

# Conserving Biodiversity – The UK Approach

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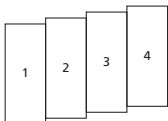


Photo 1 – Dwarf Heath Scrub © Lorne Gill/SNH

Photo 2 – Pasque Flower © Allan Drevitt/Natural England

Photo 3 – Atlantic Salmon parr © Mike Hammett/Natural England

Photo 4 – Clean up at Brockburn, Glasgow © Graham Burns/SNH



## Conserving Biodiversity – the UK approach

### Foreword

Our approach to conserving biodiversity in the UK depends on partnership – involving statutory, voluntary, academic and business sectors, nationally and locally – to deliver more biodiversity, for its own intrinsic value, for the vital life-support services it provides, and because it enriches people's lives. In 1994, the UK became the first country to produce a national biodiversity action plan, following the Convention on Biological Diversity signed in Rio de Janeiro in 1992.

The UK Biodiversity Action Plan is a robust document that has stood the test of time and has driven many conservation successes. Since then many new top drivers for conservation action have been recognised including the need to take action to mitigate the impacts of climate change, the EU Gothenburg agreement in 2001 to halt the loss of biodiversity by 2010 and the findings of the Millennium Ecosystem Assessment (2005). This assessment has raised our awareness of the relationship between ecosystems and human well being and highlighted the need to take action to reverse ecosystem degradation by addressing the key drivers and valuing ecosystem services. Devolution from 1998 onwards has led to the emergence of country strategies for biodiversity and environment in each of the four countries of the UK underlining the importance of our ability to set our own priorities and find our own answers.

In this context, it is more important than ever that we work together to meet shared challenges and achieve our common goals. This framework document sets out what these are, and is a demonstration that we are all – the UK Government, the devolved administrations and the wider partnership – committed to meet them.



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# 1. Introduction to the strategic framework

This statement has been prepared by the UK Biodiversity Standing Committee<sup>1</sup> on behalf of the UK Biodiversity Partnership. Its purpose is to set out the vision and approach to conserving biodiversity within the UK's devolved framework for anyone with a policy interest in biodiversity conservation.

In different parts of the UK, our ability to set our own priorities and find our own answers is important, and a key part of achieving sustainability, but the challenges are shared and we have common goals. This document sets out what these are, and is a demonstration that we are all committed to meet them. It has been agreed by the administrations in Scotland, Wales and Northern Ireland and by the UK government.

The framework complements *One future – different paths*, the UK's framework for sustainable development, which recognises the importance of living within environmental limits in order to conserve biodiversity. It sets out an approach to biodiversity conservation that is designed not only to meet the commitment to halt the loss of biodiversity by 2010, but to guide action well into the second decade of the 21st century at a time when the challenges faced by the natural environment are great.

It comprises

- A shared purpose in tackling the loss and restoration of biodiversity
- The guiding principles that we will follow to achieve it
- Our priorities for action in the UK and internationally
- Indicators to monitor the key issues on a UK basis

## 1.1 Delivering the framework

Our framework for conserving biodiversity within the UK nests within an international framework including commitments under the Convention for Biological Diversity and European Union. The UK framework is, in turn, supported by separate strategies for each administration, and delivery programmes for the UK's international policy and legislative commitments. These include further priorities and are supported by additional measures and indicators, reflecting our different responsibilities, needs and views.

UK strategic framework			
<i>Working with the grain of nature: a biodiversity strategy for England</i>	<i>Scotland's biodiversity: It's in your hands</i>	<i>Environment strategy for Wales</i>	<i>Northern Ireland biodiversity strategy</i>

Biodiversity is not limited by national or international political boundaries: what we do in one country can affect biodiversity in another and expertise and knowledge about biodiversity is often relevant to more than one country. It is important that we work together where this will most benefit the natural environment. This framework sets out that collaborative work, carried out by the members of the UK Biodiversity Partnership. A summary of the main responsibilities at UK and country levels is provided at Section 6.

<sup>1</sup> Membership at Annex

## 1.2 The Ecosystem Approach

A key underlying principle for the conservation of biodiversity is the Ecosystem Approach, defined by the Convention on Biological Diversity as a strategy for the integrated management of land, air, water and living resources that promotes conservation and sustainable use in an equitable way, and which recognises that people with their cultural and varied social needs, are an integral part of ecosystems<sup>2</sup>. The CBD sets out some principles for this type of approach (see below). Climate change, in particular, and other environmental changes, underline the need for a long-term, ecosystem-based approach. Not only will habitats and species be affected directly by climate change and sea level rise but, probably as significant, they will also be affected by policy and behavioural shifts in other sectors such as agriculture, water, transport and energy. This is a long term agenda, requiring a more sophisticated understanding of the value of ecosystem services and the relationship between economic and environmental performance, as shown in the Millennium Ecosystem Assessment.

### Box 1 – The Principles of the Ecosystem Approach

***Adopted by The Conference Of The Parties to the Convention On Biological Diversity at its Fifth Meeting, Nairobi, 15-26 May 2000. Decision V/6, Annex 1. CBD COP-5 Decision 6 UNEP/CBD/COP/5/23***

1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
4. Recognising potential gains from management; there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem-management programme should:
  - a. Reduce those market distortions that adversely affect biological diversity;
  - b. Align incentives to promote biodiversity conservation and sustainable use;
  - c. Internalise costs and benefits in the given ecosystem to the extent feasible.
5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the Ecosystem Approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The Ecosystem Approach should be undertaken at the appropriate spatial and temporal scales.
8. Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The Ecosystem Approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
11. The Ecosystem Approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
12. The Ecosystem Approach should involve all relevant sectors of society and scientific disciplines.

<sup>2</sup> <http://biodiv.org/decisions/default.asp?lg=0&m=cop-05&d=06>

## 2. A common purpose

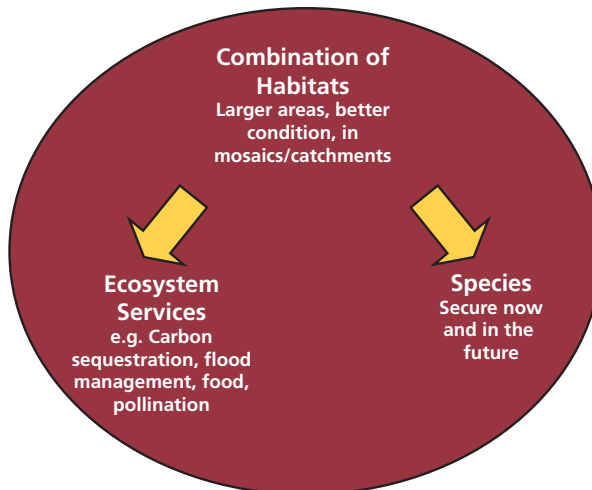
*“Our vision is that in our countryside, towns and seas, living things and their habitats are part of healthy, functioning ecosystems; we value our natural environment, a concern for biodiversity is embedded in policies and decisions, and more people enjoy, understand and act to improve the natural world about them.”*

This has been adopted by the UK government and the devolved administrations, to express a shared vision for biodiversity conservation. It builds on the framework for sustainable development and, importantly, is shared by a wide range of other organisations, whose involvement and activity are crucial. Central to this vision is recognition of the interconnections between living species (including people), their particular habitats, the services that they provide for us and their dependence on our guardianship. Achievement of this vision will require a more holistic approach which recognises these interdependencies and uses a variety of current and emerging schemes and policy instruments.

The UK Biodiversity Action Plan (UK BAP) was published in 1994 as part of the UK response to the Convention on Biological Diversity signed at Rio in 1992. The UK BAP drew together existing instruments and programmes for nature conservation throughout the UK, set out a series of activities for a 20 year period, and recognised the need for specific biological targets and plans for the recovery of species and habitats to help drive forward their conservation. This approach has achieved many conservation successes<sup>3</sup>, and continues to provide a focus for action by government and civil society.

The Millennium Ecosystem Assessment (MA)<sup>4</sup> highlights the relationship between ecosystems and human well-being and the need to take action to reverse ecosystem degradation by addressing the key drivers and valuing ecosystem services. How can we reconcile identifying a list of priority species with the wider agenda of maintaining ecosystem services? The UK Biodiversity Partnership believes that the answer to this lies largely in maintaining, creating and restoring functional combinations of habitats. Healthy habitats in mosaics or catchment units will deliver both ecosystem services such as soil protection, flood attenuation and carbon sequestration, and also homes for priority species. Restoration of ecosystem services also contributes to the reversal of habitat fragmentation, and reduces the vulnerability of isolated habitats and species populations to catastrophic events such as fire or disease.

This is illustrated in the graphic below.



<sup>3</sup> [www.ukbap.org.uk/library/Reporting2005/UKBAPReport05.pdf](http://www.ukbap.org.uk/library/Reporting2005/UKBAPReport05.pdf)

<sup>4</sup> Millennium Ecosystem Assessment: *Biodiversity Synthesis*, Island Press, 2005



### 3. Guiding principles

As well as a common purpose, the UK Biodiversity Partnership has agreed guiding principles that form a core to the strategies and workstreams that underpin our work towards this:

- the threats to biodiversity are acute, reflected in the range of Multilateral Environmental Agreements (MEAs) supported by the UK.
- there are sound reasons why we have a duty to conserve biodiversity (see Box 2), which have a strong public resonance.
- the Ecosystem Approach, an integrated approach to the management of land, water, air and living resources that promotes conservation and sustainable use in an equitable way, and recognises that people are an integral part of ecosystems<sup>5</sup> (See Box 1).
- we have a shared understanding of the elements that need to be integrated if this approach is to work. These are our priorities for action.
- we will be most effective in delivering these strategies if we maintain a strong partnership of statutory, voluntary, academic and business sectors, nationally and locally.

#### Box 2 – Why conserve biodiversity?

The arguments for conserving biodiversity are compelling and can be summarised as<sup>6</sup>:

##### **Because our survival depends upon it (life-support services)**

Living things, the rocks and soils, water and air interact in a myriad of complex and inter-related ways to provide a range of conditions that favour life on Earth. Removing components from this web-of-life is akin to taking out the rivets from a flying aircraft – it should cause us to worry! Natural species extinction happens and new species also evolve over time. However, human activities have caused extinction rates to increase to 1,000 times the natural level with 12% of birds, 25% of mammals and 32% of amphibians being threatened with extinction over the next century. If the ecological systems that support life on Earth collapse or radically change, our very existence is threatened. Soil biodiversity alone influences a huge range of processes and functions vital to ecosystem services, yet little is known about its response to environmental pressures.

##### **Because our economy and lifestyles depend upon it (products and regulation services)**

From the harvesting of fish to the growing of timber, biodiversity provides the source for an enormous range of products we consume and use. Many pharmaceuticals, as well as soaps, starches, rubber, oils, dyes, and fabrics, have been derived from wild plant products – and many more are yet to be discovered. At the larger ecosystem scale, biodiversity plays an enormous role in regulation of the atmosphere, of the water cycle and the nutrient cycles of the soil. From flood control to soil conservation, the annual contribution of these services is worth many trillions of dollars<sup>7</sup>.

##### **Because to do otherwise is wrong (moral/ethical/philosophical)**

Many people think it is wrong to let species go extinct and to treat nature as if it has been designed for our convenience and abuse.

##### **Because it inspires and enriches our lives (aesthetic/spiritual/cultural services)**

It enriches many people's lives every day. We are uplifted by nature and our spirit is renewed by contact with it. It provides endless motivation for enquiry, from schoolchildren to scientists.

See also the EU Biodiversity Communication which sets out similar reasons<sup>8</sup>.

5 <http://biodiv.org/decisions/default.asp?lg=0&m=cop-05&d=06>

6 Communicating Biodiversity: creating a communications strategy and action plan for the England Biodiversity Strategy – *Working with the grain of nature*. Doug Hulyer, March 2007.

7 Bob Costanza et al from the Massachusetts Institute of Technology quoted the value of these annual services at around US\$33 trillion in 1997 (*An Introduction to Ecological Economics* – CRC Press)

8 [http://ec.europa.eu/environment/nature/biodiversity/current\\_biodiversity\\_policy/biodiversity\\_com\\_2006/index\\_en.htm](http://ec.europa.eu/environment/nature/biodiversity/current_biodiversity_policy/biodiversity_com_2006/index_en.htm)

## 4. Shared priorities for action

Within the integrating framework of an Ecosystem Approach, we will deliver our biodiversity objectives by putting sustained effort into the following six priorities:

- protecting the best sites for wildlife;
- targeting action on priority species and habitats;
- embedding proper consideration of biodiversity and ecosystem services in all relevant sectors of policy and decision-making;
- engaging people, and encouraging behaviour change;
- developing and interpreting the evidence base;
- ensuring that the UK plays a proactive role in influencing the development of Multilateral Environmental Agreements, and contributes fully to their domestic delivery;

### 4.1 Protecting the best sites for wildlife

Biodiversity is not distributed evenly over the Earth's land and seas. Geology, climate, topography and human intervention mean that some places are richer in terms of abundance and diversity of species than others. Many species depend on the protection and sympathetic management of such habitats. This is a key element of our approach to conservation, delivered through an evidence-base that identifies the most important areas, provides legal protection, influences activities within their boundaries and seeks restoration to repair damage that occurs within them. These sites are core to our strategy to ensure that biodiversity is able to adapt to environmental changes, particularly climate change. Over time, the species and habitats present at any individual site may change, but the suite of sites in both the terrestrial and marine environment will remain the cornerstone of the UK's biodiversity heritage. Making sites more robust to environmental change – by improving their quality and condition, reducing the impact of other pressures in the surrounding areas, buffering and where appropriate making them larger – will be a priority. Protecting the best sites for wildlife helps the UK to contribute fully to multilateral environment agreements such as the CBD and the Global Strategy for Plant Conservation<sup>9</sup> which includes targets for protecting the most important areas for diversity.

Around 10% of the land area of the United Kingdom is notified as Sites of Special Scientific Interest (SSSI) or Areas of Special Scientific Interest (ASSI)<sup>10</sup>. Many are also Special Areas of Conservation under the EC Habitats Directive, Special Protection Areas under the EC Birds Directive or Ramsar sites under the Convention on Wetlands of International Importance.

Subject to the wishes of Parliament, a Marine Act covering England, Wales, Northern Ireland and UK offshore waters will provide the mechanism to enable us to address the challenges of protecting nationally important marine species and habitats. Scotland is considering similar legislation for Scottish Waters. It will be important to ensure that the Bill is implemented properly to identify appropriate areas for protection. Statutory nature conservation bodies in each of the four administrations are undertaking work to identify suitable sites and ensure a complete Natura 2000 network is established in UK marine waters.

The management and monitoring of protected sites is undertaken in each of the four countries of the UK, working to common standards that enables Government to undertake its national and international reporting commitments at the UK level and identify any areas of shortfall in implementation<sup>11</sup>.

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<sup>9</sup> <http://www.cbd.int/programmes/cross-cutting/plant/default.asp>

<sup>10</sup> As at 31 March 2005

<sup>11</sup> A Statement on Common Standards for Monitoring Designated Sites – [www.jncc.gov.uk/page-2198](http://www.jncc.gov.uk/page-2198)

## Shared priorities for action

Achieving the SSSI condition targets is providing wider benefits, such as restoration of upland heath and juniper stands, landscape benefits of habitat restoration and support for traditional farming, that extend well beyond the designated sites themselves.

In addition to nationally and internationally important sites, places of local importance for geological and biological diversity have a vital role to play in meeting 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. Published guidance promotes a transparent and consistent approach to the identification, selection and management of these important sites, supports local site partnerships and helps raise understanding of their importance.

### 4.2 Targeting action on priority species and habitats

Not all of the UK's priority species and habitats are found in designated areas, and while management of special sites and the wider countryside are pre-requisites of securing future biodiversity, experience shows that targeted action can deliver sustained improvements to the status of species and habitats. The Partnership is committed to achieving this by identifying priorities and assessing progress at a UK level, setting targets and identifying action at a country level, and implementing action at country, regional or local level as appropriate. Where it is beneficial to do so, co-ordination of action will be encouraged at a UK level.

EU and domestic legislation provides a solid base on which to build this action. It provides statutory protection for certain species and habitats, and requires Member States to achieve Favourable Conservation Status and take special conservation measures for particular species. Further, the CBD, through the Global Strategy for Plant Conservation, aims to conserve 60% of the world's threatened plant species *in situ*, as well as establishing *ex situ* collections and recovery and restoration programmes.

To support and supplement this, the UK Biodiversity Partnership has identified a UK list of priority species and habitats. The results of the most recent reporting round under the UK Biodiversity Action Plan show that we can be very successful when we target our resources at conserving particular species and habitats. Trends in species and habitats are not only important in their own right, but also as key indicators of the success of our approach to conserving ecosystems.

In November 2006, the Partnership published revised targets for the existing UK BAP priority species and habitats<sup>12</sup>. These revised targets quantify what we aim to achieve for individual components of our biodiversity. They are expressed at both UK and country levels and further work is ongoing within the countries on prioritisation of these. In 2007, the UK Biodiversity Partnership published a new list of priority species and habitats<sup>13</sup>. This contains 1149 species and 65 habitats. This compares to 577 species and 49 habitats under the original UK BAP list, reflecting both continuing declines in some species and better data available as a result of the UK BAP.

The new UK list of priority species and habitats is an important reference source; these priority habitats and species are a focus for conservation during the next decade and will be used to inform lists of priority species under legislation in each of the countries of the UK. The UK list of priority species and habitats has been published with initial signposting to identify the most important types of action necessary for the conservation of each species. The four administrations of the UK will work together to translate these priorities into programmes of work delivered by partnerships of statutory, voluntary, academic and business organisations at the level most appropriate to the needs of biodiversity.

<sup>12</sup> [www.ukbap.org.uk/GenPageText.aspx?id=98](http://www.ukbap.org.uk/GenPageText.aspx?id=98)

<sup>13</sup> [www.ukbap.org.uk/](http://www.ukbap.org.uk/)

In undertaking this work it will be crucial to tackle three cross-cutting issues:

- helping biodiversity respond to climate change
- reducing the risks and damage caused by invasive non-native species
- providing spatial frameworks for landscape-scale habitat restoration

### Box 3 – Climate Change and Biodiversity

Biodiversity is affected by climate change but it can also play a role in mitigating it; this is one of the many ecosystem services which biodiversity provides. Biodiversity's contribution to climate change mitigation can be summarised as follows:

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.

The primary production and growth of **woodland** also provides a carbon sink<sup>14</sup>.

**Soils**, especially peaty soils or organic soils found in the north and west, are one of the UK's largest sinks for CO<sub>2</sub>. The rate of carbon uptake by **peatlands** is affected by temperature and rainfall, and is, therefore, subject to 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.

While soils under intensively managed crops are poor at carbon sequestration, **grazing grasslands** can sequester 0.3 – 0.6 tC per hectare per year. Woodland soils can achieve even greater rates of uptake than grasslands or agricultural soils.

**Climate change** is likely to have an impact on some priority species and habitats during the period for which the new targets have been set.

The **Modelling Natural Resource Responses to Climate Change**<sup>15</sup> (**MONARCH**) programme examined the projected change in suitable climate for 120 rare or threatened species that are currently the focus for conservation under the UK Biodiversity Action Plan. MONARCH suggested that most of these species were likely to experience changes in the location and/or extent of areas across the UK, where the climate will meet their requirements. For the 32 species examined in detail:

- eight species, including birds (common scoter, song thrush, black grouse, capercaillie) and plants (twinflower and oblong woodsia) may become increasingly, and potentially seriously, threatened;
- Six species (stag beetle, Barbastelle bat, tower mustard, cornflower, cut-grass and floating water plantain) may have to move northwards if they are to survive;
- Fifteen species (including turtle dove, pearl-bordered fritillary butterfly, greater horseshoe bat, red hemp-nettle, and small-flowered catchfly) may be able to extend their range as the climate becomes more suitable for them across a wider area.
- Three species (tree-sparrow, linnets and shepherd's needle) indicated no significant gain or loss of climate space.

<sup>14</sup> Broadmeadow M. and Mathews R. (2003) Forest carbon and climate change, the UK contribution, Forestry Commission Information Note, <http://www.forestresearch.gov.uk/pdf/fcin048.pdf>

<sup>15</sup> Walmsley *et al.* May 2007, Modelling natural resource response to climate change, a synthesis for biodiversity conservation – <http://defraweb/wildlife-countryside/biodiversity/index.htm>

## Shared priorities for action

### Box 3 – Climate Change and Biodiversity (continued)

This illustrates the urgent need to reduce habitat fragmentation to facilitate species dispersal and establishment in new locations as the climate changes.

A recent analysis undertaken for the UK Biodiversity Standing Committee suggested that climate change posed a significant risk to between 5-25% of UK BAP species targets – mainly for species with a restricted geographical range or northern distribution. There is a risk to coastal habitats due to coastal squeeze and to upland hay meadows and other wetland habitats due to drying out. While the general principles and direction of climate change impacts on biodiversity in the UK are understood, the details and timing of impacts on individual species, habitats and sites are very uncertain<sup>16</sup>. Where the limited evidence permits, the likely effects of climate change have been taken into account when setting the new targets. **Guidance for practitioners** on how to reduce the impacts of climate change on biodiversity<sup>17</sup> has been published and a programme of research and monitoring will be needed to inform implementation of action plans, future assessment of progress and further updates of targets.

Our framework on climate change will in part be guided by the proposed Climate Change Bill published in March 2007. This Bill, the first of its kind in the world, will make the UK the first country to set a long-term legal framework for reducing emissions over the next 45 years and beyond. It will not only help the UK meet its commitments on climate change but will help enable the transition to a low carbon economy. The Bill also provides us with an excellent opportunity to take a proactive approach to adaptation, examining the risks that the UK is likely to face and ensuring the Government develops a programme that responds to those risks.

Given that invasive **non-native species** can have serious and damaging effects on other components of biodiversity and social and economic interests, the UK is committed to having a non-native species strategy in place in 2007 and implemented by 2010. The Birds and Habitats Directives also carry obligations to ensure that deliberate introduction of non-native species does not prejudice natural habitats or wild native flora and fauna. Recognising that island-based approaches are required, strategies and programmes are being developed for all-Ireland (Northern Ireland and the Republic of Ireland) using established mechanisms and Great Britain, with the GB Secretariat ensuring appropriate linkages between the two. The GB invasive non-native species approach is built around (i) prevention, (ii) detection and rapid response, and (iii) long term control of invasive species to take forward the CBD principles<sup>18</sup>. This is also an important issue for UK Overseas Territories.

Priority habitats and species cannot be managed in isolation. The conservation of ecosystem structure and functioning, in order to maintain ecosystem services, is a key component of the Ecosystem Approach. In line with this thinking and with the Millennium Ecosystem Assessment approach, we need to consider **ecosystems** as a whole and how the different components function and depend on one another, especially as these relationships respond to climatic and other environmental changes. The highly fragmented ecosystems typical of much of the UK will be a major constraint for the long-term viability of many species and habitats. Action will, therefore, aim to overcome the fragmentation of priority habitats and to reduce pressures on biodiversity in the wider environment through which species move. These broader, landscape-scale actions are reflected in some of the new targets, such as the targets to increase the patch sizes of grassland habitats and the cross-cutting target to establish landscape-scale complexes for wetlands.

<sup>16</sup> A preliminary Assessment of the implications of climate change for the implementation of UK BAP targets. Report to UK Biodiversity Partnership Standing Committee, April 2007

<sup>17</sup> J J Hopkins, H M Allison & C A Walmsley (2007) Conserving biodiversity in a changing climate [www.ukbap.org.uk/Library/BRIG/CBCCGuidance.pdf](http://www.ukbap.org.uk/Library/BRIG/CBCCGuidance.pdf)

<sup>18</sup> [http://www.nonnativespecies.org/documents/Draft\\_StrategyV6.4.pdf](http://www.nonnativespecies.org/documents/Draft_StrategyV6.4.pdf)

New emphasis will be placed on the delivery of Habitat Action Plans (HAPs), both for the ecosystem services they can provide and, where possible, to deliver the needs of species, particularly in making them more resilient to climate change. For some species, dedicated Species Action Plans will continue to be the best focus for action.

As distinct ecological units, habitats can be seen in terms of the ‘bundles’ of products and services that they deliver. However, there may be some functions and services that arise from the *combination* of habitats in a broader mosaic of land cover types or in distinct topographical units such as catchments<sup>19</sup>. It is important to understand these and ensure that opportunities to create the mix of habitats are taken within a spatial framework, bringing together actions from different habitats and species in a particular targeted area, at the regional level.

### 4.3 Embedding proper consideration of biodiversity and ecosystem services into all relevant sectors of policy and decision-making

Biodiversity occurs across our landscape and throughout the seas. The way that people use these resources has led to many of the declines that are signalled by the inclusion of species and habitats on the UK list of priority species and habitats. Improving the environment for biodiversity would help to reverse many of these declines, enhance the conditions for a wide range of other wildlife, and sustain ecosystem services that will ultimately reduce costs to other sectors. This is at the heart of the concept of One Planet Living.

Work to embed consideration of biodiversity and ecosystem services will be achieved through the biodiversity or environment strategies of each of the four countries of the UK and through the statutory conservation bodies as the main delivery agents<sup>20</sup>. Implementing the strategies is a cross-government responsibility, with leadership from all departments to their stakeholders. To halt biodiversity loss, strategies seek to make biodiversity part of the mainstream of our policies and will incorporate the relevant UK BAP targets at the country level. The strategies emphasise that healthy, thriving and diverse ecosystems are essential to everybody’s quality of life and well-being.

Public bodies have an important role in contributing to biodiversity, and domestic legislation in each of the four countries of the UK now includes a biodiversity duty on public bodies<sup>21</sup>.

Strategy implementation			
England	Scotland	Wales	Northern Ireland
<p><i>Workstreams:</i></p> <ul style="list-style-type: none"> <li>Agriculture</li> <li>Woodlands and forestry</li> <li>Water and wetlands</li> <li>Towns cities and development</li> <li>Coasts and seas</li> <li>Climate change adaptation</li> <li>Local and regional</li> <li>Economics and funding</li> <li>Business and biodiversity</li> <li>Education and public understanding</li> </ul>	<p><i>Implementation Plans have been developed to address the following themes:</i></p> <ul style="list-style-type: none"> <li>Rural</li> <li>Urban</li> <li>Marine</li> <li>Local Delivery</li> <li>Interpretation, communication and education</li> <li>Cross-cutting issues</li> </ul>	<p><i>Environment Strategy supported by an action plan, linked to the Wales Biodiversity Framework which identifies the key drivers, outlines the mechanisms, explains the roles remit of those responsible and provides links to tools and information to help maintain and improve biodiversity in Wales.</i></p>	<p><i>76 recommendations divided into groupings; Implementation/delivery groups on Peatland, Uplands, Agricultural systems/farmland birds, Freshwater and wetlands, Coasts and marine.</i></p>

19 Haines-Young, R., and Potschin, M. (2007): *The Ecosystem Concept and the Identification of Ecosystem Goods and Services in the English Policy Context*. Review Paper to Defra, Project Code NR0107, 21pp

20 Natural England, Scottish Natural Heritage, the Countryside Council for Wales, and the Environment and Heritage Service

21 S1 of Nature Conservation (Scotland) Act 2004 <http://www.opsi.gov.uk/legislation/scotland/acts2004/20040006.htm>, Section 40 of the Natural Environment and Rural Communities Act in England and Wales <http://www.opsi.gov.uk/ACTS/acts2006/20060016.htm> and Wildlife (Amendment) (Northern Ireland) Order) [http://www.opsi.gov.uk/si/si1995/Uksi\\_19950761\\_en\\_1.htm](http://www.opsi.gov.uk/si/si1995/Uksi_19950761_en_1.htm)

## Shared priorities for action

### 4.4 Engaging People, and encouraging behaviour change

Halting the loss of biodiversity has widespread public support and a great deal of biodiversity conservation is achieved by enthusiastic, passionate volunteers. Much work is delivered in partnership particularly through the Local Biodiversity Action Plan (LBAP) mechanism whereby partners such as Local Authorities, Statutory Agencies and NGOs work together to identify and deliver local action for biodiversity, enhancing the quality and local distinctiveness of local environments as well as contributing to achieving national targets. But we need to engage more people in taking action to maintain and enhance biodiversity as part of their everyday lives. In doing so, we will be helping to deliver the objectives of the CBD and global strategy for plant conservation which include incorporating the need for conservation into communication, education and public awareness programmes. These principles are embodied in the current *Breathing Places* campaign, being led by the BBC to encourage one million more people to take action to make their local environment more wildlife friendly.

Audience research commissioned by the BBC suggests that 63% of adults in Great Britain are interested in nature and wildlife and that there are two key triggers for involvement: children and the “local patch”. Government and conservation NGOs have commissioned other studies that will inform how best to engage people. The partnership will share this information and its experiences to maximise the effectiveness of its engagement. The key messages (in Box 2) will be tailored through communication strategies in each country of the UK and at regional and local levels. These will seek both to present the case for and value of biodiversity conservation and to encourage and aid behavioural change that will benefit biodiversity (in tandem with behaviours aimed at mitigating/adapting to climate change).

#### Biodiversity behaviours

While many of the behaviours being promoted through wider environmental programmes, such as greater energy- and water-efficiency deliver benefits to biodiversity, the effects of these are largely indirect. The following behaviours which the partnership believes should be promoted will have a more direct relevance to the conservation of biodiversity:

**Create**, or encourage others to create, **wildlife friendly spaces** – at home, in your local community and through work

**Enjoy** (and value) your local wildlife friendly space and share this enjoyment with others

**Support** the work of wildlife conservation organisations

**Think before you buy**, for example wildlife-based products or souvenirs from overseas trips; buy wildlife/environmentally-friendly/sustainably-sourced products

**Record** what you see and send results to your Local Records Centre

**Exercise** your civic duties to ensure those that represent your views reflect your environmental concerns

The core proposition, which builds upon the Breathing Places and other research, is that all ‘doing’ should be enjoyable and wherever possible, experiential. These message/behaviours concur with current thinking on effective practice in communicating biodiversity issues – being **positive**, being **practical** and being **personal**.

### 4.5 Developing and interpreting the evidence base

A sound evidence base is essential to support effective conservation of biodiversity in the UK. Research and associated monitoring is required to:

- assess the current status and trends in biodiversity;
- understand the value of biodiversity and ecosystem services;
- understand the reasons for unfavourable status and decline in biodiversity, assess future vulnerability and identify effective remedial measures and strategies;
- assess the outcomes and effectiveness of policy; and
- innovate in the way we collect, manage and use evidence to support policy and action.

In a nation as small as the UK, there are common strategic research and survey requirements across national boundaries. The partnership will help to identify where collaboration at a UK level delivers the evidence base in the most efficient and cost effective way.

Where appropriate, research and surveillance will be co-ordinated at a UK level in partnership between the four country administrations, the respective country agencies, the Joint Nature Conservation Committee (JNCC) and the UK Research Councils. In some cases, alignment and funding may be sought with European projects.

Understanding **the current status and trends in biodiversity** requires continuing support for, and development of, existing monitoring schemes covering major components of biodiversity such as breeding birds, butterflies, bats and cetaceans, together with periodic habitat surveys and biological recording, as part of a coherent UK monitoring framework and linking to international systems and integrating long-term observations of environmental change. Site condition will remain an important monitoring requirement and innovation may help this to be increasingly integrated with other surveillance activities. Further targeted efforts need to be made to fill knowledge gaps for priority species and habitats. While individual projects will be organised at a range of scales from local to international, to be most effective and efficient, they need to be co-ordinated at a UK level. This understanding will help the UK contribute to targets under the CBD and Global Strategy for Plant Conservation to produce working lists, assessments of conservation status and protocols for conservation.

In the **marine environment**, novel approaches will be required to close major gaps in knowledge on the location, extent and status of species, and habitats and human impacts. Survey work is difficult and expensive, requiring collaboration with agencies and industries operating in the marine environment. We will need to ensure climate change is considered in the design of the marine protected network for UK waters.

Work to improve the **quality and relevance of indicators** will need to continue in order to allow assessment of biodiversity targets at country, UK and European scales and enable the UK to meet international reporting requirements. We need to address weaknesses in the indicator frameworks relating to ecosystem services, ecosystem integrity and resilience and genetic diversity. It is possible that **soil biological indicators** could give us a front-line view of the impacts of land management on soil functioning. However, not enough is yet known on the relationship between soil biological community structure and functions to interpret changes in land management. Methods of monitoring soil biology are developing at a rapid rate, meaning that large robust datasets have yet to be assembled. A priority is, therefore, to undertake research and development on methods to quantify soil biodiversity and on linking structure to function in relation to the response of soil to environmental pressures.



## Shared priorities for action

The continued development of methods, tools and the underlying evidence base for formulating biodiversity policy and targets will be important. This will include developing our understanding of the relationships between **biodiversity, ecosystem functions and goods and services**, our understanding of the likely future impacts of climate change, the social and economic impacts of biodiversity change, and cumulative impacts of development, both domestically and internationally. We need a better understanding of the economic and social benefits that are derived from the delivery of ecosystem goods and services associated with the implementation of UK biodiversity policy, and in particular, to develop appropriate valuation techniques enabling costs of changes to be calculated. It is likely that research efforts will need to focus on non-use values such as resilience, resistance and nutrient cycling.

Options for **adaptation to climate change**, for example how to increase ecosystem resilience and exploit opportunities provided by mitigation strategies, will be developed, including testing of tools for integrated ecosystem assessment and prediction of the future drivers of biodiversity and their interactions, and testing of the practical application of an ecosystem approach. Research to develop policy on the effective targeting and implementation of agri-environment schemes, together with the development and refinement of land management options, will generally take place at the country level.

We need to monitor and **evaluate the outcomes and impacts of our policies** at national, regional and global levels as appropriate to assess progress towards targets and to test the role of biodiversity in sustainable development. We need to develop **innovative** cost-effective methods for surveillance of species and habitats and continue to develop innovative methods for sharing information for managers and policy makers through the National Biodiversity Network (NBN), Local Record Centres and Biodiversity Action Reporting System (BARS); to accumulate and share knowledge more effectively through initiatives like the Centre for Evidence Based Conservation; to maintain taxonomic expertise and develop new methods of identification using DNA marker techniques; and to explore new policy options including market creation in biodiversity, developing incentives for biodiversity such as biodiversity offsets, valuing ecosystems services and developing our understanding of how biodiversity can provide economic benefits to local communities.

Analysis of the knowledge gaps and prioritisation of research needs across the UK is undertaken by the Biodiversity Research Advisory Group (BRAG) in co-ordination with the Environmental Research Funders Forum (ERFF) and the European Platform for Biodiversity Research Strategy (EPBRS). It also provides advice to the European Commission, European Parliament and Member States on European priorities for biodiversity research.

### **4.6 Ensuring that the UK contributes fully to the delivery of Multilateral Environmental Agreements (MEAs) and EU Directives, and plays a proactive role in influencing their development.**

Many of the measures we take within the UK are a direct response, often an obligation, to measures taken internationally in the European or international conventions to which we subscribe. These Conventions and obligations range from legal obligations such as CITES (as implemented by EU Regulations) and EU Directives (Habitats, Birds, Zoos), through major conventions such as the Convention on Biological Diversity, to areas where the UK has traditionally played a prominent role such as the (“Bonn”) Convention on Migratory Species, Bern Convention, and Ramsar Convention on Wetlands of International Importance. Achieving the aims of UK and country strategies will enable the UK to contribute fully to these MEAs and Directives, and provide a credible position to influence their development. The UK’s engagement on international biodiversity issues is managed through an Inter-Departmental Ministerial Group on Biodiversity, and its domestic obligations

## Shared priorities for action

through a range of fora set up in response to specific agreements and conventions to which the UK subscribes and European Union Directives that have been transposed into UK law. The role of the UK Government and individual countries in representation and negotiation varies between agreements. For CITES, for which Defra is the management authority, the UK Government carries the roles of policy negotiation and implementation, while for the Birds and Habitats Directives, the UK Government facilitates a consensual line between the four countries, and decisions on means of implementation are handled by the devolved administrations. For the Convention on Biological Diversity, most aspects of implementation fall to devolved administrations, while the UK Government carries a representational role, and coordinates reporting again facilitating a combined input across the four countries.

### *The Overseas Territories*

The Overseas Territories are predominantly fragile island ecosystems with disproportionately high levels of endemic biodiversity in relation to their area. Climate change, non-native species, uncontrolled infrastructure development and inappropriate fishing practices are the main threats to many ecosystems, habitats and species.

The Overseas Territories (OTs) are not constitutionally part of the UK, but the UK retains responsibility for their external relations, defence and national security. The OTs are self-governing, with their own constitutions and governance structure and they have varying degrees of responsibility for domestic matters. The Foreign and Commonwealth Office is the lead department for the implementation of UK Government policy in the Overseas Territories, including promotion of biodiversity conservation with support for local livelihoods and sustainable development while the Ministry of Justice acts as a focal point for communication for the Crown Dependencies. One of the principles that govern the relationship between UK Overseas Territories and the UK Government is that Britain will continue to provide help to the Overseas Territories that need it. Currently, five of the 14 OTs receive development assistance. At the other end of the spectrum, Bermuda had the highest GDP in the world in 2004, with Cayman Islands and the British Virgin Islands also ranking above the UK.

The UK's reports to successive Conferences of the Parties to the Convention on Biological Diversity (CBD) and a number of other multilateral environmental agreements including CITES, the Bonn Convention on Migratory Species, and the Ramsar Convention, include some information on the Overseas Territories, where relevant, owing to the disproportionate administrative burdens such requirements place on them.

The Overseas Territories' Environment Charters are statements of aspiration and general commitment towards the environment in each territory concerned. Together with the Department for International Development (DfID), FCO administers the Overseas Territories Environment Programme, under which the Government commits funds towards projects aimed at addressing a range of environmental issues in the Overseas Territories. In addition, Defra can provide support through the Darwin Initiative, WSSD Implementation Fund and Flagship Species Fund.

## 5. Indicators for the UK biodiversity conservation framework

Indicators provide a means of simplifying very complex aspects of biodiversity so that general trends can be assessed. It is not possible to produce a single all-embracing measure of biodiversity, but we can select a series of measures which, taken together, allow an overall assessment.

In June 2007, the UK Biodiversity Partnership published a suite of eighteen indicators in *Biodiversity Indicators in Your Pocket 2007*<sup>22</sup>. This is the first time that a set of biodiversity indicators for the UK has been published. The indicators show changes in aspects of biodiversity such as the population size of important species or areas managed for wildlife. They will be used as part of the evidence to assess whether our target to halt biodiversity loss has been achieved. The indicators will be further developed and updated periodically as new data are made available over the next three years to provide a full set of indicators for assessing the 2010 target. The indicators are grouped under six focal areas based on those agreed by the Convention on Biological Diversity and the European Council. Indicators are a useful mechanism for summarising messages, although they can never describe all the changes in the UK's biodiversity. Following the approach agreed at the 8th Conference of the Parties to the Convention on Biological Diversity, these indicators will be used to report internationally on UK progress towards the 2010 target, supported by other sources of information as appropriate.

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<sup>22</sup> <http://www.jncc.gov.uk/page-3923>

# Indicators for the UK biodiversity conservation framework

## Box 5 – The UK Biodiversity indicators<sup>22</sup>

Focal area	Indicator number, title and individual measure (where applicable)		
1. Status and trends of the components of biological diversity	1a. Trends in populations of selected species (birds)	Farmland birds	
		Woodland birds	
		Seabirds	
	1b. Trends in populations of selected species (butterflies)	Butterflies of the wider countryside	
		Specialist butterflies	
	2. Plant diversity	Open habitats	
		Woodlands	
		Boundary habitats	
	3. UK BAP Priority Species		
	4. UK BAP Priority Habitats		
5. Genetic diversity			
6. Protected areas	Extent of protected areas		
	Condition of species and habitat features		
2. Sustainable use	7. Sustainable woodland management		
	8. Area of agri-environment land		
	9. Sustainable fisheries		
3. Threats to biodiversity	10. Ecological impact of air pollution	Area affected by acidity	
		Area affected by nitrogen	
	11. Invasive species		
12. Spring Index			
4. Ecosystem integrity and ecosystem goods and services	13. Marine Trophic Index		
	14. Habitat connectivity		
	15. River quality	Biological	
Chemical			
5. Status of resource transfers and use	16. Expenditure on UK biodiversity		
	17. Expenditure on global biodiversity		
6. Public awareness and participation	18. Conservation volunteering		

<sup>22</sup> <http://www.jncc.gov.uk/page-3923>

## 6. Summary of responsibilities at UK and country levels

Government responsibility for delivering biodiversity conservation is devolved to the countries, but it is recognised that knowledge and expertise on components of biodiversity is often relevant to more than one country and can be held by individuals or organisations (such as NGOs) who operate across the UK. To work efficiently and avoid unnecessary bureaucracy, the emphasis for future work at UK level will be on co-ordination, information exchange, identification of research priorities and some reporting; specific elements are listed below.

1. UK nature conservation vision and overarching approach, including coordinated UK implementation/response to MEAs
2. Identification and updating of UK list of priority species and habitats
3. UK strategy for surveillance/monitoring
4. UK strategy for biodiversity research
5. NBN as the first choice data sharing mechanism for species
6. Guidance/standards for the sustainable use of ecosystems
7. Guidance/standards for a coherent network of protected areas
8. Signposting priority actions for UK list of priority species and habitats to the relevant geographical level (UK/country/regional/local)
9. Appropriate reporting on biodiversity targets and indicator framework (including for MEAs and EC Directives)
10. Effective co-ordination between the four countries of the UK and communication across the partnership, including through UK BAP website and partnership conference
11. Reporting actions that will contribute to BAP targets on the biodiversity action Reporting system (BARS)

Most of the work on embedding biodiversity into policies and programmes, target setting and identifying, planning and implementing delivery mechanisms for priority species and habitats, will be carried out at country level and below – the decisions on means of implementation being handled by the devolved administrations. Diversity itself suggests that there is unlikely to be a single model, and that where it makes sense to do so, one, two, three or all four countries of the UK will come together to plan action jointly.

## 7. Conclusion

Halting biodiversity loss is a huge challenge, particularly in the light of climate change, which will exacerbate many of the adverse drivers. Our approach in the UK is based on the twin principles of partnership and the ecosystem approach. Together, the partnership will ensure that the UK plays a proactive role in influencing the development of Multilateral Environmental Agreements and EU Directives, and contributes fully to their domestic delivery. We will continue to develop a sound evidence base, work to protect the best wildlife sites, take targeted action for priority species and habitats, embed the needs of biodiversity into all sectors, and engage more people in taking action.

## Annex – Membership of UK Biodiversity Partnership Standing Committee

Countryside Council for Wales

Department for Environment, Food and Rural Affairs

Department of Environment, Northern Ireland

Joint Nature Conservation Committee

Natural England

Northern Ireland Biodiversity Group

Scottish Executive

Scottish Natural Heritage

Welsh Assembly Government

Wildlife and Countryside Link

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