of opportunities for children and young people to learn in the natural environment during lesson time, through clubs and holiday activities.

The group has also worked on establishing the status of existing levels of work in education and communication with a view to co-ordinate effort between Departments, agencies, NGOs and the media. The need for a comprehensive tool to encapsulate best practice in communications, education and public understanding for biodiversity has been identified and plans to develop this tool have been taken forward.

Challenges

It is a continuing challenge to identify new and innovative ways of working within the sector. Breathing Places is a very good first step but it is only one campaign, and further campaigns are needed to engage other audiences and maintain interest in biodiversity once Breathing Places finishes. A continuing challenge is the need to gain greater join-up across the sector in communicating messages about the natural environment. This includes both the activities of other Government Departments, but also across agencies and the voluntary sector. In addition, the group will need to address the issue of join-up and coordination specifically within the environmental education sector (particularly as it relates to the formal and non-formal education worlds).



Not all meaningful education has to take place within the classroom. School field trips can improve a child's learning and allow them to become actively involved with nature (*Forestry Commission*)

6. Progress Reports for each workstream

Longer-term prospects

Although the group will have continuing involvement in delivery of *Breathing Places*, the scale of the campaign requires a much wider constituency (created through the structures and processes being put in place by the campaign team). The next major challenges for the group will be the creation of the supportive tools for the sector and the development of coordinating mechanisms for information exchange, professional development, etc. and the creation of opportunities for higher level communications for *Working with the grain of nature*. The creation of Natural England provides enormous opportunities for a re-think of the Communication, Education, and Public Awareness agenda for biodiversity and the EPU group could play a significant role in assisting the new agency in the fulfilment of its public understanding duty.

7. Lessons learnt

The strategy has been more successful in some areas than others. In some, such as local and regional policy, the strategy has been a major driver for progress. In others, such as agriculture and marine, the drivers have been at the European level and the added value was mainly through the linkages made across the strategy.

In general, the workstream structure has been found to be helpful, although inevitably, further cross-cutting themes emerged during implementation, for which there was no workstream. For one of these – climate change – we have established a new workstream, while for others, such as landscape scale working, we propose to promote a team approach comprising members of the relevant workstreams.

Establishing genuinely cross-cutting programmes proved a difficult challenge. There was also a tendency for the cross-cutting groups to develop their own “stand alone” deliverables, to meet the need for focus in a broad-ranging agenda. We have addressed this by including a specific aim to lead on cross-cutting work for example in the climate change adaptation and economics and funding workstreams.

The work programmes published in the original strategy were found to be unnecessarily detailed and prescriptive. In some cases, the policy landscape changed fast and the key deliverables were either achieved early on in the implementation or became out of date. There was also rather a weak linkage between the activities and objectives of the workstreams and the indicators published in *Measuring progress: baseline assessment*. We have addressed this by making the new work programmes simpler and more streamlined, with objectives linked to indicators where possible. Workstream groups have the flexibility to take forward their work programme to achieve the stated goals, but these remain flexible and responsive to changing circumstances.

The most significant lessons learnt were in the area of communications – between the different workstreams of the strategy, between the strategy and related programmes such as the Strategy for Sustainable Farming and Food, and the use of communication in catalysing behaviour change to support the delivery of sectoral work programmes. In general, there has been insufficient focus to date on communications issues, which are clearly crucial to driving success. Communication issues need to play a far greater role throughout the delivery of the strategy. We are addressing this by preparing a communications strategy for *Working with the grain of nature*, for which the communication deliverables for each workstream form the starting point.

8. Going forward

New work-programmes

The following section contains refreshed work programmes for each of the ten workstreams of the strategy, including the summaries of the relevant UK BAP targets proposed for England. In general it is envisaged that the two processes should work together with strategy workstreams providing the policy input, freeing up action plan steering groups to focus on management, research and survey and, for habitat groups in particular, the delivery of specific habitat restoration and re-creation projects.

A number of common themes emerge from the individual workstream programmes, including climate change, valuing the economic benefits of biodiversity, invasive species and landscape scale approaches. For one of these – climate change, we have established a climate change adaptation workstream with the specific remit to ‘climate-change proof’ the other work programmes, as they develop. The Economics and Funding group will lead cross-cutting work on valuing economic benefits, working with the Education and Public Understanding workstream to articulate the work that has already been done on the benefits of biodiversity. The England Biodiversity Group will work closely with Natural England which will be expected to lead on much of the thinking and delivery on landscape scale approaches, particularly on the important priority of large-scale habitat restoration. Overall, communication issues will play a far greater role throughout the delivery of the strategy in the period from 2006-2010. We are preparing a communications strategy for *Working with the grain of nature*, for which the communication deliverables for each workstream form the starting point.

Agriculture

Proposed UK BAP Targets for England – overview of quantitative targets for 2015

Habitat	Target unit	Maintenance	Achieve condition by 2015	Condition (%) *	Restoration by 2015	Restoration (%) *	Expansion by 2015	Expansion (%) *
Arable margins	Hectares - ha	N/A	tbc	-	-	-	69,378	-
Blanket bog	Hectares - ha	240,000	tbc	-	-	-	-	-
Hedgerows	Kilometres - km	558,150	279,075	50%	-	-	6,400	1%
Limestone pavement	Hectares - ha	2,340	tbc	-	4 sites	-	-	-
Lowland calcareous grassland	Hectares - ha	38,687	32,036	83%	726	2%	8,426	22%
Lowland dry acid grassland	Hectares - ha	20,142	17,295	86%	285	1.4%	276	1.4%
Lowland heathland	Hectares - ha	58,000	47,000	81%	-	-	7,600	13%
Lowland meadows	Hectares - ha	7,282	6,078	83.5%	481	7%	256	3.5%
Purple moor-grass and rush pastures	Hectares - ha	21,544	19,195	89%	128	1%	151	1%
Upland calcareous grassland	Hectares - ha	16,000	tbc	-	-	-	-	-
Upland hay meadows	Hectares - ha	870	830	95.4%	48	5.5%	72	8%
Upland heathland	Hectares - ha	220,000	tbc	-	-	-	-	-

* Percentage values are the proportion that each target represents of the total current habitat area (i.e. the maintenance target)

Agriculture Work Programme 2006-2010

Long Term Vision:

Conservation and enhancement of biodiversity associated with farmed and semi-natural habitats, within the context of viable rural business in which land managers maximise, and are valued for, their contribution to conservation.

Anticipated Outcome by 2010:

Continued improvement in the condition of farmland SSSI's and on course to achieve the farmland birds PSA target, and the farmland HAP and BAP targets.

Indicators used to demonstrate outcomes:

- A1(a): Populations of farmland birds in England
- A1(b): Populations of butterflies on farmland in England
- A2: Condition of farmland SSSIs in England
- A3: Status of farmland BAP priority species and habitats in England
- A4: Trends in plant biodiversity in fields and field margins in England
- A5: Extent and condition of farmland habitat features in England

Narrative outlining key policy issues and flexible framework for direction of workstream:

The main role of the group will be to add value to existing agriculture policy processes by providing expert assessments and feedback on biodiversity needs. The key policy areas will be CAP reform, agri-environment, advice, nutrient management, and changes in agriculture practise such as biofuel and GM-related work. Specifically, we will provide critical appraisal of the Environmental Stewardship evaluations and the Agriculture Change & Environment Observatory research, and Catchment Sensitive Farming Policy, with regards to BAP targets and outcomes, and make recommendations to both EBG and relevant Defra policy areas.

Agriculture Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Environmental Stewardship: Provide a critical appraisal of the CSL evaluation results and other agri-environment performance data with regards to BAP targets and outcomes	Climate Change Adaptation; Water and Wetlands
	2. Critically appraise results from the ACE Observatory and make recommendations to the EBG and ACE on the policy implications for biodiversity of any clear land use change	Climate Change Adaptation; Water and Wetlands
	3. Identify skills and knowledge gaps among farmers and land managers that would enable better delivery of biodiversity outcomes, and make recommendations to the EBG and Defra advice co-ordination unit on future advice policy that will maximise biodiversity outcomes	Education and Public understanding
2010	4. Take overview of agriculture HAP and SAP performance and address overarching agriculture issues beyond the scope of individual agriculture HAP and SAP groups	
	5. Provide critical appraisal of Catchment Sensitive Farming policy with regards to biodiversity outcomes; and, provide recommendations for integrating biodiversity objectives with nutrient management work	Water & Wetlands
Communication deliverable	Provide information, analysis and recommendations to the leaders of relevant policy or process areas in order to maximise delivery of agricultural biodiversity objectives	

Water and wetlands

Proposed UK BAP Targets for England – overview of quantitative targets for 2015

Habitat	Target unit	Maintenance	Achieve condition by 2015	Condition (%) *	Restoration by 2015	Restoration (%) *	Expansion by 2015	Expansion (%) *
Coastal and floodplain grazing marsh	Hectares - ha	170,000	76,500	45%	7,500	4.4%	1,250	1%
Fens	Hectares - ha	8,000	7,200	90%	1,500	19%	-	-
Lowland raised bogs	Hectares - ha	11,200	7,466	67%	1,000	9%	-	-
Wet reedbeds	Hectares - ha	5,200	4,680	90%	-	-	1,900	36.5%
Chalk rivers	Kilometres - km	3,915	2,534	65%	-	-	-	-
Aquifer-fed fluctuating water bodies	Site(s)	5	5	100%	-	-	-	-
Eutrophic standing waters	Site(s)	3,917	24 (tier 2)	-	3	-	-	-
Mesotrophic lakes	Site(s)	644	7 (tier 2)	-	5	-	-	-

* Percentage values are the proportion that each target represents of the total current habitat area (i.e. the maintenance target)

Long Term Vision:

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.

Anticipated Outcome by 2010:

Continued improvements of water quality in rivers, canals and lakes. Major programmes in place to improve the water quality and water quantity /water level risks and impacts affecting water and wetland SSSIs as a result of water company expenditure to tackle abstraction and point source pollution problems, the implementation of water level management plans, and action under the catchment sensitive farming initiatives. Significant progress towards targets for restoration of freshwater BAP habitats and species. A common framework for wetland restoration in the wider countryside. Greater understanding and uptake of catchment scale schemes to deliver multiple benefits for diffuse pollution, flood risk management and biodiversity benefits.

Indicators used to demonstrate outcomes:

- W1: Populations of water and wetland birds in England
- W2: Condition of water and wetland SSSIs in England
- W3: Status of water and wetland BAP priority species and habitats in England
- W4: Trends in plant diversity on river banks and stream sides in England
- W5: Nutrient levels in rivers and lakes in England
- W6: Number of rivers in England with sustainable salmon stocks

Narrative outlining key policy issues and flexible framework for direction of workstream:

The key policy area will be Integrated Catchment Management, delivered through the Water Framework Directive, together with delivery of the PSA target for SSSIs as it relates to water and wetland sites. River basin plans need to be written by 2009. Programmes of measures to help achieve good ecological status need to be agreed. Together this means delivering truly integrated land and water management at a catchment scale. This will tackle the key problem areas of water pollution, abstraction, water level management and non-native species. Given the uncertainties over climate change and increasing pressure from development, there will be close links needed with several other workstreams.

Water and wetlands Work Programme 2006-2010

8. Going forward

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. A Wetland Vision for England. A broadscale map of how wetlands can be restored in a strategic fashion for the benefit people and wildlife.	<ul style="list-style-type: none"> • EPU • Agriculture • Forestry • Local & Regional • Urban • Climate change adaptation
	2. A River Basin Biodiversity Framework. A GIS-based tool that will help statutory bodies, local authorities, NGOs and interest groups map out key sites for protecting and improving BAP interests, particularly in relation to the Water Framework Directive.	<ul style="list-style-type: none"> • Coasts and Seas • Forestry • Towns and Cities • Local and Regional
	3. Landscape-scale approach to catchment management. Building on the "Vision" and "Biodiversity Framework" products, development of a work programme that combines principles from "Catchment-Sensitive Farming" and "Making Space for Water".	<ul style="list-style-type: none"> • Coasts and Seas • Agriculture • Climate change adaptation
	4. Fully costed environmental improvement programme for the water industry as part of the fifth periodic review of water prices (2010-2015).	<ul style="list-style-type: none"> • Agriculture • Economics and Funding
Communication deliverable	<p>Key messages:</p> <ul style="list-style-type: none"> • Integrated land and water management; • Benefits of wetlands (environmental services); • Using ecology as an indicator; • Multiple use benefits. <p>Groups:</p> <ul style="list-style-type: none"> • Water industry; • Farmers/landowners; • Local authorities / planners; • NGOs; • Breathing Places. 	

Woodlands and forestry

Proposed UK BAP Targets for England – overview of quantitative targets for 2015

Habitat	Target unit	Maintenance	Achieve condition by 2015	Condition (%) *	Restoration by 2015	Restoration (%) *	Expansion by 2015	Expansion (%) *
Native woodland - All	Hectares - ha	535,000	375,000	70%	-	-	53,000	10%
Planted ancient woodland sites (PAWS) - restoration	Hectares - ha	88,000	-	-	36,000	41%	-	-
Wood-pasture and parkland	Site(s)	6,000	4,200	70%	400	7%	120	2%

* Percentage values are the proportion that each target represents of the total current habitat area (i.e. the maintenance target)

Woodlands and forestry Work Programme 2006-2010

Long Term Vision:

The biodiversity of woodlands, forests and related open habitats is adequately protected, sustainably managed in a wider landscape context, and is providing a wide range of social, environmental and economic benefits to society

Anticipated Outcome by 2010:

1. Current extent of the ancient woodland maintained and no net loss of native woodland
2. Improved ecological condition in both native and non-native type woodland in line with UK BAP targets
3. Planted ancient woodland sites restored in line with UK BAP targets
4. Extent of the woodland resource increased through targeted habitat creation and restoration in line with UK BAP targets
5. A significant contribution to the restoration and re-creation targets for open ground priority habitats through removal of trees from appropriate sites
6. Woodland, forests, trees and related open habitats making an increasing contribution to functional ecosystems and wider environmental services
7. Woodland, forests, trees and related open habitats making an increasing contribution to people's quality of life

Indicators used to demonstrate outcomes:

- F1(a): Populations of woodland birds in England
- F1(b): Populations of butterflies in woodland in England
- F2: Condition of woodland SSSIs in England
- F3: Status of woodland BAP priority species and habitats in England
- F4: Trends in woodland plant diversity in England
- F5: Area of ancient woodland in England (provisional)
- F6: Public enjoyment of woodland in England
- H1(a): Populations of wild birds in England
- H1(b): Populations of butterflies in England
- H2: Condition of SSSIs in England (relevant open ground habitats only)
- H3: Status of Biodiversity Action Plan (BAP) priority species and habitats in England (relevant open ground habitats only)
- H4: Area of land under an agri-environment scheme in England
- L1: Condition of SSSIs in local authority ownership in England
- L3: Degree of integration of biodiversity objectives into regional programmes and strategies
 - A new indicator is required on landscape scale function which takes account of the area of all semi-natural habitats and nature of the intervening matrix
 - A suite of indicators for the Ancient & Native Woodland Policy are currently under development

On Communication:

- P1: Number of visits to nature reserves in England
- P2: Volunteer time spent in conservation activities
- F6: Public enjoyment of woodland in England

Narrative outlining key policy issues and flexible framework for direction of workstream:

The woodland resource

Woodland cover in England currently stands at around 1.1m hectares, or 8.5% of total land area. Around half of this is plantation (mostly conifer) woodland with the other half made up of ancient and native woodland. Ancient semi-natural woodland, viewed as the most ecologically valuable of all woodland types, extends to around 200,000 hectares. There is a further 140,000 hectares of plantations on ancient woodlands sites (PAWS). As the natural climax vegetation across most of the country, woodlands, forests and trees have been the ecological building blocks of England's landscapes for many millennia. In particular, our ancient and native woodlands are the most biologically rich of all terrestrial habitats.

Policy context

The strategic policy framework guiding delivery on the half of the woodland resource which is ancient and/or native woodland is Keepers of Time: A Statement of Policy for England's Ancient and Native Woodland. Launched in June 2005, it sets out policy priorities and strategic objectives until 2020, many of which have been developed specifically to address declines in woodland biodiversity. A new statement of delivery policy and practice including management principles for restoring non-woodland, or open, habitats on forest land is currently in development. Defra has recently consulted on England Trees Woods and Forests with a view to producing a successor to the England Forestry Strategy in the coming year.

Key threats to woodland biodiversity

Keepers of Time lists six major threats to the biodiversity of ancient and native woodland which the evidence base suggests are key factors causing declines in woodland biodiversity. These six factors also apply to non-native, non-ancient woodlands and are listed below:

- Climate change and fragmentation
- Excessive browsing and grazing by deer and sheep
- Inadequate or inappropriate management
- Invasive and problem species
- Diffuse pollution
- Loss to other land uses

There are open ground habitats that are declining due to the presence of trees or invasion by scrub. Many 20th century plantations in England were established on semi-natural habitats, such as heathland, bog, acid grassland and fen, that are now UKBAP priorities. Where these communities have survived removing the forest is one of the most cost-effective means of expanding the area of these priority habitats. Approximately 4,000 ha of non-woodland SSSIs remain in unfavourable condition due to the presence of such plantations or invasion by scrub. The removal of some scrub and conifer plantations also has the

potential to enhance landscape and heritage values, but on the other hand many local communities have become attached to the trees and regard them as a key component of the local environment. The removal of scrub also represents a loss of young native woodland – trading off one habitat for another – and the implications for woodland expansion targets need to be taken into account. A clear policy is needed to assist managers weighing up such competing demands and values at a site level.

Priority policy issues

The first England Biodiversity Strategy listed 5 priority policy issues:

- Protection of woodland from external threats
- Conservation and enhancement of biodiversity of native woodland
- Conservation of wider woodland biodiversity in the landscape
- Improving the recognition of the sustainable development potential of woodland
- Increasing the role of woodland in 'quality of life'

These have continuing relevance to the delivery of enhanced biodiversity in woodland landscapes and are reflected in the anticipated outcomes listed above. Many priority woodland species are associated with either young, early-successional stages or with 'old growth habitat'. A key policy issue is the need to strike a balance between active management and minimum intervention. Management activity can be very beneficial to early successional species but is in widespread decline due to economic pressures on the forestry sector. Conversely, minimum intervention approaches are sometimes equated with 'neglect' of both the economic and ecological potential of woodlands. In reality, some combination of actively managed sites, minimum intervention sites and new woodland creation will be the best outcome. The challenge lies in ensuring we achieve the right balance between the three.

Flexible framework for direction of workstream

Reversing woodland and related open habitat biodiversity declines will in large part depend on what we achieve in the wider landscape. Action must take place both within and outwith woodlands. By taking opportunities for creating strategically located new native woodlands, restoring PAWS, or reducing the general intensity of surrounding land use, we can better protect and enhance biodiversity within existing woodlands, as well as creating valuable new habitat. Taking a whole landscape approach will increase the resilience of both woodland and open habitat biodiversity to external threats, particularly climate change and diffuse pollution. Removing the plantations that separate extant areas of open habitat will reverse the historic fragmentation and bring the biodiversity associated with them onto a more secure footing.

Woodlands and forestry Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Delivery of the Ancient & Native Woodland Policy through the 2005-07 Action Plan and by publication of a follow-on 2008-10 Action Plan to sustain this delivery	Towns, Cities and Development and/or Local & Regional could assist in translating Planning Policy Statement 9 into practical action Water & Wetlands could assist in quantifying how native woodland provides 'wider environmental services' such as catchment regulation Agriculture could assist in ensuring relevant grant schemes are delivering key priorities
	2. Development and implementation of policy on 'Restoration of Open Habitats from Forestry' through joined up delivery measures and including a restoration strategy for the public forest estate	Agriculture could seek to ensure that agri-environment schemes offer adequate support for open habitat restoration and subsequent management
	3. Embedding a landscape scale approach to enhancing biodiversity into all relevant policies, practices and delivery mechanisms.	Agriculture Water and Wetlands Towns, Cities & Development Climate Change Adaptation By definition, landscape scale approaches to biodiversity conservation includes the whole range of semi-natural habitats and the land-uses between them.
	4. Delivery of best practice woodland management by all public bodies and by signatories to the UK BAP.	Local & Regional workstream as Local Authorities own/manage woodlands
Communication deliverable	<p>Target audience</p> <ul style="list-style-type: none"> the public 'unengaged' agencies other EBS Workstreams local and regional biodiversity initiatives/plans unengaged Government departments <p>Key messages</p> <ul style="list-style-type: none"> the rich diversity and fascinating history of our ancient woods and trees the environmental benefits that can be secured through utilisation of woodland products <p>Key communication outcome:</p> <ul style="list-style-type: none"> recognition from relevant departments, agencies and stakeholders on the potential of woodlands to deliver wider environmental and economic benefits 	Education & Public Understanding

Towns, cities and development

Towns, cities and development Work Programme 2006-2010

Long Term Vision:

Towns and cities where biodiversity is conserved and progressively enhanced as an essential component of urban infrastructure contributing to the quality of the urban environment and urban living and helping sustain thriving communities.

Anticipated Outcome by 2010:

The contribution of biodiversity to sustainable development and 'liveability' agendas is fully recognised in national, regional and local policies and programmes dealing with urban areas and development.

Increased capacity and skills to manage urban open space rich in biodiversity, including ensuring adequate resilience or adaptability to climate change.

The conservation and enhancement of biodiversity is considered throughout the urban environment (including as part of all urban masterplanning, design and construction) not just public and private greenspace.

Appreciation of the functionality of green infrastructure is built into decision-making across all sectors in the urban environment.

Indicators used to demonstrate outcomes:

- T1: Populations of birds in towns and gardens
- T2: Condition of SSSIs in urban areas in England
- T3: Proportion of households undertaking wildlife gardening in England
- T4: Ease of access to local green space and countryside in England
- T5: Local Plans and Unitary Development Plans with biodiversity policies and targets in England

Narrative outlining key policy issues and flexible framework for direction of workstream:

Biodiversity makes an important contribution to the quality of urban living. Towns and cities which are poor in biodiversity are unlikely to be either attractive places to live or environments which promote well being.

There is a tendency for the biodiversity of towns and cities to be considered as 'second class' biodiversity in comparison to that found in the countryside. This makes it vulnerable to development pressures and damage. But as with any other landscape, towns and cities have their own suits of habitats and species which are part of their natural heritage and landscape character. Recognition of priority urban habitats and species will help ensure that the value of biodiversity associated with towns, cities and development is better appreciated.

Biodiversity needs to be fully integrated into urban design and management, from buildings to greenspaces, brownfield land to domestic gardens, as parts of networks of functional and more sustainable 'green infrastructure'. Local Authorities through the services they provide have a central role in urban design and management, and can act alone or in partnership with other public or private sector interests in leading best practice for biodiversity.

Access to a high quality natural environment is something everyone should be able to enjoy as part of their everyday life, and not only contributes to their well being but is important in fostering a sense of enjoyment of contact with nature and interest and concern for wider environmental issues.

Towns, cities and development Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Biodiversity an integral part of policies to improve the quality of people's lives and well-being	Local and Regional Economics and Funding Education and Public Understanding Govt's 'cleaner, safer, greener' agenda and all Government Departments
	2. Agreed targets for 'urban' Priority Species and Habitats in UK BAP	
2010	3. Planning, development and regeneration policies which seek to minimise the impact on biodiversity and enhance it where possible.	Local and Regional Water and wetlands Economics and Funding Business and Biodiversity, DCLG policies and programmes
	4. Development of networks of functional green infrastructure including accessible high quality natural greenspace.	
Communication deliverable	<p>Key message that 'urban' biodiversity is of great value to society. It's on people's doorstep (90% of pop live in Towns and Cities). Huge resource which is not widely appreciated as biodiversity – Links to Breathing Places.</p> <p>Need to communicate the economic value of biodiversity to Regional Development Agencies</p> <p>Possibly a glossy and/or web site on 'Why biodiversity is important in urban areas'. This could be used by developers, ecologists and planners in Ipsas to make the case etc. This should communicate one clear message – could include advice on mitigation?</p> <p>Increase public awareness of the value of wildlife gardening.</p>	Local and Regional Economics and Funding Education and Public Understanding Water and Wetlands DCLG urban green space policy

8. Going forward

Coasts and seas

Proposed UK BAP Targets for England – overview of quantitative targets for 2015

Habitat	Target unit	Maintenance	Achieve condition by 2015	Condition (%) *	Restoration by 2015	Restoration (%) *	Expansion by 2015	Expansion (%) *
Coastal saltmarsh / Mudflat	Hectares - ha	32,500 (SM) 206,900 (intertidal)	tbc	-	-	-	3,240	2%
Coastal sand dunes	Hectares - ha	11,900	tbc	-	210	2%	-	-
Coastal vegetated shingle	Hectares - ha	5,343	tbc	-	2 sites	-	-	-
Maritime cliff and slope	Kilometres - km	1,164	700	60%	-	-	200 ha	-
Saline lagoons	Hectares - ha	1,205	1,145 2010 target	95%	-	-	100	8%

* Percentage values are the proportion that each target represents of the total current habitat area (i.e. the maintenance target)

Coastal and seas Work Programme 2006-2010

Long Term Vision:

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.

Anticipated Outcome by 2010:

An improved framework for managing the UK's marine environment, and balancing economic, social and environmental considerations. This will be largely dependant on progress towards delivering and implementing the policies of a Marine Bill, and in working with other EU Member States on the implementation of the European Marine Thematic Strategy and its implications (e.g. for monitoring, targets and ecosystem objectives).

8. Going forward

Indicators used to demonstrate outcomes:

- M1: Populations of coastal and sea birds in England
- M2: Condition of coastal SSSIs in England
- M3: Status of coastal and marine BAP priority species and habitats in England
- M4: Status of marine biodiversity (to be developed)
- M5: Inputs of hazardous substances to the UK marine environment
- M6: Levels of cetacean by catch in UK waters
- H6: UK fish stocks fished within safe limits

- The report 'Charting Progress – An Integrated Assessment of the State of the UK Seas' reported on these indicators but also a number of gaps in our knowledge, but this and the development of Marine Ecosystem Objectives will assist in the development of further marine indicators
- The European Commission published the Marine Strategy in October 2005, together with a proposal for a Marine Strategy Directive. This is still to be adopted by the Council and the European Parliament. Specific indicators have yet to be developed.
- We will also be exploring the whether the indicators set out by the EU Expert group on ICZM, can be used to measure progress in achieving the desired outcome of a more integrated approach to coastal management.

On communication:

Stakeholder views are fed into policy to achieve Govt's aim of a more sustainable and integrated approach to coastal management.

Narrative outlining key policy issues and flexible framework for direction of workstream:

The key policy aim is to develop a better framework for managing and protecting the human activity in the marine environment. This will be achieved through a number of wider Government objectives including developing a strategy for Integrated Coastal Zone Management, implementing EU legislation such as the Water Framework Directive, simplifying the licensing system for marine developments, developing a system of Marine Spatial Planning, and improved marine biodiversity protection through a new Marine Bill.

This work will also take into account other Coast and Seas policy objectives including protecting marine species and habitats and working with natural processes.

Coastal and seas Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	<p>1. Development of a strategic framework for managing the marine environment, including proposals for improved biodiversity protection, through preparation of a Marine Bill.</p> <p>2. Effective UK participation in the negotiation and implementation of the European Marine Thematic Strategy.</p> <p>3. Preparation of a UK report on ICZM and an England strategy for Integrated Coastal Zone Management (ICZM)</p>	<p>Links to other EBS workstreams including: Education & public understanding; Water & Wetlands; Climate Change adaptation; Economics and funding of biodiversity; and local and regional action.</p> <p>This work also links with all European legislation affecting the marine environment, e.g. the Water Framework Directive; and all marine and coastal policy areas (land use, recreation, nature conservation, energy etc.)</p> <p>Input from across government will be required in taking the Strategy forward</p> <p>Links with all European legislation (e.g. Water Framework Directive) and all marine and coastal policy areas – including land use, recreation, nature conservation, energy etc.</p> <p>Links with a wide range of other EBS workstreams including: Education & public understanding; Water & Wetlands; Climate Change adaptation; Economics and funding of biodiversity; local and regional action; and agriculture.</p> <p>As for 2008</p>
2010	Continuing development of a framework for managing the marine environment through the Marine Bill and implementing the EU Marine Strategy	
Communication deliverable	<p>Key messages</p> <p>a) To communicate our commitment to improving the current framework for managing and protecting our marine resources through a Marine Bill;</p> <p>b) To communicate the benefits of an integrated and sustainable approach to managing the coastal environment.</p>	<p>In working towards delivering the Marine Bill, we will continue to include a wide range of stakeholders including other Government departments, other EBS workstreams (see above) and other stakeholders within Government.</p> <p>We are in contact with a broad range of stakeholders including coastal partnerships, local government and planning authorities and other Government departments (including DCLG)</p> <p>We will also liaise with EPU to establish any appropriate mechanisms which can be used to enhance this process.</p>

Climate change adaptation

Climate change adaptation Work Programme 2006-2010

Long Term Vision:

Landscapes and seas in which species are able to survive or to disperse and colonise new areas, establishing new habitats, in the face of climate change. Policies in all sectors which seek to minimise impacts on biodiversity, to maximise opportunities to accommodate rapid changes in biodiversity, to maintain the supply of ecosystem goods and services, and to minimise emissions of greenhouse gases.

Anticipated Outcome by 2010:

A robust and accessible evidence base to support adaptation to climate change impacts, including an established network for detecting changes in biodiversity. Initial adaptations integrated into all EBS workstreams and processes established to learn from experiences and adjust strategies accordingly. High level of awareness of impacts of climate change and means of adaptation in all relevant sectors, at national, regional and local levels.

Indicators used to demonstrate outcomes:

- C1: Changes in abundance of climate sensitive species at Environmental Change Network sites in England
- C2: Index of the timing of four spring events

Narrative outlining key policy issues and flexible framework for direction of workstream:

Available evidence suggests that we will be subject to at least 50 years of climate change which we cannot prevent. We will therefore have to adapt to its unavoidable impacts. Climate change will not only have direct impacts on biodiversity, but it will also alter the way in which other sectors use, manage and impact on biodiversity (e.g. farmers may decide to grow new crops or water resource managers may be faced with increased demands for water). Furthermore, efforts to mitigate climate change by reducing greenhouse gas emissions (e.g. growing biofuel crops or building wind farms) could create significant new pressures, as well as some new opportunities, for biodiversity. Thus, in seeking to conserve biodiversity in a rapidly changing climate, we need to simultaneously consider how ecosystems will be affected by changing climatic conditions and how other sectoral adaptations may exacerbate or reduce the impacts on biodiversity.

Our scientific knowledge about climate change impacts is developing rapidly but there are still large uncertainties about impacts on biodiversity due to the complexity of the natural and socio-economic systems involved. We can expect significant uncertainties to remain for many years to come. In light of the expected severity of the impacts, we cannot afford to wait for all these uncertainties to be reduced and must seek approaches which are as far as possible robust to these uncertainties.

The workstream has identified three main strands of work up to 2010:

1. Creating a robust and accessible evidence base.
 - We need to establish a monitoring system to enable the detection of climate change impacts on species abundance and distribution, habitat extent and condition, and ecosystem functions. The system will use and develop existing programmes of species recording, habitat inventory and condition assessment, improving the coverage and quality of data, and employ analytical techniques to discriminate climate change effects. There will need to be further emphasis on assessment of ecosystem functions and in particular the carbon balance in semi-natural habitats and soils and effects of ocean acidification. (Deliverable 1)
 - We need to continue to improve our ability to forecast future climate change impacts on biodiversity and ecosystem services. New UKCIP climate change scenarios will be produced in 2008 and models of impacts on biodiversity will need to be updated and improved, including development of models which take better account of other socio-economic drivers of change in different sectors. We need a better understanding of ecosystem resistance and resilience, including the role of protected areas, landscapes and seascapes (Deliverable 3)
 - We need to be able to take stock of emerging evidence from science and develop and update guidance accordingly. We will consider the most effective means of organising such a stocktaking exercise in consultation with a view to initiating an annual/bi-annual science review.

Given that there are likely to be similar evidence needs in the devolved administrations and elsewhere in Europe, we will co-ordinate with relevant DA, UK (BRIG, BRAG, GECC) and EU (EEA, EPBRs, ERA-Net, STAG) bodies wherever appropriate.

2. Integrating adaptations into all EBS workstreams and related sectoral strategies.
 - Adaptation needs to be an ongoing activity, taking account of new knowledge and experience. Workstreams need to take account of developing mitigation and adaptation strategies in other sectors, especially the agriculture, forestry, water and energy sectors, and workstreams should ensure that consequences and opportunities for biodiversity are fully explored. An effective and efficient mechanism for climate change 'proofing', including implementation of an adaptive management framework³⁵, will need to be agreed with the EBG and workstreams. (Deliverable 2).
 - Recommended³⁶ adaptations to climate change include the strengthening and enhancement of protected area networks, reversal of habitat fragmentation, re-creation of large scale natural ecosystems and application of CBD Ecosystem Approach. As part of a structured, learning-from-experience approach, we need to review the successes and failures of these type of initiatives in England and elsewhere and provide further practical guidance for policy and practice. (Deliverable 4)
3. Communicating. See further details below.

³⁵ Any management programme needs to be flexible enough to adjust to ongoing and future change. Adaptive management is a systematic process of continually improving policies and practices by learning from results of previous actions. This means going beyond a static management plan and moving towards a dynamic approach that tests assumptions, monitors results and adapts management actions accordingly. IUCN 'Banking on biodiversity in a time of climate change', 2005.

³⁶ EEAC and IUCN.

Climate change adaptation Work Programme 2006-2010

8. Going forward

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Monitoring systems in place for early detection of climate change impacts on biodiversity, including a site-based monitoring network and analysis of changes in species distribution and abundance.	Links with agriculture, woodland, water, coastal and marine workstreams required to develop coherent monitoring systems e.g. BAP reporting, SSSI condition assessment, agri-environment schemes, air pollution and Water Framework Directive. Links with surveillance initiatives e.g. Countryside Survey, Environmental Change Network, National Biodiversity Network, UK Phenology Network.
	2. Deliverables in all workstreams climate change 'proofed' using best available scientific knowledge and expertise.	Requires engagement with other workstreams especially agriculture, woodland, water, coastal and marine, towns and cities, local and regional. Links with sectoral climate change adaptation strategies. Biodiversity needs to be integrated within such strategies. Links with processes for review of UK BAP targets and action plans.
	3. Update of forecasts of impacts on biodiversity, including ecosystem goods and services, using new UKCIP climate change scenarios due for publication in 2008.	Depends on work planned within UK Climate Impacts Programme (UKCIP). Requires continuing investment in underpinning development of modelling capability. Links with NERC and EU funded research.
	4. Review experience and publish practical guidance on use of area-based and ecosystem approaches to land/sea management, including protected areas and ecological networks.	Depends on engagement with workstreams especially agriculture, woodland, water, coastal and marine, towns and cities, local and regional to identify suitable case studies and review draft guidance. Links with BRIG Climate Change Sub Group. Links with policy development on CAP and agri-environment schemes, diffuse pollution, implementation of Water Framework Directive, regional and local planning, Marine Bill.
Communication deliverable	<p>The group needs to communicate with all workstreams and related stakeholders at national, regional and local levels, especially conservation managers, farmers, planners and the public who are concerned and actively involved in conservation. The group also needs to communicate with scientists and groups engaged in developing adaptation strategies in other countries.</p> <p><i>Key messages to communicate:</i></p> <ul style="list-style-type: none"> • climate change is happening and will accelerate despite current mitigation efforts; • climate change is a new and rapidly growing threat to biodiversity and poses an immediate and additional challenge to the target of halting biodiversity loss; • we need to revise our approaches to reflect and respond to increasingly dynamic species distributions and ecosystems, allowing for future revision of targets should evidence show that they have become unattainable due to climate change; • we need to start to adapt our policies and activities now in order to minimise the impacts on biodiversity; • there are many things we can do now on the basis of existing knowledge, but we need to continue to improve the evidence base so that we can be more effective; • our understanding of impacts is still developing and we regularly need to take stock of new knowledge and be prepared to review and amend our approaches accordingly; • we need to learn to cope with an uncertain future and act with foresight and vision. 	

Climate change adaptation Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
Communication deliverable	<p>Planned activities:</p> <ul style="list-style-type: none"> • creation of a knowledge bank containing (or providing links to) resources for conservation managers and policy advisers, to provide easy access to results of research and systematic reviews, to provide best practice guidance and knowledge exchange amongst practitioners; • programme of workshops with sectors and regions to discuss adaptation strategies; engagement with sectoral and regional impact assessments, mitigation and adaptation strategies to ensure that biodiversity issues are fully considered and integrated; • use existing sectoral communication tools to reach planners and practitioners in relevant sectors; • create media opportunities (of which Breathing Places is one possibility) to promote public debate on choices for future conservation objectives in the face of climate change. 	

8. Going forward

Local and regional biodiversity

Local and regional biodiversity Work Programme 2006-2010

Long Term Vision:

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.

Anticipated Outcome by 2010:

Biodiversity is integrated into local and regional policies, processes and programmes, in areas such as Local Area Agreements, Performance Assessment, Community Strategies. The Biodiversity Duty (within the NERC Act) has acted as a stimulus to encourage further integration of biodiversity across local and regional government and there is evidence of a general increase in profile of biodiversity and in the delivery of biodiversity gains through the planning process. Regions have access to regional landscape biodiversity data to assist them in making decisions in development and planning.

Biodiversity partnerships at the local and regional level are secure and fully funded. Appropriate guidance is available to Local and Regional Biodiversity Partnerships. Local and Regional authorities have access to sources of advice, expertise and datasets necessary for them to integrated biodiversity into policies, processes and programmes. Frameworks such as the Biodiversity Action Reporting System and Local Records Centres are being fully utilised and supported at both local and regional level and provide clear local and regional monitoring data.

Indicators used to demonstrate outcomes:

- L1: Condition of SSSIs in local authority ownership in England
- L2: Community strategies with biodiversity policies, objectives and targets for action
- L3: Degree of intergration of biodiversity objectives into regional programmes and strategies
- H7: Delivery of local biodiversity targets in England

Narrative outlining key policy issues and flexible framework for direction of workstream:

The Local and Regional Workstream have identified two key areas to focus on to ensure delivery of biodiversity outcomes at the local and regional level: the provision of sustainable resources (including resources such as relevant guidance and data) for local and regional co-ordination and delivery of biodiversity and the need to further integrate biodiversity into local and regional policy, programmes and processes.

Capacity building at the local and regional level is essential to the delivery of other objectives such as integrating biodiversity into planning, policies and government, as well as enabling actual delivery of actions to conserve biodiversity on the ground. It is challenging to obtain funding for services such as co-ordination and a key priority for is to ensure that the current funding arrangement for supporting local and regional co-ordination is maintained and built upon. Robust data sets at local and regional levels are necessary to support the integration of biodiversity indicators into key policies such as Regional Economic Strategies, Regional Spatial Strategies, Local Development Frameworks etc. A clearer, more consistent set of indicators would facilitate this integration.

As part of consultations surrounding the Local Government White Paper, DCLG is exploring a number of key issues on the future of local government particularly in the areas of leadership, neighbourhoods and a new performance framework. Local and regional priorities are increasingly being determined at the local and regional level and the advent of initiatives such as Local Area Agreements are indicative of this trend. The Workstream will have to take account of this evolving agenda and ensure that biodiversity is integrated within it. This can pose a challenge when environment is often seen as an option or cross-cutting theme rather than a priority in itself. As a result, it is important that the links between biodiversity and other 'priority' agendas such as health, education and economics are maximised. The biodiversity duty should also be used to drive integration of biodiversity across local and regional government.

8. Going forward

Local and regional biodiversity Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	<p>Sustainable funding for Local and Regional Biodiversity Partnerships and Co-ordination secured</p> <p>Adoption of appropriate biodiversity indicators in local and regional strategies, policies, plans and programmes secured. For example, a biodiversity indicator is included in future performance assessment frameworks of local authorities</p>	<p>Economics and Funding</p> <p>Towns, Cities and Development</p>
2010	<p>Landscape-scale partnerships established, based on natural areas where appropriate, to achieve integration of biodiversity objectives with wider environmental, social and economic goals</p> <p>Relevant data sets are accessible and readily utilised by local and regional decision-makers to inform action on biodiversity. The structures to support delivery of good quality data are in place and sustainable.</p>	<p>Towns, Cities and Development Economics and Funding Business</p> <p>Towns, Cities and Development</p>
Communication deliverable	<p>Guidance on biodiversity duty produced, disseminated and being used by local and regional public bodies to meet their obligations by 2007.</p> <p>Local and regional government and partnerships are fully engaged with the Breathing Places campaign.</p>	<p>Towns, Cities and Development Education and Public Understanding Education and Public Understanding</p>

Economics and funding

Economics and funding Work Programme 2006-2010

Long Term Vision:

A holistic view of the implications for biodiversity of our decisions, taking account of the full economic costs and benefits to the economy, the environment and society as a whole, including future generations. Identifying and highlighting issues on both the scale of funding and allocation processes in order to ensure that our biodiversity objectives can be met.

Anticipated Outcome by 2010:

A full understanding of the costs of delivering the England Biodiversity Strategy, and the sources of funding available to do this; an understanding by decision makers on the merits of using the market to help achieve biodiversity delivery, and the issues involved in doing this. A greater understanding of the scope of the benefits associated with biodiversity conservation, and their associated economic value.

Indicators used to demonstrate outcomes:

E1: Expenditure on biodiversity in the UK

Narrative outlining key policy issues and flexible framework for direction of workstream:

We aim to refine our understanding of how biodiversity is valued by people so that these values can be explicitly incorporated into public sector decisions and applied to economic instruments influencing the operation of the market. We need to ensure that the implications of the work on costs and funding associated with the BAP Review process is fully taken into account in future government spending decisions particularly in relation to CSR 2007.

We would expect in the coming years to have a clearer picture of the extent to which biodiversity objectives should be achieved through specifically targeted programmes as distinct from a more biodiversity-orientated application of other main programmes. We also aim to refine our understanding of how biodiversity is valued by people so that these values can be explicitly incorporated into public sector decisions and applied to economic instruments influencing the operation of the market.

8. Going forward

In the broader context, we need to attempt to ensure that:

- Biodiversity is strategically placed in the England regional development agenda, and provide evidence that conserving biodiversity has positive economic and social benefits for regions;
- The costs of delivering the biodiversity targets articulated in the strategy are understood, and the funding to achieve these targets are considered;
- The economic evidence base is taken into account, both within workstreams and across the strategy;
- Continue to incorporate biodiversity concerns in Government guidance on project and policy appraisal;
- The economic importance of ecosystem services are acknowledged and, where possible, stated in monetary terms;
- The importance of markets in helping to deliver the aims of the strategy are fully explored;.

The importance of biodiversity in a world of climate change - and how best to conserve it within that context - is understood and communicated, including the implications for the costing and funding of delivering the aims of the strategy.

Economics and funding Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Funding: Prepare funding map and gap analysis, update funding paper. Compile users guide to accessing funding, Analyse cost effectiveness of funding	Cuts across many policy areas. Group will be looking for help and guidance from those groups involved in funding streams such as agri-environment and woodland grant schemes, as well as specific government departments.
	2. Develop methodology for assessing economic benefits of conservation projects	Will be of particular interest to the Local and Regional workstream.
	3. Ensure that the economic evidence base is taken into account, both within workstreams and across the strategy.	Discuss with other workstreams a review process for ensuring that the economics evidence base is taken into consideration and highlighted, both within their individual work areas, and with cross cutting issues.
	4. Ecosystem services: Building on the recent research by EN on England's ecosystem services, research and provide evidence on the value of ecosystem	EN/RSPB/CSERGE work on 'valuing wild nature' Link with the major work programme currently underway in this area by CBD/JNCC. Input on ecosystem services from other groups including the Coast and Seas, Woodlands and Forestry, Agriculture, and Water workstreams.
	5. Market Incentives <ul style="list-style-type: none"> Focus on one instrument e.g. biodiversity offsets. Research the feasibility, and put forward the case, for making use of biodiversity offsets in Government policy 	Will fit in more broadly with work on the use of economic instruments for environmental policy. There are also potentially large links with on-going reforms to the planning system, i.e. Barker review, possible introduction of a planning gain supplement (tax on land capital gains) and Section 106 agreements. Input from the Towns Cities and Development, Business and Biodiversity, Woodlands and Forestry, Agriculture, and Water workstreams
2010	6. Market creation ³⁷ : Identifying, designing and operating markets in biodiversity	In attempting to make biodiversity compatible with economic growth, the group will explore the circumstances and manner in which incentive measures and valuation techniques can be used to build markets. This process is likely to include many of the issues expected to be confronted in the proposed work on economic instruments and subsidies, as well as make use of previous work by the group on valuation. This work should be of interest to many of the other workstreams, including the Business and Biodiversity and Water and Wetlands Workstreams.

³⁷ Identify examples of successful markets that are consistent with biodiversity conservation and sustainable use, an evaluation of the underpinnings of those markets to better understand and explain the interplay between the instruments and policy contexts that both create markets and make them successful. Provide guidance regarding the context in which markets work best; that is, which types of goods and services are most amenable to market creation and what are the institutional characteristics that build successful markets. The output will aim to provide a practical tool for policy-makers in their quest to harness markets for the conservation and sustainable use of biodiversity.

8. Going forward

Communication deliverable	Key Messages	Target Audience	Method of Communications
	Guidance/ best practice on market creation and/or instrument design	All relevant decision makers	Presentation to EBG group, workshop with relevant actors which would include presentation of case studies and exploration of possible markets with specific groups (e.g wetlands)
	Review of evidence of the impacts of economic instruments designed to achieve biodiversity goals	Central Government	Explore possibilities of communicating via bilateral meetings with relevant Departments, and/or having a champion for relevant departments. Tie in with work being done in this area by other departments
	Key message that loss of biodiversity has cost to society, and this is external to markets, so not appreciated. Need to get this into publicly-understood terms	Communicate to all relevant decision makers.	Input from other groups on how best to tailor the groups work on valuation for their particular audiences
	Methodology for assessing economic benefits of conservation Value of ecosystem services	Decision makers at the local level as well as those in central government. Decision makers at the local level as well as those in central government.	Hold a seminar/workshop for relevant decision makers Hold a seminar/workshop for relevant decision makers
	Funding	All key stakeholders including: Funding paper / mapping and gap analysis – need to communicate messages to key funding sources and those influencing them: namely Government (Defra / Treasury), Lottery; and perhaps other work streams in terms of obstacles / deliverability of plans Funding sources info: audience are those bodies involved in BAP / EBS delivery	Presentation of funding analysis and cost effectiveness study to EBG and relevant parts of Government, including treasury. Discussion with CPU on best format and method to launch user guide.

Business & biodiversity

Business & biodiversity Work Programme 2006-2010

Long Term Vision:

Business automatically engaging in the management of, and reporting on, biodiversity as an integral part of its operations and processes.

Anticipated Outcome by 2010:

Businesses, irrespective of size, making a positive contribution to biodiversity. Companies and the public more aware of the impact of business on biodiversity as a result of active business involvement with the Breathing Places campaign. 95% of SSSIs in business ownership in favourable or recovering condition. Business across 9 (or more) sectors equipped with the tools to manage biodiversity positively, in areas such as supply chain and investment decisions; land and property management and integrating biodiversity needs into their operations and planning.

Indicators used to demonstrate outcomes:

- B1: Condition of SSSIs owned or managed by companies in England (Indirect relationship between this indicator and Strategy Implementation Group actions)
- B2: Company participation in the Environment Index
- B3: Company contribution to Local Biodiversity Partnerships in England
- H8: Public attitudes to biodiversity

Narrative outlining key policy issues and flexible framework for direction of workstream:

There remains a need for business to become more involved in the management of biodiversity. The most effective mechanism is through the 'business case for biodiversity.' Key drivers are public image, and recognition at a senior level within business that biodiversity has economic and social value. Business involvement in Breathing Places is, therefore, a major opportunity to increase biodiversity awareness across the sectors and will be a major focus for the group over the next 2 to 3 years. There is a continuing need to help the business sectors understand and manage their impact on biodiversity. With this in mind the group believes – following their assessment of the tools currently available – that further work is needed at sector level to plug the gaps; refine existing guidance and increase/improve certification, accreditation and award schemes. Similarly, further work is required to increase the level of biodiversity coverage in environmental reporting. The nature of this work may need to change in response to changes in the policy climate. As to future direction of the group, more work needs to be done on informing and engaging with small and medium sized enterprises (SMEs) on managing biodiversity positively.

Business & biodiversity Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. Significant business involvement with Breathing Places campaign	<ul style="list-style-type: none"> Education & Public Understanding
	2. Nine business sectors fully equipped with tools to enable them to manage biodiversity positively	<ul style="list-style-type: none"> Education & Public Understanding Economics & Funding Defra's International Biodiversity (CBD) team
	3. 95% of SSSIs in business ownership in favourable or recovering condition	<ul style="list-style-type: none"> Agriculture Water & Wetlands EN/Natural England SSSI PSA team Defra's Conservation and Uplands and Water Quality Divisions
Communication deliverable	4. Raised awareness of biodiversity within business through improved environmental reporting & benchmarking	<ul style="list-style-type: none"> Education and Public Understanding Economics and Funding Defra's Environment Business & Consumers Division
	5. Significant business involvement with Breathing Places campaign.	Education & Public Understanding

8. Going forward

Education and public understanding

Education and public understanding Work Programme 2006-2010

Long Term Vision:

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.

Anticipated Outcome by 2010:

Awareness and understanding of highly biodiverse greenspace as a key factor in our quality of life has risen in the population as a whole to record levels (50% of respondents aware of biodiversity and concern for loss increased to 75%). 1 million new people engaged in positive actions to enhance and protect biodiversity over existing baseline of circa 5 million. Communications, Education, Participation and Action for Biodiversity activities within the sector better coordinated and integrated with clear national programme brands acting as rallying points for regional and local action; dynamic tools in place to support this coordination and integration.

The importance of robust and resilient ecosystems (including the services provided by them and the natural communities that comprise them) embedded into the formal education system as part of a programme of learning for sustainable development.

Indicators used to demonstrate outcomes:

- P1: Number of visits to nature reserves in England
- P2: Volunteer time spent in biodiversity conservation and citizen science activity
- P3: Membership of biodiversity organisations in England
- H8: Public attitudes to biodiversity
- T3: Proportion of households undertaking wildlife gardening in England
- F6: Public enjoyment of woodland in England

Narrative outlining key policy issues and flexible framework for direction of workflow:

The EPU is has identified a range of areas for its detailed work programme for 2006-2010 which build upon the existing key deliverables (input to the Breathing Places campaign 2006-8, the development of an initial set of tools for the enhancement of delivery by the sector, support for other workflows on their communications opportunities).

There is a need to join up activity on communications across the sector both within government and across partners such as our agencies and voluntary organisations. It is vital that we send clear, consistent and targeted messages to enable greater engagement with biodiversity in all areas.

The BBC Breathing Places campaign provides an enormous opportunity for the sector to attract and engage a large number of new people in action for biodiversity; the greatest challenge to the sector in the period post 2007/8 will be the level to which we continue to engage this new population. To do so will require effective and exciting local initiatives which the EPU can be instrumental in encouraging, making closer ties to the growing greenspace, healthy living and sustainable communities agendas. The key to success will be funding and links to the new lottery-funded streams will be of paramount importance in driving this forward. Effective mechanisms for the exchange of ideas, innovation and research/monitoring will also be vital in achieving these.

The role of the group will continue to work on driving forward biodiversity related issues within the formal education sector. EPU will work with key partners including the Department for Education & Skills on ensuring that the principles of the EBS are embedded in the policies for out-of-classroom learning, the role of field work and those related to the broader education for sustainable development.

Education and public understanding Work Programme 2006-2010

Key Deliverables to achieve anticipated outcome		Dependencies with other workstreams/linkages with other policy areas
2008	1. 1 million new people engaged in action for biodiversity through the Breathing Places campaign	Towns, Cities and Development, Business, Local and Regional, Economics and Funding and other SIGS as appropriate
	2. Effective supportive network for CEPA for biodiversity within sector established and serviced with key products and outputs identified	All
2010	3. Follow-up campaign/ programme that builds upon <i>Breathing Places</i> formulated and underway (2009/10). Initial 1 million (2008 target) continue to be engaged.	Towns, Cities and Development, Business, Local & Regional, Economics and Funding and other SIGS as appropriate.
	4. Coordination of key events, campaigns and programmes in place to support above deliverable	Towns, Cities and Development, Business, Local & Regional, Economics and Funding and other SIGS as appropriate
Communication deliverable	<p>Integrated communications strategy completed and being implemented across EBS Communications at heart of EBS – effective communication systems in place across whole EBS</p> <p>Key target audiences for deliverables:</p> <ul style="list-style-type: none"> • People at home, workplace and at leisure School-aged children and students (+parents, teachers) 	

Membership of the England Biodiversity Group

Workstream leaders (listed at Section 3)

The National Trust

Royal Society for the Protection of Birds

Department for Environment, Food and Rural Affairs

Natural England

British Trust for Conservation Volunteers

Ministry of Defence Estates

Association of Local Government Ecologists

National Farmers' Union

The Wildlife Trusts

Country Land and Business Association

Forestry Commission

Local Government Association

Environment Agency

Wildlife and Countryside Link

Terms of Reference of the England Biodiversity Group

The England Biodiversity Group's aim is to promote the conservation and enhancement of biodiversity in England within the framework set by the UK Biodiversity Action Plan and with the full co-operation of partners at the national, regional and local levels.

In particular, the England Group will:

- Develop and lead delivery of a Biodiversity Strategy for England as part of the UK Biodiversity Action Plan;
- Identify resource requirements for implementation and assist in securing funds for the England Biodiversity Strategy;
- Be the focal point for biodiversity partnership in England; provide a conduit for information to and from the UK, national, regional and local levels; and
- Seek to promote public understanding and awareness of Biodiversity;

The England Group will deliver its remit by:

- Inviting membership from a wide range of partners and sectoral interests in Biodiversity;
- Establishing a programme of work to take forward the England Biodiversity Strategy and to address cross cutting issues between workstreams;
- Encouraging the adoption by all its members of common principles towards the operation of their policies and programmes as they affect biodiversity;
- Working with other UK country groups to create and introduce a framework for monitoring and reporting and reporting of Biodiversity activity, which encompasses local and national information, to form coherent UK and national picture; and
- Developing and overseeing delivery of a strategic programme of actions to ensure biodiversity is fully integrated as part of sustainable Development in all its aspects – economic, environmental and social.

The England Group will establish and maintain strong links with the UK Biodiversity Partnership. It will also develop links to regional and local biodiversity initiatives and maintain close working relationships with the Country Groups in Northern Ireland, Scotland and Wales.

The Group will, as necessary, set up sub-groups and/or workstreams to pursue specific aspects of its remit.

Terms of Reference for England Biodiversity Strategy Work Groups

Ten groups were convened during and after the development of the England Biodiversity Strategy to drive forward its delivery. Some were focused on sectoral themes, and others on cross-cutting issues. The groups are focused on agriculture, water and wetlands, woodland and forestry, towns, cities and development, coasts and seas, climate change, local and regional biodiversity, economics and funding, business and education and public understanding. The Terms of Reference below are designed to provide an over-arching framework for the groups, whilst allowing sufficient flexibility for groups to define their own, more specific Terms of Reference.

Group Structure and working methods

Membership

- Chairs of each group will be members of the England Biodiversity ex officio and will report to the EBG. The EBG will review the groups as necessary as part of its consideration of the strategy's progress;
- Membership of each group should be drawn from the broad partnership in England – statutory, voluntary and private sectors – and should work on the basis of consensus.

Frequency of meeting

- Groups should decide the frequency of meetings, but should make maximum use of smaller working groups and teams to take ideas and projects forward.

Secretariat Support

- Secretariat support will be provided by Defra if necessary.

Finance

- Members of the groups are normally expected to pay their own expenses. However, the BPU will consider reimbursing the expenses of voluntary organisations where their participation in the work of the groups would otherwise be difficult or impossible;
- The groups will not have their own identified expenditure programmes. They may however set up collaborative projects between partners. Defra will participate in such projects to the extent possible and appropriate from relevant programmes.

Relationship with other Groups

- Communication between groups will be facilitated through the Biodiversity Policy Unit and by means of an informal Chairs' network that may meet from time to time.

Terms of Reference and Expectations

Strategy Implementation

- implement a rolling work programme for the sector/theme with a three year time horizon, refreshed as appropriate;
- To identify (with timescales) and prioritise actions that group members can carry out directly to make progress in the sector/theme. This may be through a detailed work programme linked to the general sectoral/thematic work programme;
- To identify risks to progress in the sector/theme and report to the EBG and/or High Level Delivery Group.

Strategic Direction

- To maintain an overview of the sector/theme;
- To “scan the horizon” for potentially important issues in the sector/theme that may arise in the future to ensure that biodiversity is properly embedded in relevant policies.

Linking across EBS and UKBAP

- To identify synergies and/or interdependencies that exist with the work of other groups and work with them to highlight/resolve obstacles;
- To work with relevant Species and Habitat Action Plan steering groups as appropriate.

Monitoring and Reporting

- To monitor and report on progress in the sector/theme to EBG every quarter;
- To develop appropriate indicators for the sector/theme, and commission the collection of the necessary data to monitor progress;
- To deliver an annual written report to the EBG every October as part of its annual stocktake.

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