THE UNITED KINGDOM NATIONAL REPORT ON BIOLOGICAL DIVERSITY

1. INTRODUCTION

1.1 The United Kingdom (UK) was a signatory to the Convention on Biological Diversity (CBD) at the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 and ratified the Convention in June 1994. The UK's strong commitment to the Convention's objectives has been demonstrated by the part the UK has played in all the discussions leading to the Earth Summit and, since, by the progress already made on its own biodiversity action plan and by its willingness to cooperate with other countries on their biodiversity programmes.

1.2 Despite the limitations placed by its glacial history and by the changes imposed by human occupation, the UK nevertheless has some important biological communities characteristic of humid, semi-humid and temperate climates. It also supports important marine and coastal populations of flora and fauna.

1.3 The UK has an extremely rich heritage of biodiversity expertise and scientific know-how. The long tradition of survey and research in natural history in both the public and voluntary sectors means that the UK is well placed to make a valuable contribution to biodiversity conservation and sustainable use around the world. Such institutions as The Natural History Museum, the Royal Botanic Gardens at Kew and Edinburgh and the research councils as well as the strong scientific base at many of the British universities, provide the base for important work on biodiversity.

1.4 At the time of the Earth Summit in 1992 the UK already had much of its primary legislation on conservation and sustainable use of biodiversity, and many of the necessary organisational features for maintaining and monitoring such activities, in place. The UK Government takes the lead in initiating such activities but much of the work is shared with the nature conservation agencies as well as the voluntary organisations.

1.5 In 1994 the UK produced "Biodiversity: The UK Action Plan" which reviewed UK biotic resources and current activity and developed strategies and goals for action. This was the result of a partnership of key players in the UK and the action points it contained were realistic but wide ranging and were designed to cover all sections of society. It brought together some key milestones for biodiversity action stemming from a variety of directives and national legislation. The aim was to deliver the main strands of future goals in one document and to demonstrate a coherent UK strategy for the conservation and sustainable use of biodiversity.

1.6 The action plan and the subsequent UK Steering Group Report set out 59 broad targets that form a programme of work for a 20 year period from 1994 onwards. Within this work, some 400 species and 38 habitats were selected for urgent action with

quantifiable targets, costed plans and a system for monitoring. For the first time the UK has quantifiable targets capable of being monitored in the long-term. The work has already started but is still at a relatively early stage.

1.7 The UK is seeking to ensure that the basic strategy is bolstered by the general raising of public awareness and local action. Action is being taken to continue to involve all sectors of society, such as land owners and other agricultural interests, business and industrial concerns, local authorities and local groups and children. Local Agenda 21 provides a framework for developing a programme of biodiversity conservation and sustainable use at the local level.

1.8 In preparing this report, the UK has chosen to follow the outline suggested by UNEP/CBD/SBSTTA/3/Inf.15. While the suggested guidance in Decision II/17 could have provided an alternative structure for the report, there appeared some lack of clarity and an element of duplication in some sections. Following the approach in the SBSTTA paper, although not itself without problems, has allowed a fuller and more coherent picture of the UK's biodiversity activity.

2. GOALS AND OBJECTIVES

2.1 National goals and objectives in conservation and sustainable use of biological diversity and how they relate to Article 1 of the Convention on Biological Diversity

2.1.1 In response to Article 6 of the Convention the UK published its Biodiversity Action Plan in January 1994 [1]. It reviewed UK biotic resources and current activity and developed strategies and goals for action. The exercise was undertaken as a partnership of the main players in the UK. Consequently the action points were realistic and wide ranging and were designed to involve all sections of society. It brought together some key milestones for biodiversity action stemming from a variety of directives and national legislation. The aim was to deliver the main strands of future goals in one document and to demonstrate a coherent UK strategy for the conservation and sustainable use of biodiversity.

2.1.2 The overall goal of the plan is to conserve and restore biological diversity within the UK, and to contribute to the conservation of global biodiversity through all appropriate mechanisms. The underlying principles for this are:

- where biological resources are used, such use should be sustainable;

[1] "Biodiversity: The UK Action Plan". 1994 London HMSO

- wise use should be ensured for non-renewable resources;

- the conservation of biodiversity requires the care and attention of individuals and communities, as well as Government processes;

- conservation of biodiversity should be an integral part of Government programmes, policy and action;

- conservation practice and policy should be founded upon a sound knowledge base; and

- the precautionary principle should guide decisions.

2.1.3 The plan's objectives for conserving biodiversity are:

- to conserve and, where practicable, to enhance:

  - the overall populations and natural ranges of native species and the quality and range of wildlife habitats and ecosystems;

  - internationally important and threatened species, habitats and ecosystems; and

  - species, habitats and natural and semi-natural habitats that are characteristic of local areas;

- to increase public awareness of, and involvement in, conserving biodiversity; and

- to contribute to the conservation of biodiversity on a European and global scale.

2.2 How the UK's goals and objectives in 2.1 above relate to other international agreements and programmes

2.2.1 The UK is particularly aware of commitments it has already made under other conventions and agreements which have similar objectives. The UK has ratified the Bern, Bonn, Ramsar and CITES Conventions and is involved in the Pan European Forestry Process. As a member of the European Union, we also adhere to the EC Wild Birds and Habitats Directives.

2.2.2 The **Bern Convention** on the conservation of wildlife and natural habitats - the 'Bern Convention' was opened for signature in 1979, and was ratified by the United Kingdom in 1982. The Convention's principal aims are:

- to ensure conservation and protection of all wild plants and animal species;

- to increase cooperation between States in these areas; and
- to afford special protection to the most vulnerable or threatened species (including migratory species).

The Convention thus protects over 500 wild plant species and more than 1,000 wild animal species. It is open - that is not limited to Europe - and currently is now in force in over 30 member states. It is also the inspiration for the EC Habitats and Wild Birds Directives and had a direct influence on the UK's main conservation legislation, the Wildlife and Countryside Act 1981 (as amended). The UK continues to play an active role in the Convention, and in particular its current work in support of wider biodiversity initiatives.

2.2.3 In 1985 the UK ratified the **Bonn Convention** on the Migratory Species of Wild Animals which requires the protection of listed endangered migratory species and encourages separate international agreements covering these and other threatened species. The UK has also ratified two subsidiary regional Agreements; the Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS) and the Agreement on the Conservation of Bats in Europe. The ASCOBANS and Bats Agreements contain a series of research and management objectives with the overall aim of utilising international cooperation to achieve and maintain a favourable conservation status across their range, for toothed small cetaceans (dolphins and porpoises) and bats respectively. The UK is also a signatory to the African -Eurasian Migratory Waterbird Agreement (AEWA) which proposes a framework within which a long term future for migrant waterbirds can be secured.

2.2.4 The **Convention on International Trade in Endangered Species** (CITES) is one of the oldest and most effective international wildlife agreements. The UK aims to foster its continued growth (membership currently stands at 143 Parties) and to encourage co-operation and synergy with other biodiversity related conventions, particularly the CBD. The UK continues to support trade controls where essential for survival of threatened species, but recognises that well managed sustainable harvesting can be a legitimate route to achieving biodiversity conservation. Enforcement continues to be a priority both internationally and in the UK. The UK-wide Partnership for Action against Wildlife Crime, has brought together all the organisations involved in the enforcement of controls on wildlife. The Partnership provides an opportunity for the statutory enforcement agencies as well as Government Departments and voluntary conservation groups to pool ideas and discuss strategic issues such as the use of forensic techniques, including DNA analysis, better sharing of information and options for improving legislation. The UK was recently elected to chair the Standing Committee of CITES.

2.2.5 The UK acceded to the **Ramsar Convention** on Wetlands in 1976. The aim of the Convention is to secure the conservation and wise use of wetlands, by national action and international cooperation. It was initially developed to counteract the loss of wetland habitats by encouraging wider understanding of their important attributes, and has been

instrumental in helping to halt this loss. Contracting Parties are obliged to facilitate the development of policies and actions which make the best use of wetland resources, to exchange expert advice on wise use issues (including wetland management and sustainable use), and to encourage publicity and prestige especially for those wetlands identified as being of international importance. The UK has listed 116 sites of international importance (including two sites in the Dependent Territories) and is continuing to add to this number.

2.2.6 **Pan European Forestry Process -** The UK committed itself to the implementation of guidelines for the sustainable management of its forests at the Ministerial Conference on the Protection of Forests in Europe in Helsinki in June 1993 where European Forestry Ministers adopted four resolutions. Resolution H2 provides general guidelines for the conservation of the biodiversity of European forests. The UK is currently incorporating these guidelines within the development of The UK Forestry Standard which sets out the principles and standards expected for the sustainable management of all forests and woodlands in the UK.

2.2.7 The UK aims to comply fully with the EU Wild Birds and Habitats Directives in contributing to the Natura 2000 network of protected areas. The UK applies the provisions of the **Habitats and Species Directive** through the Conservation (Natural Habitats &c) Regulations 1994. This provides the legislative framework for the conservation of Special Protection Areas (SPAs) classified under the Birds Directive and Special Areas of Conservation (SACs) designated under the Habitats Directive. 262 sites have been submitted to the European Commission as candidate SACs.

2.2.8 **The EC Wild Birds Directive** relates to the conservation of all species of naturally occurring birds in the wild state within the European territory of the Member States. It covers the protection, management and control of these species and lays down rules for their exploitation on a sustainable basis. Under the Directive Member States are required to take requisite measures to preserve, maintain or re-establish a sufficient diversity and range of habitats for birds species by the creation of protected areas (SPAs), prohibition of trade, and regulation of hunting using the principles of wise use and ecologically balanced control. The UK has so far classified 161 SPAs.

2.2.9 **Oslo and Paris Commissions (OSPAR)** The 1993 Quality Status Report of the North Sea (prepared by an international body of scientists) concluded that more action was needed to protect wildlife and its habitats. This was endorsed by the 1995 North Sea Conference, which asked the OSPAR to assess what action was needed and consider the machinery by which it could be taken. They concluded that a new annex to the revised OSPAR Convention which is due to come into force in 1998 would be the most appropriate way of protecting species and habitats.

The intention would be for the annex to authorise OSPAR to adopt programmes and measures to regulate human activities which could adversely affect the ecosystems and

the biological diversity of the OSPAR maritime area. This would be an extension of the competence of OSPAR into a new area, as foreseen when the new OSPAR convention was adopted in 1992.

The text of the draft Annex to 1992 OSPAR Convention on Habitats and Species, and a draft strategy on the protection and conservation of the ecosystems and biological diversity of marine areas are being developed and further elaborated by OSPAR, with a view to being adopted at the OSPAR Ministerial Meeting in July 1998.

3. BACKGROUND

3.1 Assessment of the status and trends in biodiversity (including agricultural biological diversity)

3.1.1 Species

3.1.1.1 Despite the limitations imposed by its glacial and post-glacial history, and by the changes wrought by human occupation, the UK makes an important contribution to regional and global biodiversity. While its estimated total of some 130,000 species is not large in global terms, it retains important biological communities characteristic of humid, and semi-humid, temperate climates and supports important marine and coastal populations of flora and fauna.

Numbers of terrestrial and freshwater species in the UK compared with recent global estimates of described species in major groups

Group	British species	World species
Viruses	> 1,600	> 5,000
Bacteria	> 1,600	> 4,000
Protozoa	> 20,000	> 40,000
Algae	> 20,000	> 40,000
Fungi	> 15,000	> 70,000
Ferns	80	> 12,000
Bryophytes	1,000	> 14,000
Lichens	1,500	>17,000
Flowering plants	1,400	> 250,000
Non-arthropod invertebrates	> 3,000	> 90,000
Insects	22,500	> 1,000,000
Arthropods other than insects	> 3,000	> 190,000
Freshwater fish	38	> 8,500
Amphibians	6	> 4,000
Reptiles	6	> 6,500
Breeding birds	210	9881
Wintering birds	180	-
Mammals	48	4,327

TOTAL	c. 90,600	c. 1,770,000

Source : Biodiversity: The UK Action Plan

3.1.1.2 British lower plants, and in particular lichens, are of importance in a European context. The British lichen flora has a high proportion of oceanic species and a combination of high rainfall, cool summers, mild winters and low pollution levels in the west and north of the country has resulted in rich lichen assemblages, particularly in valley woodland and montane habitats.

Marine organisms occurring in UK waters

Group	British species
Viruses	2,300
Bacteria	1,700
Protozoa	27,000
Macro-algae	840
Micro-algae	1,360
Invertebrates	estimated 6,500
Fish	300
Birds	188
Mammals	33
TOTAL	Estimated about 40,200

Source : Biodiversity: The UK Action Plan

3.1.1.3 The UK's marine biodiversity is exceptional for a temperate country and its coastal waters continue to support important fisheries. The UK supports up to 45% of the world's grey seals (*Halichoerus grypha*) and almost 40% of Europe's common seals (*Phoca vitulina*). Around 25 species of cetacean have been recorded around our coasts.

3.1.1.4 The UK's coastline is particularly important for breeding seabirds. We have an assemblage which is outstanding in Europe with some 24 regularly breeding species, including around 70% of the world's gannets (*Morus bassanus*) (and a significant proportion of Europe's breeding Leach's Petrels - *Oceanodroma leucorhoa*). The UK's coastline also has many estuaries which provide wintering and staging areas for millions of migratory shorebirds on the East Atlantic flyway. For example, half a million dunlin (*Calidris alpina*) winter on our estuaries, representing around 30% of the East Atlantic population of the *alpina* subspecies of dunlin.

3.1.1.5 Although the UK has relatively few endemic species, the importance of its biodiversity is increased by the presence of a number of endemic infraspecific forms, especially in closely studied groups of organisms such as small mammals and butterflies. For example, the Bank vole (*Clethrionomys glareolus*) is represented by separate subspecies on several islands (*C. glareolus alstoni* on Mull, *C. glareolus skomerensis* on Skomer, *C. glareolus caesarius* on Jersey and *C. glareolus erica* on Raasay), and the

Large Heath butterfly (*Coenonympha tullia*) has morphologically distinctive varieties in different parts of the British Isles.

Endemic species	
Group	No. of endemic species
Lower plants	About 20 bryophyte species
Higher plants	About 43 (excluding microspecies)
Invertebrates	About 9
Vertebrates	One : (Scottish crossbill *Loxia scotica)*

Source : Biodiversity : The UK Action Plan

3.1.1.6 Microbial diversity is an unseen national and international resource that deserves greater attention. It is estimated that 50% of the living protoplasm on this planet is microbial including, for example, as many as 1.5 million species of fungi but only 5% of these are described. Now with new technology, study of microbial diversity is at the cutting edge of science. We are now beginning to answer some key questions including 1) understanding the origins, patterns and drivers of microbial diversity; 2) the extent of microbial diversity including those fastidious populations that cannot be cultured using traditional techniques; 3) their spatial and temporal patterns in the environment; and 4) understanding the rate and range of global dispersal, evolution and extinction.

3.1.2 Habitats

A detailed account of the broad habitat types which characterise the United Kingdom has been published[2]. Brief accounts of the more significant habitat types are set out below:

3.1.2.1 Forest ecosystems

The UK is one of the least wooded European countries. There remain about 300,000 ha of ancient semi-natural broad-leaved (mostly dominated by oak *Quercus robur*, ash *Fraxinus excelsior* and beech *Fagus sylvatica*) and birch woodland (about 1% of the land area) and an area of more recent semi-natural and planted broadleaved woodland estimated at an additional 55,000 ha.

In the west and north of the country Atlantic oakwoods are characterised by a predominance of oak and birch in the canopy, with varying amounts of holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*) and hazel (*Corylus avellan*). These woods are

[2] "Biodiversity: The UK Steering Group Report. Volume 2 Action Plans". 1995 London: HMSO

notable for their bryophytes, lichens, ferns, fungi and invertebrates. There is believed to be around 70,000 to 100,000 hectares of this woodland type in the UK. Related woodland does occur in continental Europe but the British and Irish examples are recognised as internationally important because of their extent and distinctive plant and animal communities. For some of these species Britain and Ireland hold a substantial part of the world/European population.

Relict indigenous forests predominately of Scots pine (*Pinus sylvestris* var *scotica*) occur in central and northern Scotland, although only 16,000 ha of these forests now remain. These woods support a diverse invertebrate fauna and field layer flora, and the UK's only endemic bird species, the Scottish crossbill (*Loxia scotica*).

Coniferous plantations cover approximately 7% (1.5m ha) of the UK. These plantations are relatively young with most ≤ 70 years and many ≤ 40 years and are being diversified in structure and compost as they are felled and regenerated in order to increase their biodiversity value.

3.1.2.2 Agricultural ecosystems

Agricultural ecosystems make up about 70% of the UK's land area. The landscape of much of the lowlands is characterised by medium sized arable and pasture fields bordered by a network of hedgerows. This hedgerow network is estimated at 400,000 km in total length, and constitutes an important refuge for biodiversity in the rural landscape.

While most agricultural grassland has been improved with fertilisers or re-seeded, unimproved grassland remains a significant component within agricultural ecosystems in the UK. Estimates indicate at least 1,200,000 ha of acid grassland remaining in the uplands, though these have limited biodiversity, and perhaps 30,000 ha in the lowlands where they provide an important reservoir of rare species. Unimproved, neutral, grasslands are scarce, with an estimated 15,000 ha remaining, and are characterised by a high proportion of broad-leaved herbaceous plants. Calcareous grasslands, developed on shallow lime-rich soils most often derived from chalk and limestone rocks, occur mainly in the south and north of England, with an estimated 40,000-50,000 ha remaining. They contain an exceptional diversity of rare plants.

Periodically-inundated grazing marshes are still fairly extensive in the UK, with about 300,000 ha, remaining, the largest proportion being in England. Only about 10,000 ha of this grassland is semi-natural grassland supporting a high diversity of native plant species, but the overall habitat is important for breeding and wintering waterfowl.

3.1.2.3 Inland water ecosystems

Standing open waters are represented in the UK by natural lakes and pools and by man-made features such as reservoirs, ponds, gravel pits and canals. Oligotrophic waters, poor

in plant nutrients, are typical of northern and western areas of the UK while eutrophic waters, naturally rich in plant nutrients, are typical of the south and east of the country. Mesotrophic lakes, which are intermediate in character, are now scarce but are potentially very diverse for higher plants and are important in the UK for rare fish species. Dystrophic pools, which are highly acidic and low in oxygen content, occur in peaty areas.

The UK is drained by numerous rivers and streams but most larger watercourses have been physically modified by man, for example, by flood defence structures and weirs. Nonetheless, the mosaic of features found in rivers and streams supports a diverse range of plants and animals, and they often provide a wildlife corridor link between fragmented habitats in intensively farmed areas.

Marshlands of various kinds are widespread and scattered throughout the UK. Fens, which are peatlands which receive water and nutrients from soil, rock and ground water, are important reservoirs for wetland biodiversity, particularly higher plants and invertebrates. The UK is thought to host a large proportion of the fen surviving in the European Union.

There are about 5,000 hectares of reedbeds in the UK. Reedbeds are wetlands dominated by stands of the common reed (*Phragmites australis*), where the water table is at or above ground level for most of the year. Reedbeds are among the most important habitats for birds in the UK, and support a distinctive breeding bird assemblage of nationally rare bird species, as well as providing feeding and roosting sites for migratory birds. Rare invertebrates are also associated with reedbeds.

3.1.2.4 Heathlands

Another habitat for which the UK holds a significant proportion of the European total is lowland heathland. This habitat is characterised by areas of gorse (*Ulex europaeus*) and heathers (*Calluna* spp. and *Erica* spp.) with scattered trees and bogs and supports a rich fauna including invertebrates, reptiles and birds. Just one sixth of the area of heathland present in 1800 remains today.

3.1.2.5 Peatlands

Two types of peatlands with a water supply obtained exclusively from precipitation occur in the UK; these are blanket bogs and lowland raised bogs. The total area of blanket bog in the UK is approximately 1.5 million ha, of which by far the largest proportion is found in Scotland. The UK holds a significant proportion of the blanket bog found in the European Union. Blanket bogs are found in areas of high rainfall in the west and north of the UK, with a particularly significant area in Caithness and Sutherland in the extreme north-east of Scotland. Blanket bogs rarely have an even surface, but usually show marked microtopographic patterning, resulting in mosaics variously of permanent pools,

wet depressions and drier hummocks. This diversity within blanket bogs forms an important component of biodiversity overall.

Lowland raised bogs are one of Europe's rarest and most threatened habitats. They occur in the UK in flat low-lying locations or basins; about 6,000 ha remain. They support a range of characteristic plants and many rare and localised invertebrates.

3.1.2.6 Upland ecosystems

Montane habitats are found on land above the natural level of tree development (about 611m in the UK but descending in the exposed areas of north and west). These alpine and sub-alpine areas represent some of the most natural habitats in the UK, and total about 600,000 ha, of which over 90% occurs in Scotland. These montane habitats support dwarf-shrub heaths, moss-heath, grassland and bryophyte and lichen communities. These communities contain a high diversity of plant and animal species, and montane habitats are important for a number of breeding bird species, including golden eagle (*Aquila chrysaetus*).

Upland heath lies below the montane zone but above the upper edge of enclosed agricultural land (usually 300-400m). It occurs on some 3.7 million ha of land, though, of this 1.6 million ha have less than 50% heather dominance. Upland heath contains mosaics of dry heath, wet heath and blanket bog and is prime habitat for a suite of bird species, including red grouse *Lagopus lagopus* and merlin (*Falco columbarius*).

Limestone pavements are a scarce and non-renewable resource of both geological and biological importance, rich in vascular plants, bryophytes and lichens. Limestone pavements have a complex pattern of crevices (grikes) between which are massive blocks of worn limestone (clints). The habitat is widely scattered in Britain, totalling less than 3,000 hectares, with the largest areas in North Yorkshire and Cumbria, and smaller areas in Lancashire, Wales and Scotland. The UK holds a significant proportion of this resource in the European Union.

3.1.2.7 Coastal and Marine ecosystems

The UK coastline extends to about 18,000 km. About 30% of the coastline of England and Wales is shingle, although this habitat is scarcer in Scotland. Shingle is typically unstable and characterised by a wide range of plant communities; it supports breeding bird species such as Arctic tern (*Sterna paradisaea*).

Sand dune habitats are widely distributed around the UK, with some 50,000 ha remaining. In their natural form they comprise a series of actively building dunes, stable dunes, dune grassland, dune slacks, and dune scrub with, on stable areas of acid or lime-deficient dunes, also dune heath. As a result of man's activities, however, the landward representation of this sequence is frequently missing. The machair plains of the north and

west of Scotland (*ca* 5,000 ha) and western Ireland are distinctive because of the predominance of shell sand and a history of periodic cultivation dating back to prehistoric times. Machair supports extensive grazing regimes which sustain a diverse plant community, a rich invertebrate fauna and breeding birds such as corncrake (*Crex crex*). Saline lagoons connected with the sea are rare in the UK, with a total area of 1,300 ha. They often contain plants and invertebrates rarely found elsewhere.

There are about 45,000 ha of saltmarsh in the UK, covering about 10% of the coast. This is a highly productive habitat which develops along soft, sheltered coasts, usually in estuaries. It often has a diverse flora and constitutes an important habitat for wintering and passage waterfowl such as barnacle goose (*Branta leucopsis*).

There are 163 estuaries in the UK covering 580,000 ha which represents approximately 30% of the total of the North Sea and Atlantic seaboard of western Europe. Plant and animal communities vary with salinity, substrate and length of inundation, but estuaries are typically highly productive systems. There are also numerous other types of marine inlet, including the rias of south-west England and Wales and the sealochs of Scotland. Marine inlets and bays support a wealth of different marine biological communities including those characterised by maerl (*Lithothamnion* spp) and eelgrass (*Zostera* spp).

Much of the western and northern coastline of the UK is rocky or comprises islands which are largely rocky in character. Above high tide, these coasts are often very rich in oceanic lower plant species. Intertidally and subtidally they contain a very wide range of habitat types depending on location, wave exposure, currents and substrate. The marine communities of plants and invertebrates in these situations can be exceptionally rich. The rocky shores off the south and east coast of England are notable for the communities characteristic of chalk. The UK has approximately 75% of the European chalk coast.

Offshore, the seabed around the UK, particularly in the Irish and North Seas, comprises extensive sediment flats which are important spawning areas for a variety of shellfish (such as edible crab *Cancer pagurus,* scampi *Nephrops norvegicus* and scallop *Pecten maximus*) and finned fish (such as plaice *Pleuronectes platessa*, herring *Clupea harengus*, cod *Gadus morhua* and whiting *Merlangius merlangius*).

West of the UK, important marine biological assemblages are being discovered in the deeper water of the continental shelf, on the continental slope and on sea mounts. An example, is the community developed on reefs of the deep sea coral *Lophelia*. Biological surveys in these waters are frequently recording species new to science.

3.2 Assessment of the value of biodiversity, in terms of conservation and sustainable use

3.2.1 In the main, the agricultural crops grown, and the livestock reared, in the UK are

derived from plant and animal species originating outside the country. Some of the grasslands on which livestock is grazed, are derived from natural plant communities, particularly in the uplands, along river-flood plains, and on coastal saltmarshes, but much grassland in the lowlands has been reseeded with high-yielding grass cultivars, and the overall value of native grassland species for agricultural production is difficult to calculate.

3.2.2 Native tree species, principally oak, beech, ash and pine contribute to the UK's timber production, but the majority is derived from introduced and naturalised species mainly in planted forests.

3.2.3 The recreational use of biodiversity is an important factor in the UK. In the lowlands, the rearing and shooting of gamebirds, particularly pheasants (*Phasianus colchicus*), is a significant element in the culture and economy of some agricultural areas, with partridge (*Perdix perdix*), hare (*Lepus capensis*) and fox (*Vulpes vulpes*) also important quarry species. In the uplands, the management of heathland for grouse (*Lagopus lagopus*), is a major factor in maintaining this element of the landscape, while, in Scotland in particular, the management of uplands for the hunting of red deer (*Cervus elephas*) is important in many areas.

3.2.4 Wetlands and coastal marshes support large numbers of waterfowl, and recreational shooting of waterfowl remains a significant activity. The sport is effectively regulated, with appropriate seasonal and other restrictions being applied depending on conservation need, and with sanctuary areas being provided.

3.2.5 The UK's wildlife and the countryside are enjoyed by millions of people in the UK, with walking, picnicking, birdwatching, wildlife-recording etc. being immensely popular. The inland waters of the UK provide recreation for some 2 million anglers, with coarse fisheries predominating in the south and east of the country, and fisheries for salmon (*Salmo salar*) and trout (*Salmo trutta*) predominating in the west and north.

3.2.6 One of the most important uses of native biodiversity is sea fisheries. The current size of landings by UK fishing vessels is about 635,000 tonnes, with a value of £500 million, much of this catch coming from home waters. Important species are cod, plaice, herring, mackerel (*Scomber scombrus*) and haddock (*Melangrammus aeglefinus*). Also significant is the harvest of shellfish, including crab, lobster (*Homarus gammarus*), scampi, scallop, queen scallop (*Chlamys opercularis*), cockles (*Censtoderma edule*) and oysters (*Ostrea edulis*).

3.3 Assessment of the legal and policy framework for biodiversity conservation and sustainable use and the extent to which biodiversity concerns are addressed in national planning

3.3.1 The UK has been aware of the need for conservation and sustainable use of its

natural resources for many years. Even before 1994, the UK already had many measures and processes to promote its conservation and sustainable use of natural resources. These may be summarised as:

- protected areas and national parks legislation

- legislation to protect wildlife and countryside (principally the Wildlife and Countryside Act 1981)

- effective national agencies to carry out and monitor conservation work (English Nature, Scottish Natural Heritage, Countryside Council for Wales, Countryside Commission and the Environment and Heritage Service (Northern Ireland))

- a well established land-use planning system which takes full account of the environmental implications of land-use decisions (planning authorities undertake environmental appraisal of their land use development plans, and measures such as Environmental Impact Assessment set out additional procedures for certain projects)

- pollution control legislation introducing a prior approval system to control air, water and waste releases from the most potentially polluting industrial plants

- forestry regulated and promoted by the Forestry Commission and encouraging the conservation and enhancement of biodiversity as one of its key objectives. The Forest Enterprise manages all the state forests with the Forest Authority providing incentives for privately owned woodlands to be established and managed with biodiversity conservation as an objective of management. In January 1994 the UK published "Sustainable Forestry - the UK Programme". This set out the policies and actions that the UK would pursue to meet the Government's aims of the sustainable management of its existing woodlands and forests and the expansion of tree cover within the UK. For example, funding is being provided for the creation of a new national forest in the East Midlands as well as support (via the Countryside Commission) for 12 Community Forests around major cities. Together these two initiatives have succeeded in planting some 5,200 ha. of trees up to 1996/97.

- research institutions providing a strong scientific base for sound decisions (for example in our universities, research councils and biodiversity institutions such as the Royal Botanic Gardens Kew and Edinburgh, The Natural History Museum and the MaCaulay Land Use Research Institute)

- commitment to other international biodiversity-related conventions (Bern, Bonn, CITES, and Ramsar as well as the EC directives on Birds and Habitats)

Agriculture dominates the land use of the UK and farming presents both the greatest threat to biodiversity while also being the sector that can contribute most to its conservation. Although resources are deployed towards agri-environment schemes such as Environmentally Sensitive Areas, Countryside Stewardship, Tir Cymen and the Countryside Access Scheme, the actual total of payments to farmers remains low in comparison to the overall size of the UK's agricultural economy and in comparison with the total expenditure of the European Common Agricultural Policy. Options for reducing agricultural subsidies and for increasing environmentally-led payments need to be pursued.

The table below sets out the protected areas under UK legislation at 31 March 1997.

Protected Areas in the UK as at 31 March 1997		
Site[1]	**Number**	**Area ('000ha)[2]**
National Nature Reserves	362	207
Local Nature Reserves[3]	629	33
Sites of Special Scientific Interest (SSSIs)[4]	6,264	2,084
Areas of Special Scientific Interest (ASSIs)[5]	117	79
Candidate Special Areas of Conservation (SACs)	255	1,332
Special Protection Areas (SPAs)	150	576
Ramsar Areas[6]	111	418

1 Some sites may be included in more than one category

2 Rounded to nearest thousand hectares

3 Great Britain only

4 Great Britain only

5 Northern Ireland only

6 Figure excludes two Ramsar Areas which have been designated in the UK Dependent Territories

Source: English Nature, Countryside Council for Wales, Scottish Natural Heritage, Environment and Heritage Service (NI), Joint Nature Conservation Committee.

3.3.2 The UK Government announced its intention to publish plans for action on biodiversity as well as on sustainable development, forestry and climate change shortly after the Earth Summit. From the start the aim was to prepare the biodiversity action plan through consultation and in partnership with as many of the interest groups as possible.

When *Biodiversity : The UK Action Plan*, along with the other three plans, was published in January 1994, the Government announced that it would set up a Biodiversity Steering Group made up of representatives from central and local government, the statutory nature conservation agencies, industry, farming and land management, scientific and academic institutions and leading voluntary conservation bodies. The Group had four tasks: to develop a range of specific costed targets for key species and habitats for the years 2000 and 2010; to improve the accessibility and co-ordination of existing biological datasets; to provide common standards for future recording and to examine the feasibility in due course of a single UK Biota Database; and to prepare and implement a public awareness campaign as well as to establish a review process for the delivery of the commitments contained in the Plan.

3.3.3 The Steering Group reported in December 1995 with recommendations on the tasks[3]. The then Government welcomed the objectives and targets put forward and endorsed the aims and main proposals in the report as the basis for follow-up action.

3.3.4 The UK Government places much emphasis on the "greening" of Government as a whole, such that the principles of sustainable development are integrated into its policies, programmes and projects. Such principles encompass ongoing work to maintain and enhance biodiversity within the United Kingdom at all levels. The main priorities for biodiversity work in the UK now are:

- the implementation of the action plans for species and habitats published as the second volume of the UK Steering Group report, including arrangements for monitoring and reporting on progress;

- the preparation and publication of further action plans for species and habitats. This work is on target for completion by the end of 1998;

- the preparation by local authorities of local biodiversity action plans so as to: contribute to the achievement of national targets for species and habitats; set targets for species and habitats which are of local importance; encourage communities at local level to be involved in biodiversity work. Such local biodiversity action plans are to be integrated in authorities' Local Agenda 21 work;

- the carrying forward of a strategy for public awareness and education in key sectors and institutions;

[3] "Biodiversity : The UK Steering Group Report. Volume 1 and Volume 2 Action Plans". 1995 London : HMSO

- setting up a network for data collection (the National Biodiversity Network) to provide the necessary supporting information for biodiversity;

- the work of the Environmental Audit Committee to scrutinise how far the policies and programmes of Government Departments and Non-Departmental Public Bodies contribute to environmental protection and sustainable development; to audit their performance and to report to Parliament.

3.4 Assessment of institutional responsibilities and capacity

3.4.1 The UK has a long and distinguished tradition of observation, study and concern for its natural resources. Scientific investigation of species and habitats has been in progress for over two hundred years. It was from such work that much of the stimulus came for establishing nature "preserves", nature study classes in schools and the legislation to protect fisheries, birds and other forms of wildlife. It also promoted the establishment of basic and strategic research in British universities, natural history institutions, botanic gardens, zoos and within the research councils. From about 1880, a comprehensive statutory framework was gradually built up, not only to protect threatened or endangered species but also to conserve important habitats for wildlife, culminating in the current basis of nature conservation today in the Wildlife and Countryside Act 1981 and parallel legislation for Northern Ireland.

Within the UK, organisations from a number of sectors including local and central Government, statutory agencies, voluntary conservation bodies, research institutes and academia, business and industry, farming and land management, education and the media provide the structural framework within which the Biodiversity Action Plan can be implemented. Each sector brings its own unique contribution to delivery of specific aspects of the Plan.

3.4.2 Government departments

The Government has the lead responsibility for raising the profile of biodiversity in the UK. The Department of the Environment, Transport and the Regions (DETR), the Scottish Office, the Welsh Office, the Department of the Environment for Northern Ireland, the Ministry of Agriculture, Fisheries and Food (MAFF) and the Forestry Commission ensure that biodiversity is taken into account in all relevant policy and planning issues covering the use of the natural environment. These Departments can also promote biodiversity through the administration of grants and awards. The Department for Education and Employment also promotes good practice by integrating the environment into school curriculum and institutional programmes.

3.4.3 Government agencies

The three country agencies, Countryside Council for Wales, English Nature and Scottish

Natural Heritage, are responsible for providing advice to the Government on policies for or affecting nature conservation; for notifying land of special interest for its wildlife, geological and natural features; for establishing National Nature Reserves; for publicising information about nature conservation and advising on the effects of ecological change. These three agencies, operating through the Joint Nature Conservation Committee (JNCC), also deliver their special responsibilities for Great Britain as a whole and internationally. The special responsibilities include the development of standards and protocols for nature conservation; promoting the free inter-change of data; collating existing knowledge and commissioning new research and pursuing wider international goals for sustainability.

The Countryside Commission set up in 1968 is responsible for landscape conservation and for promoting and extending the opportunities for people to gain access to, and enjoyment from, the natural beauty of England. The Countryside Council for Wales and Scottish Natural Heritage have similar remits for Wales and Scotland respectively.

Two new Environment Agencies were established in the UK during 1996. These bodies, the Environment Agency (England and Wales) and the Scottish Environment Protection Agency, provide a comprehensive approach to the protection and management of water, land and air through an integrated environmental regulatory approach. The Environment Agency also has a significant remit for providing and maintaining flood and sea defence. Both agencies make a contribution towards attaining the objective of achieving sustainable development.

The Environment and Heritage Service (Northern Ireland), also established in 1996, has functions equivalent to the three country agencies in Great Britain, *ie*. the protection and management of habitats and species, earth science and landscapes found in Northern Ireland. The Environment and Heritage Service also has a remit for environmental protection similar to the responsibilities of the Environment Agency for England and Wales and the Scottish Environment Protection Agency.

The Forestry Commission is responsible for forestry in Great Britain and like the Environment Agencies is required to have regard to conservation when it discharges its activities. The Forestry Commission comprises the Forestry Authority, responsible for regulating and encouraging all forms of multi-purpose forestry, and Forest Enterprise which leads the private forestry sector.

3.4.4 Research institutes, collections and centres of excellence

Individually, and increasingly through collaboration, the UK Research Councils play an important role in supporting biodiversity research related work. The Natural Environment Research Council (NERC) and the Biotechnology and Biological Sciences Research Council (BBSRC) make the most significant contributions.

NERC aims to promote and support high quality research, survey and long term environmental monitoring and related post-graduate training in terrestrial, marine and freshwater biology, and earth, atmospheric, hydrological, oceanographic and polar sciences and earth observations. Each of NERC's Research Centres has a strategy designed to reflect the 'environmental and natural resources issues' that have been identified by NERC as central to their long term mission. NERC is also an important provider of funds for biodiversity related research undertaken by British Universities. The Biotechnology and Biological Sciences Research Council aims to enhance the management of biological resources and their utilisation and interactions with the environment.

The long history of biological study throughout the world by the British, has often involved the collection and preservation of specimens. As a consequence a number of UK museums and herbaria have some of the largest and most comprehensive reference collections in existence. Some of these collections have been studied for more than 250 years, and are extraordinarily rich in type-specimens, the individuals to which the identity of scientific names are tied. The Natural History Museum in London, for example maintains a global reference collection of 68 million specimens of plants and animals, including the primary types of 800,000 nominal species. This vital resource is used by scientists from all over the world who spend 15,000 visitor days at the NHM annually. The Royal Botanic Gardens, based at Kew and Edinburgh similarly maintain herbaria and libraries, that are extensively used as resource centres by biologists from all over the world who are inventorying and documenting the global biota.

The UK has 61 botanic gardens and arboreta which represents a unique collection of horticultural expertise that is utilised for public display, education and wild species conservation. The UK botanic gardens hold material of threatened UK species, including local provenances now extirpated in the wild and species now extinct in the wild - for example, *Bromus interruptus*. These collections generate within the umbrella of Plant Net, the networking group for UK plant collections and Botanic Gardens Conservation International, the international agency promoting conservation activities in botanic gardens. Traditionally the UK collections have been dominated by exotic germplasm. However, their role in supporting UK biodiversity is developing rapidly. This is achieved through public display of indigenous plant material (at, for example, Cambridge University Botanic Garden), public education (through the Botanic Garden Education Network), species survey work (Royal Botanic Garden Edinburgh with Scottish Natural Heritage), habitat management (for example, at Wakehurst Place) and support to species recovery plans (for example, the Sainsbury Orchid Project at the Royal Botanic Gardens Kew with English Nature).

As a direct support to species conservation, the Millennium Seedbank Project (at the Royal Botanic Gardens Kew at Wakehurst Place) currently holds 552 species of the UK flora and intends to bank in total 1,352 of the UK’s 1,571 vascular plant species. The Seedbank has already supported reintroduction for a number of species, including

Corrigiola littoralis and *Scirpus triqueter*.

In addition, many agricultural and horticultural research stations have important holdings of native and exotic crop cultivars such as cereals, vegetables, fruit trees and crop relatives. The UK Government funds a number of important plant genetic resource collections such as the Vegetable Gene Bank, the National Fruit Collection, the Pea Gene Bank, the collection of wild species at the Royal Botanic Gardens and the Commonwealth Potato Collection. There are also important private collections which maintain specialist collections of plants.

There are over 60 zoos in the UK maintaining collections of living animals and working to their aims of conservation and scientific research as well as contributing to education programmes. Increasingly the zoos are working on co-ordinated breeding programmes for rare and endangered species involving a number of taxa and with collaboration at a national, regional and international level.

Since 1947 the UK has had a network of 10 'national' culture collections for microorganisms. These hold approximately 68,000 strains of algae, animal cells, bacteria, fungi, phages, plasmids, plant cells and protozoa. They and 32 other UK member organisations of the European Culture Collections Organisation had holdings of 253,765 strains in 1992. About 35-40% of the isolates originated from the UK but these represent only about 10-25% of known British species.

While the UK is in a strong position to make a significant contribution to improve our scientific knowledge on microbial diversity, in view of the level of ignorance, we need to do so as part of a co-ordinated international effort. There is a need to expand training particularly in new methods such as the application of molecular techniques in mycology to maintain and increase the scientific base worldwide.

The main themes of research undertaken in the UK are:

- identification, cataloguing, description and distribution of plants and animals in particular regions;
- conservation *ex situ* and reintroduction *in situ* of genetic material of threatened plant taxa;
- characterisation of evolutionary processes and patterns of diversity;
- conservation and restoration requirements of habitats, especially for those habitats which also support 'key' species and rare or endangered species;
- population processes underlying biodiversity, including interactions between different groups of species and species and their habitats;
- transfer of expertise through the provision of advice both within the UK and worldwide on conservation and sustainable use activities;
- long term countryside change in the UK including loss of habitats and species for

whatever reason. There is an Environmental Change Network of sites funded by a consortium led by NERC. There are also periodic major surveys of change in the UK, the next, funded by DETR and NERC and starting in 1998, will report in 2000.

Cross cutting research needs, particularly those that address the broader underlying causes of biodiversity loss, are also being developed. Research is being conducted into:

- the possible adverse effects of climate change, particularly on species that are at the edge of their range and are likely to be most susceptible to change;
- concentrations of nutrients which trigger rapid growth of algae in water courses; into the effects of buffer zones and the effects of acid deposition on aquatic biota;
- effects of Genetically Modified Organisms on native biota; and
- effectiveness of measures to reverse habitat fragmentation and criteria for defining where to target habitat creation in order to maximise its impact on associated species populations.

3.4.5 Voluntary sector

Many of the bodies operating in the voluntary sector also have a significant part to play in ensuring that the objectives of the UK Biodiversity Action Plan are being met. The UK is fortunate in having a long tradition of individuals and organisations involved in collecting information on the state of the environment. This interest is reflected in the strong membership of voluntary organisations concerned about the conservation of wildlife. Consequently, the UK has built up much expertise in this field and is therefore well placed to make a distinctive contribution to the conservation of its own wildlife heritage and to the evolving agenda for sustainable development on a global scale. There are more than 2,000 organisations in the UK involved with natural history and nature conservation; membership of just the better-known groups numbers over 3.7 million. A group of these organisations comprising Butterfly Conservation, Friends of the Earth, Plantlife, The Wildlife Trusts, The Royal Society for the Protection of Birds and Worldwide Fund for Nature joined together to form *Biodiversity Challenge. Biodiversity Challenge* published an agenda for conservation action in the UK which made an active and positive contribution towards the production of the UK Biodiversity Action Plan and in particular to the follow-through of preparation of individual species and habitat action plans.

3.4.6 Local activity

Biodiversity is ultimately conserved through action at the local level. Local action requires the participation of local government through to the inhabitants of any locality. The Local Authorities have an important role to play in raising awareness of biodiversity within local communities and encouraging action. Through their regulatory duties they can also control the actions of others. Local Authorities therefore take biodiversity into

consideration when making decisions about planning and carrying out public works. Many Local Authorities have started work to prepare local biodiversity action plans on the lines described in section 3.3.4. Guidance was issued to authorities on how to go about this in April and November 1997. Thus far, some 100 local biodiversity action plans are at various stages of preparation.

3.4.7 Public involvement

The UK is particularly fortunate in having a general public who pay much attention to the need for conservation and sustainable use of biodiversity. This can be gauged to some extent by the interest shown in the voluntary organisations (see section 3.4.5) but also by the work carried out by the media and within the education system and the interest that is generated from these activities.

3.4.8 Businesses and industry

The business and industry sectors can influence biodiversity at a number of levels and therefore are a key sector involved in the implementation of the Plan. They can contribute by raising awareness and sponsoring individual key species and key habitat action plans and local biodiversity action plan initiatives and participating in local biodiversity action plan initiatives. See also section 6.1.4.

3.5 Assessment of threats to biodiversity and its management, both direct and indirect

3.5.1 The UK's human population has done much to alter the biodiversity of the UK. Agriculture has been practised in the country for some 6,000 years. Neolithic farmers began the clearance of the primary woodland which had previously covered much of the country and deforestation continued through the Bronze and Iron Ages. By around 800 years ago the proportions of farmland, moorland and woodland in Britain were probably much as they are today, with agricultural ecosystems predominating, although the twentieth century has seen major declines in semi-natural habitats such as species rich grasslands, heathlands and peatlands and deciduous woodlands.

3.5.2 Land use continues to be dominated by agriculture with, broadly speaking, livestock rearing in the wetter and more mountainous north and west and arable farming in the flatter south and east. The increasing intensity of agriculture since the 1950s has led generally to a less diverse landscape, and this has been one of the factors likely to have led to decreases in the biodiversity of agricultural ecosystems. The biodiversity of lowland agricultural ecosystems is threatened by the continuing removal and neglect of the network of hedgerows, which is resulting in an estimated loss of 5% of hedgerows annually. The effect of this loss of habitat is exacerbated by the intensive use of agricultural pesticides and fertilisers in some areas, which is reducing plant and invertebrate biodiversity and removing the food supply of farmland bird communities.

Much of the remaining species-rich grassland and heathland in the lowlands is now protected, but reversion to scrub through neglect is a problem in some areas.

3.5.3 The primary threats to inland water ecosystems are eutrophication in lowland streams, rivers and lakes caused by nitrates or phosphates in sewage or fertiliser run-off, a problem frequently exacerbated by water abstraction for public water supply, agricultural irrigation and industry. Water abstraction is also a continuing problem for some fens, while agricultural drainage of grazing marshes is reducing biodiversity in some areas.

3.5.4 Blanket bogs are threatened in some localities by nitrogen pollution, moorland drainage, by uncontrolled burning and by acidification from atmospheric deposition.

3.5.6 Many of the still-extensive areas of upland heathland are being overgrazed by sheep, and in some parts of Scotland by red deer, which is resulting in loss of soil, peat and heather content in affected areas; a problem sometimes exacerbated by excessive burning. This overgrazing is also preventing the regeneration of forest in the uplands.

3.5.7 The last 100 years has seen a rise in the proportion of the UK land area which has been urbanised. In 1981, 10% of the area of England was urbanised and it is projected that this fraction will rise to 12% by 2016. Provision of housing has been directly responsible for the loss and fragmentation of lowland heathland habitat in south and east England.

3.5.8 Coastal areas receive a considerable degree of protection under planning law, but the pressure to extend ports facilities on some estuaries is adversely affecting natural systems. In Scotland, aquaculture, particularly the development of salmon farms within sheltered sealochs, can cause local problems because of the waste produced. There is also the possibility that the inevitable interbreeding of escaped salmon with wild salmon may weaken the competitive fitness of the latter in some rivers. The UK is 'tilting' in a south-easterly direction as the land surface adjusts to the removal of the ice following the last glaciation, and this is leading to a gradual loss of intertidal area on southern and eastern coasts as low-tide mark moves up shore towards static coastal defences. This problem would be exacerbated by rising sea levels resulting from anticipated global warming.

3.5.9 The major pressure on coastal and marine ecosystems, however, derives from commercial sea fisheries. It has been estimated that certain sections of the southern North Sea are trawled up to four times a year on average, and the Irish Sea is also heavily exploited. Many fish stocks are at worryingly low levels because of over-exploitation. Assessments by the International Council for the Exploration of the Sea of the level of stocks necessary to avoid an increasing risk that they will fail to reproduce themselves (the Minimum Biological Acceptable Level or MBAL) show that in 1996 only 51% of the stocks fished by UK and other European Community fleets were considered to be above MBAL. A substantial proportion of the fish caught is discarded and non-target species, for example, small cetaceans, are taken in some types of fishing nets.

3.6 Copies of relevant country studies and state of environment reports

Biodiversity: The UK Action Plan, the Steering Group report, Government response paper and BioDiversity in Scotland, The Way Forward are attached to the original of this report (delivered to the CBD Secretariat) only.

4. STRATEGY

4.1 Status of development and implementation of the national biodiversity strategy and other relevant strategies and details of how they relate

4.1.1 *Biodiversity : The UK Action Plan* published in 1994 contained a list of 59 broad targets for the Government and its nature conservation agencies, in partnership with others, to conserve and, where practicable, to enhance wild species and wildlife habitats over 20 years. These can be summarised as the following targets:

Protecting Biodiversity -

> Complete designations for protected areas under the Ramsar Convention, EC Directives and UK legislation and finalise management arrangements.
>
> Support measures for maintaining and supporting biodiversity outside protected areas, including restoration and appropriate use of incentive measures.
>
> Identify threatened species and carry out measures for their conservation.
>
> Involve non-governmental organisations and the general public in efforts to maintain and restore biodiversity and continue to promote biodiversity in the UK.
>
> Maintain a strict approach to biosafety issues, the introduction of further non-native species and the use of biocides.

Assessing biodiversity -

> Complete terrestrial, freshwater and marine habitat classifications and contribute to the development of EU (EUNIS) classification. Develop cost-effective monitoring and assessment methodologies.
>
> Marshall the UK's resources of information relating to biodiversity in support of the UK's Action Plan and those of other countries and facilitate user access to these.

Utilising biodiversity -

> Encourage sustainable utilisation of biodiversity resources including through coastal zone management, sustainable fisheries and the appropriate use of controls and incentives.

International conservation and encouraging benefits from biodiversity -

> Support international wildlife conservation through full implementation of all relevant Conventions and agreements
>
> Support biodiversity-related programmes in developing countries through the aid programme and assist the preparation of biodiversity strategies in the Dependent Territories
>
> Maintain *ex situ* genetic collections and make information on these available to the countries of origin of the genetic material.

4.1.2 The full fifty-nine targets and progress on them to June 1996 are provided in the "Government Response to the UK Steering Group Report on Biodiversity". Subsequent progress to this will be reported in the UK's next report to the Convention.

4.1.3 The UK Government established a Panel on Sustainable Development to advise it on strategic issues arising from Government implementation of the four post Rio documents being published - Biodiversity : The UK Action Plan, Strategy on Sustainable Development, the UK Programme for Sustainable Forestry and the UK Programme for Climate. Through these documents the UK has a very clear framework for discharging many of the obligations set under the CBD. In particular the UK Biodiversity Action Plan has an overall goal, *"To conserve and enhance biological diversity within the UK, and to contribute to the conservation of global biodiversity through all appropriate mechanisms"*.

4.1.4 Progress has been made in meeting many of the objectives of the Biodiversity Convention. The UK policy will continue to be based on sound science and will be implemented through a range of programmes taken forward in partnership between the Government, public, private, voluntary, research, business and local sectors.

4.1.5 Although much has been achieved over the last few years further work is required to consolidate the progress made. Some areas requiring strategic development include:

4.1.5.1 <u>Awareness</u>

The future of biodiversity within the UK depends on securing support from a wide range of organisations and individuals operating at all levels. There needs to be a concerted effort to promote a greater awareness and integration in businesses, public bodies and

educational institutes of our national biodiversity. Already the UK has recognised the need to raise public awareness generally. Consequently a campaign to increase the public's awareness of the need to conserve biodiversity and the contribution they can make to this has been implemented. Land managers also need to be better informed of the sources of information and advice available to them and the suite of incentives, such as agri-environment schemes, nature conservation grants, local authority schemes, and economic development programmes, which are in place to encourage sympathetic land management practices which will benefit biodiversity.

4.1.5.2 Local biodiversity initiatives

If the UK Biodiversity Action Plan is to be implemented successfully it requires some means of ensuring that the national strategy can be translated into effective action at the local level. Local Agenda 21 is one of the principal mechanisms for developing a programme of biodiversity conservation at the local level and local biodiversity action plans are one way of achieving this. Through local biodiversity action plans the national targets for species and habitats, as set out in the UK Biodiversity Action Plan, can be implemented at the local level; the local context to biodiversity which gives an area its distinctive character can be determined; effective local partnerships should be established; awareness in the need for biodiversity conservation at the local level should be raised and a basis for monitoring progress on biodiversity conservation according to agreed standards should be established. Paragraphs 3.3.4 and 3.4.6 are also relevant here.

4.1.5.3 Future research requirements

Despite a considerable volume of research being undertaken in the UK, there are still some important gaps in the research programme. These gaps occur where larger scale-cross cutting research topics, those that address the broader underlying causes of biodiversity loss, fall between the major strategic research programmes funded by the Research Councils and the practical habitat and species management programmes funded by the statutory and voluntary sector. Further research to link ecological processes such as over-grazing, acidic and nitrogen deposition and land use change to the key species and key habitats falls into this category. The Department of the Environment, Transport and the Regions will be establishing a group to identify and take forward the research agenda needed to support the Government commitments under the Biodiversity Action Plan.

4.1.5.4 Co-ordination of information collection and access to information

There is a real and growing public demand for information about wildlife in the UK. Access to this information is essential if wise choices are to be made in the future about the human impact on the natural environment. Much of the biodiversity information, however, remains scattered across the country in many different and incompatible forms; from modern, computerised, databases to scraps of paper kept in shoe boxes. The UK needs to ensure that effort is directed through programmes, such as that proposed through the National Biodiversity Network, to enable information to be used at both local and national levels regardless of where it is held. Establishment of such information networks will provide an invaluable mechanism for making clear and understandable information widely available to policy makers and the public in many different forms.

4.2 Constraints anticipated and encountered in implementation of the strategy and experience in dealing with these

4.2.1 The UK's work on biodiversity conservation and sustainable use has necessarily to take into account many factors and constraints. These may include:

- agriculture - it is necessary to produce food efficiently, at affordable prices, in ways that are consistent with a thriving rural economy and conservation of the countryside and wildlife. Many changes in agricultural practices would have resulted from technological development irrespective of the Common Agricultural Policy. However, the Common Agricultural Policy is a major influence and too small a proportion of its resources are channelled towards achieving environmental objectives through appropriate land management. The forthcoming reforms of the CAP should lead to more market oriented policy and greater emphasis on measures designed to secure specific environmental goals;
- fishing - as well as the general factors of taking into account the needs of the fishing communities and the need to reach agreements at a regional level, one specific issue has highlighted the need for conservation in this area. The use of high seas drift nets are known to have a detrimental effect on dolphins and other non-target species. The UK is supporting a phasing out of such nets.
- transport - there is a whole spectrum of transport impacts on biodiversity, ranging from primary impacts that have immediate causal links to the development of transport infrastructure, to secondary impacts relating to induced traffic and development over a wider geographical area and from the direct impacts of building new infrastructure to the indirect impacts arising from the operation and use of the infrastructure.

4.2.2 Section 5 of volume 1 of "Biodiversity: the UK Steering Group Report" identified and discussed the constraints they anticipated. Some of these constraints might be better regarded as challenges and opportunities to redirect policy in a way that maintains and enhances biodiversity. The report therefore identifies the following opportunities for enhancing biodiversity:

Air Quality

Reduce airborne emissions from power generation, industrial combustion processes. domestic heating and road transport

Pursue international agreements to ensure that other countries do the same.

Water

To control as far as possible, contamination from diffuse sources.

To manage discharges of waste water

Specific new water resource developments:-

- effective demand management;

- assessment of ground water vulnerability and ground water protection;

- appropriate augmentation schemes:

- encourage greater variety of riverside vegetation and restoration of bankside habitats through more sympathetic water course management and farming practices.

Energy

Support renewable energy through the non-Fossil fuel Obligation.

Encouragement of energy efficiency and conservation.

Research into cleaner forms of coal and oil fuel including the environmental impact of alternative methods.

Transport

Encourage development where people live close to work and shops

Technological improvements to reduce the effect of emissions

Encourage forms of transport such as walking and cycling and alternative forms of transport to the motor vehicle.

Farming

Encourage farming and land management practices that enhance natural and locally characteristic diversity of flora and fauna

Improve livestock management to minimise pollution from wastes.

Establish stocking densities and practices on moors, heaths and semi-natural grasslands in keeping with the environmental carrying capacity of the land.

Improve crop management to minimise the use of fertilisers and pesticides.

Encourage technological and other innovation to develop environmentally sympathetic farming methods.

Encourage the commercial use of crop varieties and traditional breeds which are particularly adapted to the specific environment of a region.

Recognise the importance of those traditional skills and practices upon which many valued habitats depend.

Encourage greater diversity on the farm, for example through the encouragement of reversion of arable land to pastoral use in appropriate areas and the use of more varied rotations.

Maintain, restore or reinstate hedges where possible and appropriate.

Woodlands

Create new woodlands, especially in areas of low wildlife value.

Conserve and restore as appropriate the remaining areas of ancient and

semi-natural woodland.

Encourage the sensitive management of other existing forests and woodlands including the restructuring of even-aged plantations to introduce the diversity of species and age classes, the use of silvicultural techniques that seek to mimic natural processes, the incorporation of open space, the retention of old trees and dead wood, improved management of rides and riparian zones, the creation of woodland edge habitats and the removal of invasive species.

Encourage the use of native species of local provenance and where possible their establishment through natural regeneration.

Promote the use of good quality local genetic hardwood stock where native broadleaved tree species are being planted and preserve local genotypes through the careful selection of seed sources.

Urban

Create new urban "wildspace" within existing built up areas through more imaginative management of parks. other public open spaces and road verges.

Encourage householders to enhance the biodiversity of their own gardens

Coastal Zone

The adoption of soft engineering approaches to coastal defence, including in appropriate cases setting back the line of defences.

Encourage the development of estuary and other local management plans.

Encourage the co-ordinated efforts of those organisations responsible for managing inshore waters. the shoreline and the coastal fringe.

Marine

Integrate environmental concerns into fisheries policies.

Balance fishing effort against the natural ability of fish stocks to regenerate.

Undertake more research into the full environmental impact of fishery policies and practices on other species and the wider environment; and seek ways to minimise adverse effects.

Further reduce the discharge of contaminants such as heavy metals and PCBs into the sea either directly. or via input to rivers and to the atmosphere.

4.3 Copies of strategy documents

Biodiversity: The UK Action Plan, the Steering Group report, Government response paper and BioDiversity in Scotland, The Way Forward attached to the original of this report (delivered to the CBD Secretariat) only.

5. ACTION PLAN

5.1 Status of development and implementation of the national biodiversity action plan and other relevant action plans and programmes and how they relate

5.1.1 The UK Biodiversity Action Plan contains the broad targets of the Government, its nature conservation agencies and those other bodies and organisations with whom it is in partnership. These targets (the "59 Steps") form a programme of work for a 20 year period from 1994 onwards. The targets encompass a range of activities on habitats (32 targets); species (10 targets); public awareness and understanding (8 targets); contributing to the conservation of biodiversity on a European and global scale (9 targets).

5.1.2 A progress report on these targets was included within the Response of the then Government to the report of the UK Steering Group. This Response was published in May 1996. (A further progress report on achievements against these targets is being considered for early 1998).

5.1.3 The Steering Group report adopted a target-based approach, with the selection of species being based on criteria including the UK's national and international commitments, the level of threat, UK proportion of world or regional population levels; decline in numbers and range and rarity. This produced a long list of some 1200 species whose status is to be monitored to keep a check on the health of biodiversity in the UK, at least as regards the detection of undesirable change. From this list, some 400 species were considered to require urgent conservation action. Action plans for 116 such species were included in volume 2 of the Steering Group report, and implementation of these action plans has commenced - see section 3.3.4. Work has also started on the preparation of the remaining around 290 species action plans. It is intended to publish these plans by the end of 1998.

5.1.4 A similar process was followed for key habitats, using criteria including the UK's international obligations; habitats at risk, such as those with a high rate of decline, or which are rare; areas, particularly marine areas, which may be functionally critical; and areas important for key species. 38 key habitats were identified for urgent action; 14 such action plans were included in the Steering Group report; work has started on the remaining 24 action plans which are due for publication by the end of 1998.

5.1.5 Progress on implementation on other aspects of the Steering Group Report - data and information; local biodiversity action plans; and public awareness - is detailed elsewhere, notably in section 4.1.

5.2. Constraints anticipated and encountered in implementation of plans and experience of dealing with these

5.2.1 The individual species and habitat action plans being implemented in the UK all set specific targets and actions which need to be met if the current factors causing loss, decline or deterioration are to be addressed. Each plan sets out a suite of actions under the broad headings of policy and legislation; site safeguard and management; (species) protection and management; advisory; international; future research and monitoring; and communications and publicity. For each plan there will be some very specific obstacles

that need to be overcome if effective delivery is to be secured. However, there will also be some general points which emerge across a number of plans. The UK takes its responsibility of measuring the effectiveness of implementation of plans seriously. Partner organisations involved in plan implementation are currently helping to develop a mechanism for reporting which will enable two levels of assessment: strategic across plans and tactical within plans. One of the most important elements of the reporting process is that it will provide a structured framework within which future progress can be reviewed, constraints identified and opportunities for addressing issues identified.

5.2.2 Whilst implementation of action plans is still at an early stage a number of issues are already emerging as constraints. Some of these are outlined below:

5.2.2.1 Site safeguard and management

Many threatened habitats and species, especially those with a restricted distribution, are protected within both the national SSSI/ASSI and international site networks such as Natura 2000 and Ramsar. However, even within these sites there are some long term activities which result in the unfavourable condition of the protected habitats and species. Most notable is overgrazing by sheep in upland areas and insufficient management in grasslands, lowland heath and wetland areas. There is also a need for a general shift in land management practice with a reduction in specialisation and intensity of agricultural practice. For example, farm specialisation towards arable cropping has reduced the availability of livestock in many lowland areas with the result being an increase in the protected sites. This in turn leads to the loss of important calcareous grassland flora and fauna.

Land use change in catchment areas can also be detrimental. For example, when grasslands are ploughed, forests clear-felled or land drained, nutrients are released from the soil and may enter water bodies, causing water enrichment. The long-term effect of such land use changes is that the pathway taken by the rain-water as it runs off the land into receiving streams and lakes is shortened. This in turn increases the risk of pollution and siltation, which can smother fish spawning sites and damage aquatic vegetation.

Many of the actions in plans will be delivered through existing management schemes such as Countryside Stewardship, the Wildlife Enhancement Scheme and Tir Cymen. Delivery is however, constrained by the resource limitations within these schemes. Better information is also required on the distribution and condition of habitats if the provision and targeting of these schemes is to be improved.

5.2.2.2 Research and monitoring

Research needs are identified in most of the action plans. In some situations a lack of expertise in the correct specialism or even in the right part of the country may hold back the implementation of a plan. Lack of survey information to assess current status may also be a problem. In other situations, such as for the restoration and expansion of grasslands, the studies are required to investigate the most appropriate techniques for establishing species-rich grasslands. In other cases the implementation of action plans is delayed by very specific requirements. For example, the time taken for plant

propagation to occur so that the Fen orchid (*Liparis loesii*) is ready for translocation is longer than expected. In this case the result will be approximately a 3 year delay in establishing the translocation experiments set out in the plans.

In 1996 the UK Biodiversity Group identified a need to review research requirements arising from the UK Biodiversity Action Plan and in particular the individual species and habitat action plans flowing from it. The main themes of research undertaken in the UK were outlined in section 3.4.4. The review commissioned demonstrated that overall a high proportion of the research needs identified were being addressed. 96% of the research requirements for habitats are being wholly or partially addressed and 50% of those identified for species are being addressed. However, as one might expect, the degree to which the research requirements for different taxonomic groups are being met varies considerably. For popular groups such as birds, approximately 96% of the research identified is being addressed whilst for the lesser-known lower plants only 33% is being addressed. A Research Group will be established by the DETR to take forward issues relating to raising awareness of research initiatives and to influence the direction of particular research funds so specific needs are targeted.

5.2.2.3 Partnerships with business and industry

Section 7.1.5. details the total estimated annual cost for implementation of the first 116 species and 14 habitat action plans. A significant proportion of these costs will be met through the re-direction of Government programmes. Similar action by the private sector will also assist implementation. However, substantial further resources will need to be found if implementation is to be fully successful. One mechanism for achieving this is the system of "championing" particular species or habitat action plans. Champions can sponsor plans by providing funds, providing in-kind support such as materials or services, providing people to assist with the work to by delivering an action in the plan. Some companies are taking up the challenge of sponsorship for species, the first being ICI who have sponsored work; for the monitoring of sites, habitat management and training of wardens, and for the Large blue butterfly *Maculinea arion* and Pearl bordered fritillary *Boloria euphrosyne*. To date six species have found champions but further effort will be needed to develop the system as additional action plans are finalised.

The UK Round Table is currently studying mechanisms to assist both large and small businesses to take account of biodiversity within their overall environmental management. The findings of the study will be published in early 1998.

5.3 Copies of relevant action plans

Biodiversity: The UK Action Plan, the Steering Group report and Government response paper are attached to the original of this report (delivered to the CBD Secretariat) only.

6. COLLABORATION AND PARTNERSHIP

6.1 Progress in ensuring the involvement and acceptance of all sectors in the

implementation of biodiversity objectives into national planning and development

6.1.1 Implementation of the action plan and subsequent costed targets remains the overall responsibility of the central government departments involved in the work (principally DETR, MAFF, Scottish Office, Welsh Office and the Department of the Environment (Northern Ireland)), with a United Kingdom Biodiversity Group (on which the Government, its agencies and all key sectors are represented) to coordinate the work of separate Biodiversity Groups for England, Scotland, Wales and Northern Ireland which will play a key role in reporting and monitoring on progress with the published action plans and carrying forward biodiversity work generally. The UK Group is assisted by: a Targets Group tasked with completing the remaining action plans and submitting them to Government for approval; an Information Group responsible for development of the proposed National Biodiversity Network; and a Local Issues Group who have produced guidance on local biodiversity action plans.

6.1.2 Partnership is a key element of the action plan progress with involvement from many different interest groups. Consequently the consultation process has been thorough, scientifically-based with a firm commitment from all groups and much interest from the media and the general public. The principals have been the Government, central government departments, agencies (statutory bodies with responsibility for conservation in the UK), biodiversity institutions holding collections (The Natural History Museum, Royal Botanic Gardens Kew, Royal Botanic Garden Edinburgh), local government interests (local authorities and their representatives), academia, industry, farming and land management groups and voluntary conservation groups under the general umbrella of Biodiversity Challenge.

6.1.3 All these groups will continue to play a role. Each action plan has a contact point (either within a central government department or a statutory authority). Their task is to provide a secretariat for the individual plan and to oversee the action. A lead partner (often from the voluntary sector) has a key role in leading on the implementation, monitoring and reporting of progress on each plan. Champions (from business, voluntary sector, or other) are being sought to provide additional resources for implementation either through funding or in kind and a number have been announced.

6.1.4 Business is also asked to consider playing a further part. The Round Table on Sustainable Development has been charged with the task of seeing how business can include biodiversity in their overall environment management. The Round Table's report is expected to be published early in 1998.

6.1.5 The UK Biodiversity Group has been set up to oversee the implementation of the action plans within 20 years. The Group oversees four Biodiversity Groups established for England, Scotland, Wales and Northern Ireland. These groups are chaired by the appropriate central government department and have responsibility for promoting and stimulating action on the implementation of the individual plans; liaising with the National Targets Group in preparing the next tranche of costed action plans; liaising with the Local Issues Group on good practice and consistency with the preparation of Local Biodiversity Action Plans; liaising with the Information Group and the network set up by

JNCC; promoting public awareness and providing regular progress reports to the UK Group.

6.1.6 The National Targets Group co-ordinates work on the species list and monitoring their status, producing lists of characteristic species for key habitats and co-ordinating the preparation of outstanding species and habitats action plans. The Group covers marine as well as terrestrial species and habitats.

6.1.7 The Information Group has responsibility for co-ordinating the development of the proposed National Information Network and the development of locally based Biodiversity Information Systems through the establishment of local consortia funding.

6.1.8 The Local Issues Group provides guidance for the development of the Local Biodiversity Action Plans and assists with standards of good practice and training. The information contained in Local Biodiversity Action Plans may provide useful information which can contribute to the preparation of nature conservation policies in local development plans.

6.2 Collaboration with international organisations and national organisations from other countries

As well as investing substantial efforts and resources to achieve the objectives of the Convention within the UK, the UK Government (through the UK Biodiversity Action Plan) has also made a commitment to support schemes that promote sustainable development around the world.

6.2.1 UK Dependent Territories

6.2.1.1 There is a strong relationship with and commitment to the UK Dependent Territories. The Foreign and Commonwealth Office (FCO) supports a number of environmental projects there and this year the Cayman Islands, Falkland Islands, Turks and Caicos Islands, Anguilla, Ascension and Montserrat received funding. The JNCC has also funded a project detailing the biodiversity profiles of every UK Dependent Territory, to be published in Spring 1998.

6.2.1.2 There are a number of important existing (and potential) Ramsar wetland sites in the UK Dependent Territories. The FCO and DETR are working hard to encourage them to implement their obligations under the Ramsar Convention and nominate new sites. An Interdepartmental Working Group on Environmental Legislation has also just been set up to encourage and assist UK Dependent Territories to have environmental conventions extended to them and to help with local implementation. Further information on progress being made in the Dependent Territories is contained in Annex 1.

6.2.2 Crown Dependencies

6.2.2.1 Jersey ratified the Convention on Biological Diversity in June 1994. The Insular Authorities' Biodiversity Strategy is being developed to take account of the mosaic of habitats within the island rather than just focussing on key habitats alone. As such the strategy will tie together action at the species, habitat and land-use levels. For each of these levels, action plans are being prepared, backed up by legal protection and

monitoring programmes. For example:

- at the species level, there are key monitoring projects underway which will form the baseline information for a Biological database being prepared. The work at the species level will be supported by protection provided by the forthcoming Conservation of Wildlife (Jersey) Law 199-. Action plans have already been prepared for 10 vascular plants, three birds and an amphibian (Agile Frog *Rana dalmatina*).
- at the habitat level, the Insular Authorities are currently working through a Phase 1 Habitat Survey (due to complete in the middle of 1998) using aerial photography analysis by consultant ecologists. This will be extended by field surveys of key areas next season. The habitat process is being supported by the designation of Sites of Special Interest (with three designated so far), backed up by the Island Planning (Jersey) Law 1964 (as amended). Action plans have been developed for 26 sites covering sand dune, heathland, intertidal zones, wetlands and woodland habitats
- in addition, the Insular Authorities are also involved in a countryside character assessment being undertaken as part of an Island Plan review. This work will tie in closely with the Phase 1 and 2 Habitat Surveys.

6.2.2.2 In Guernsey, following consideration of the results of the baseline study of local wildlife habitats and species undertaken by university students, agreement has been reached on a partnership arrangement to progress the development of a Biodiversity Strategy in three stages.

The first stage, a biodiversity audit, will, using agreed criteria, identify the current status and threats to species and habitats and the determine the priorities for their protection.

The second stage will develop key nature conservation objectives and targets under three headings:

- what should be done within existing resources and the existing legislative structure;
- what could be done with limited additional resources and minor changes in legislation; and
- what would require more substantial additional resources and major new legislation.

The results of Stage 2 will be put out to consultation with the relevant Committees of the States of Guernsey and put to the States for endorsement.

Within the overall framework of the strategy agreed by the States, the final stage will identify the roles and responsibilities of individual agencies in the preparation and implementation of Action Plans for the protection of wildlife species and habitats. These plans are likely to be directed initially at public land and the land owned or administered by sympathetic bodies or individuals but they could eventually be expanded to cover all land should resources and the legislative structure allow.

6.2.2.3 The Isle of Man has enabling legislation in place. A baseline survey of the island to help determine which areas should be subject to specific protective measures has been conducted. A second phase survey to look at the selected areas has now also taken place. A third stage is now planned which will finally determine which areas are to be

designated as Areas of Special Scientific Interest under the terms of the Island's Wildlife Act 1990.

The Isle of Man's Department of Agriculture, Fisheries and Forestry is taking steps to enhance its staff structure to help it to comply more easily with the Island's obligations as regards implementing its existing enabling legislation. The Department also intends to embark on a five year implementation plan for its Wildlife Act which should place the Island in a position to accede to the Convention on Biological Diversity should this be so decided.

6.2.3 Darwin Initiative

6.2.3.1 The Darwin Initiative was part of the UK's commitment to the Earth Summit in 1992. This £3m a year grant programme aims to fund UK biodiversity experts in projects to help developing countries meet their obligations under the Biodiversity Convention. Since 1993 over 140 projects involving over 70 UK institutions and over 70 developing countries have been funded. The objectives of the Initiative look for British biodiversity expertise working in collaboration with partners from countries rich in biodiversity but poor in resources. The projects must have a real lasting impact on the capacity of the developing country and wherever possible funding will be used as a catalyst to lever in additional funding.

6.2.3.2 Some of the projects have involved internationally renowned centres such as The Natural History Museum and the Royal Botanic Gardens at Kew and Edinburgh as well as many of the universities. Others have used the skills of such organisations as the Marine Conservation Society and the London Ecology Unit to run projects in such diverse places as coral reefs off the coast of Sri Lanka and the city of Santiago in Chile. The partners come from universities, research institutes, government departments, local and regional authorities and national parks authorities. Emphasis is given to the understanding of local peoples' needs and involvement of local people in the work.

6.2.4 International Aid Programme

The Department for International Development (DFID) supports projects which contribute to sustainable development in poorer countries. The environment has a high priority and activities are guided by its own biodiversity strategy. DFID supports the objectives of the Convention for Biological Diversity, not only through its own bilateral activities but also through international fora.

6.3 Progress in raising public awareness of the benefits and importance of biological diversity

Great importance is attached to public involvement in biodiversity work in the UK. Section 4.1 explains the action that has been taken and is being taken.

7. RESOURCE AVAILABILITY

7.1 Summary analysis of the budget for implementation and action plans discussed

7.1.1 Resourcing the UK Biodiversity Action Plan

Within the UK a significant volume of the resources required to meet the objectives set out in the UK Biodiversity Action Plan are met by Government and public sector funding.

7.1.2 Government departments

The agri-environment and research programmes run by DETR, the Scottish Office's Agriculture, Environment and Fisheries Department, the Welsh Office's Agriculture Department, the Department of Agriculture for Northern Ireland, MAFF and the Forestry Commission make a significant contribution to meeting the objectives of the UK Biodiversity Action Plan. In 1996/7 expenditure on agri-environment schemes in the UK amounted to approximately £80 million. The research programmes of these Departments also contribute to the UK Biodiversity Action Plan. In 1997/8 the research budget is estimated to be around £5 million. This includes MAFF's aquatic environment research programme, which has a component addressing marine biodiversity related activities (£2.9 million) and the Forestry Commission for research on biodiversity in plantation forests (£0.9 million).

7.1.3 Government agencies

The expenditure of the statutory nature conservation agencies makes a significant contribution to implementing the UK Biodiversity Action Plan. Spend for the agencies in 1995/6 totalled £120 million: Countryside Council for Wales £17 million, English Nature £41 million and Scottish Natural Heritage £40 million. A significant proportion of these resources contribute to habitat and species protection, land management, species recovery programmes, survey and monitoring programmes and public awareness.

The Environment Agency (England and Wales) and the Scottish Environmental Protection Agency also fund research programmes many of which make some contribution to activities which underpin the biodiversity process. The most significant of these programmes is the Environment Agency's conservation research programme which was allocated £0.5 million in 1996/7.

Environment and Heritage Service (Northern Ireland) has spent £850,000 on a wide range of habitat and species surveys much of which provides information relating to biodiversity. The information is available to the public through the Centre for Environmental Data and Recording based at the Ulster Museum in Belfast.

7.1.4 Research Councils

Amongst the Research Councils, NERC is probably the main potential source of funding for biodiversity research. It is estimated that in 1996/7 approximately £14 million of NERC's science budget was spent on biodiversity research funding, including studentship and fellowship awards at British Universities. NERC has also identified biodiversity as one of six major environmental and natural resource issues which it sees as being of strategic importance for the next 5-6 years.

7.1.5 Additional costs of implementing 'key' species and habitat action plans

To date the UK has produced action plans for 116 'key' species and 14 'key' habitats and intends to produce a further 290 species and 24 habitat action plans. Each plan establishes enhancement targets and sets out specific actions required in terms of policy and legislative requirements; site safeguard and management; advisory; international initiatives; research and monitoring needs; and communication and publicity; in order to meet the enhancement targets. The plan targets and the actions required to meet these are long term goals with many of the plans spanning to the year 2010.

The additional costs associated with implementing the species plans were estimated using information from a variety of sources. These included costs associated with undertaking surveys, population studies, habitat management and creation schemes, site protection, monitoring requirements and advice to land managers. Total estimated annual costs for implementation of the 116 species action plans are £3.8 million in 1997 falling to £2.9 million in 2000 and down to £2.4 million in 2010. It is anticipated that over half of these costs will be met by Government programmes, however, 'sponsors' are also being sought for individual plans. Sponsors provide an important link between the commercial and voluntary sector and will help to develop the 'partnership theme' which is so important for the successful implementation of these plans. 'Sponsors' can provide funds, in-kind support e.g. materials and services, people to assist with the work, or by actually delivering a particular action in a plan. The use of 'sponsors' is one way in which the UK is clearly trying to develop the theme of partnership between the private and voluntary sector. Such partnerships are essential if all these plans are to be to be implemented.

The costs for implementing the 14 'key' habitat action plans were also estimated. The estimates associated with these included management of land by the public sector; cost of land management scheme payments to private owners; revenue from land management and land management costs. The total estimated costs per annum were given as £12.9 million in 1997, rising to £24.5 million in 2000 and rising again to £37.2 million in 2010. The costs for these 14 plans were additional to the existing public expenditure commitments.

Further refinement of the estimated costs for implementing the initial 116 'key' species and 14 key habitat action plans will also be gathered. In addition information on the cost of implementing plans for about a further 290 key species and 24 key habitats is also being compiled. A process to monitor and report on progress made with plan implementation should provide the mechanism to gather these details. One of the objectives of the reporting process will be to determine how much of the action specified in plans is being delivered through existing programmes and where additional resources and programmes are actually required to ensure targets are met. To do this estimates of the resources required to undertake every action specified in individual plans will need to be compiled. Gathering this detailed information will enable the UK to determine where to direct often limited resources in order to make progress towards achieving the enhancement targets.

7.2 Summary analysis of manpower and skills required for implementation of the strategies and action plans as compared with the available resources

As detailed in other sections of the report, notably section 3.4, there are a number of sectors involved in ensuring that the UK Biodiversity Action Plan can be delivered. These range from local and central Government, statutory agencies, voluntary conservation bodies, research institutes and academia, business and industry, farming, forestry and land management, fishing communities, education and the media. Implementation in the UK is not generally constrained by a lack of available expertise. There is, however, much which still has to be undertaken to improve effective deployment of this expertise; to ensure that valuable resources are not diluted by effort being duplicated in certain areas; and to ensure that new technology is used to maximum effect. Some of the areas where the UK will continue to strive to improve delivery are listed below. In many of these areas we are already taking important steps and some of the relevant initiatives are outlined in section 10.2.

- Use of new information technology to improve standards for electronic data storage and exchange.
- Improved integration of data from a number of sources to deliver statements on land-use and integration across a range of scales.
- Promote research into, testing and development of new technological products that will bring benefits to wildlife and their surrounding habitats.
- Improved understanding and use of traditional management practices which benefit wildlife.
- Better deployment and integration of skills from different disciplines to address cross cutting issues.
- Establish awareness raising programmes to promote community involvement in biodiversity initiatives and sustainable production and consumption.
- Establish training in biodiversity issues for educational staff and ensure that professional institutes promote biodiversity training as part of continuing professional development.
- Encourage more partnerships and sponsorship between business and industry to support the implementation of plans.

7.3 Summary analysis of international technical and financial cooperation given relevant to implementation of the strategies and action plans

A recently issued Paper on International Development sets out the UK Government's aims for achieving sustainable development. The most important goal is to eliminate poverty, ensuring that the poorest people in the world benefit as we move towards a new global society. With this goal in mind, the Government is helping developing countries, often rich in species and habitats but lacking in other resources, to manage and benefit from their biodiversity. DFID plans to help them conserve such natural resources and

gain income from them, which offers benefits both for the alleviation of poverty and the safeguarding of biodiversity.

Since the Rio Earth Summit in 1992, DFID has committed £175 million to bilateral projects which assist over 40 countries with the conservation or sustainable use of their biological diversity.

The UK Government has also committed £130 million to date, through the Global Environment Facility, to support projects to help developing countries to meet their obligations under the Biodiversity and Climate Change Conventions. About 40% of GEF funding supports biodiversity projects. International donors recently agreed a target of US$2.75 billion for the second replenishment of the GEF.

The Darwin Initiative grant programme started in 1993/94 at a cost of £1 million per year, increasing to £2 million in 1994/95. From 1995/1996 it has run at £3 million per year.

The FCO has an annual budget for environmental projects overseas. The total budget, over three years from 1995, was £1,130,000. Over half this amount has been used to fund biodiversity-related projects in the United Kingdom's Dependent Territories and in developing countries. Details of projects funded in the Dependent Territories are given in the Annex to this report. Examples of projects funded in developing countries are in Madagascar on a Alaotra wetland conservation project, the conservation and sustainable management of endemic plant species in Yemen and biodiversity conservation in Rio Platano Biosphere Reserve (including marine turtles) in Honduras.

8. SCHEDULE The extent to which the timetables specified by the action plan and by COP decisions are being met and the reasons for any difference

The UK's general programme of biodiversity action is "the 59 Steps", which are set out in the UK Biodiversity Action Plan. These constitute a programme for a 20 year period running from 1994. The UK's future biodiversity actions have a variety of target dates attached to them. The next tranche of the remaining species and habitat action plans are due for completion by the end of 1998. The next major milestone should then be the Millennium Biodiversity report in the year 2000, giving an overall assessment of progress as of that date. Individual species and habitat action plans contain a variety of targets, often in terms of establishing a particular population by a set date or in carrying out necessary research. Commonly, action plans include targets for 2000, 2005 or 2010, though there are some longer time horizons. It is certainly reasonable to set reasonably short timetables for administrative action and reporting, but targets for individual species and habitats should normally be set several years ahead for measurable progress to be demonstrable.

9. MONITORING AND EVALUATION

9.1 The status of national efforts to monitor and evaluate status and trends in UK biodiversity (including the services it provides) and in the use of and threats to that biodiversity

9.1.1 The UK is developing a strategy for long term monitoring of biodiversity and environmental change. An Environmental Change Network of a small number of intensively monitored sites has been established by NERC and other partners to determine the dimensions of environmental change in the UK. A programme for long term monitoring of land use and ecological changes in the wider countryside has been established by NERC, DETR and the Environment and Heritage Service (NI). Surveys have been repeated in 1978, 1984 and 1990. The next 'Countryside Survey' planned for 1998 will use a reporting framework that is set closely to the Convention on Biological Diversity and will enable the UK to report current trends. In 1994 the Forestry Commission initiated The National Inventory of Woodlands and Trees which provides a rolling programme of sampling across the UK giving considerable information on biodiversity conservation aspects. Monitoring frameworks are in place for studying threats to biodiversity as a consequence of water abstractions and pollution, atmospheric emissions and deposition and radioactive discharges.

9.1.2 A comprehensive system of monitoring for designated wildlife sites will commence in 1998 under the auspices of the statutory nature conservation agencies. The UK has an established and comprehensive system in place for monitoring bird populations (supported by the British Trust for Ornithology, the Wildfowl and Wetlands Trust, the Royal Society for the Protection of Birds and JNCC. Monitoring schemes are also in place for higher plants, butterflies and other selected species groups, while a monitoring strategy is being developed for mammals.

9.1.3. A land cover map, known as the *Land Cover of Scotland 1988*, provides an objective baseline for developing and monitoring the effectiveness of policies affecting the state of the countryside in Scotland has been produced. It provides a medium scale census (1:25,000 scale) of the land cover of Scotland, interpreted from aerial photography from around the year 1988. The map was digitised and has been used in combination with other environmental data (such as soil, topography, climate) to explore a wide range of land use and environmental issues at local, regional and national levels in Scotland. From the land cover map it has been possible to classify 95% of Scotland according to the published 'broad' biodiversity habitats. Consideration is currently being given to a possible programme for updating the land cover map and thereby monitoring land cover change.

9.1.4. A systematic study of land cover change, the *National Countryside Monitoring Scheme* (NCMS), was also initiated in 1983 by the Nature Conservancy Council and from 1986 onwards it focused on Scotland. The study was inherited by Scottish Natural Heritage, reviewed, extended, and completed in 1997. This major land cover change time series employed the same 1988 photography commissioned for the land cover of Scotland census map, together with comparative photography from around 1947 and 1973. Based

on a 7.5% sample by area, the NCMS has quantified, for instance, the consequences of commercial afforestation on semi-natural habitats, agricultural intensification and specialisation, and the expansion of urban development, and is widely used for environmental audit and reporting in Scotland. It has been possible to estimate historical change for 14 of the biodiversity 'broad habitats' from the NCMS time series from the late 1940's to the early 1970's and the late 1980's.

9.2 Key targets and indicators used in assessing status, performance and need

Key targets have been published for 116 selected high priority species and 14 habitats in the UK Biodiversity Group Steering Report. Procedures for reporting on progress towards targets are being tested and are expected to be fully implemented by 1998. Provisional biodiversity indicators were included in the Wildlife Chapter of the UK report on Indicators of Sustainable Development published in 1996. These included: proportion of native species at risk; changes in population and distribution of breeding birds; and, plant diversity in grasslands. The biodiversity indicators are under review with a view to publishing a revised set of sustainable development indicators in 1998. A database (BURD) has been established to organise information on the status of native species in the UK.

9.3 Methods used in tracking implementation of the national action plan and the effectiveness of the action in achieving its objectives

A number of the groups and individual organisations involved in the implementation of the UK Biodiversity action Plan are contributing to the development of a reporting process. The reporting will be undertaken at two levels:

- Strategic and operational – allowing internal adjustments to the Biodiversity Action Plan overall and to individual habitat and species plans.
- Achievement reporting – which will provide information on progress and problems and can be used externally to demonstrate accountability, or for influencing actions.

To develop the reporting process trials are being undertaken with a number of organisations involved in individual plan implementation. The trials will address, amongst other issues, the need for guidance for those implementing plans; the relationships between different groups involved in the UK Action Plan process; the level of information required about resourcing and the procedures for gathering these details; the information required to inform us about biological processes, programme delivery and the effectiveness of action towards achieving outcomes; and the appropriate technology to support the exchange of reported information.

10. SHARING NATIONAL EXPERIENCE

10.1 Status of national implementation of the clearing house mechanism, including thematic contributions and access to national metadatabases

10.1.1 Three principal mechanisms will be used to improve the sharing of data, information and expertise. These are the "UK's 'National Biodiversity Network"; the European Environment Agency's "European Information Observation network (EIONET)" and the Convention's own "Clearing House Mechanism".

10.1.2 The National Biodiversity Network is concerned with data access and management within the UK. Using the most recent technology, the National Biodiversity Network will create a structure which allows pooling of information from organisations operating both locally and nationally. Those contributing to the Network will work within a framework of common standards for accreditation, ensuring that standards of quality, validation and survey and sampling are applied, and sharing of data and information. The organisations involved in the consortium developing the National Biodiversity Network are JNCC (on behalf of the Countryside Council for Wales, English Nature and Scottish Natural Heritage); NERC, The Natural History Museum, the Royal Society for the Protection of Birds and The Wildlife Trusts.

10.1.3 The aim of the European Environment Agency's European Information Observation Network (EIONET) is to provide, *"Community and Member States with objective, reliable and comparable information at a European level enabling them to take requisite measures to protect the environment, to assess the results of such measures and to ensure that the public is properly informed about the state of the environment"* (Article 1 of Regulation 1210/90). By ensuring a two way flow of consistent and reliable information we will be able to improve our capability to set the state of the UK's environmental resources in a much wider context.

10.1.4 The Convention's own "Clearing House Mechanism" will provide a route through which technical and scientific co-operation between the UK and other parties, within the scope of the Convention can be promoted, and to provide a mechanism for providing access to information held within the UK. The mechanism chosen for the Clearing House will be a World Wide Web service which will provide an index to sources of UK information, expertise, and services relevant to the scope of the Convention. UK organisations will be encouraged to identify relevant information and to make this available on their own WWW services linked to the Clearing House Mechanism index. Information provision will be voluntary, no organisations will be required to generate information for the Clearing House and only information that is publicly available will be indexed. The JNCC is the UK focal point for the clearing house mechanism.

10.2 Case studies on national experience (both good and bad) in implementation of the CBD (concentrating on those that would be of value to other Parties)

The United Kingdom has had a varied experience in implementing the CBD. Implementation is taking place at a number of levels and involves participants from a wide range of Government, public, voluntary, business and industrial sectors. The range of initiatives which are underway cannot be given justice in this report, however, a

sample have been described below to illustrate some of the main types of approach adopted in the UK.

10.2.1 Action plans for species and habitats

The UK has had a legislative framework for many years which is designed to protect both habitats and species with a variety of additional schemes being run to maintain and promote recovery. The concept of targeted action is therefore, not new in the UK, however, what is new is:

- the scale of activity with over 116 species and 14 habitat action plans currently being implemented and a further 320 species and 24 habitats being prepared; the active involvement;
- the active involvement in biodiversity at a local level through local biodiversity action plans under the umbrella of Local Agenda 21; and
- the bringing together of a partnerships from a range of key sectors to both draw up and implement the plans.

The UK has also established an information system, known as the UK System for Ranking Biodiversity. The system is based on the following principles:

- Regular review of status to which anyone can contribute (though much information will continue to come from schemes run by the partners).
- Validation undertaken by specialist Review Panels responsible for particular taxonomic groups.
- Agreement on status between partner organisations.
- Status and other information stored in a database (BURD), linked to other species databases to allow variety of outputs.

Most importantly the system provides a method for evaluating conservation concern over threatened species which is shared between Government, the statutory conservation agencies and the voluntary sector. Such a common assessment of concern can be used to inform policy decisions which are jointly shared, such as priorities under the UK Biodiversity Action Plan or individual organisational priorities for research and survey. The system will be extended to support conservation assessments of habitats during its next phase of development.

10.2.2. Enhancing measures to promote biodiversity in the wider countryside

The UK is fortunate in having a number of schemes which integrate together land management, recreational activities or business with the conservation of biodiversity. Such integration is essential if the aims of the CBD are to be realised.

Tir Cymen

In 1992 the European Community introduced a new ‘Agri-environment regulation’ which required Member States to introduce a programme of schemes to encourage

environmentally friendly farming. Tir Cymen is a countryside stewardship scheme developed and launched in 1992 by the Countryside Council for Wales as part of the agri-environment programme for Wales under EC Regulation 2078/92. The objective of Tir Cymen is to combine, on a whole farm basis, good farming practice with the conservation of existing semi-natural habitats. Habitat improvement and expansion, landscape conservation and the protection of archaeological features are also undertaken, where possible. Opportunities for the public to enjoy the countryside and coast are also promoted. A total of 82,377 hectares of land on 898 farms is now covered by the 10 year Tir Cymen management agreements. The environmental gains from Tir Cymen are also being assessed with 140 farms monitored to determine the effects of the scheme on landscape and wildlife. Ecological improvements detected include evidence for reduced grazing pressure on heather moorland; an increase in the dwarf shrubs characteristic of moorland; and replacement or restoration of traditional boundary features. Improvements in the public rights of way network on farms participating in the Tir Cymen scheme have also occurred and maps showing the access paths are available at local tourist offices, libraries and other outlets. Signs have also been erected on 'permissive' paths.

TIBRE

The Targeted Inputs for a Better Rural Environment (TIBRE) project, established by Scottish Natural Heritage in June 1993, is designed to enable farmers to contribute to the environmental sustainability of Scottish agriculture while at the same time continuing to contribute to its agricultural sustainability through the uptake of new technology. The project aims to reduce environmental impacts on productive areas of farms and to minimise the impact on adjacent wildlife habitats; to encourage commercial companies to speed up the development of new technology with improved environmental performance and to influence policy to foster appropriate technological innovation. TIBRE is not directly concerned with managing the environment by replacing agricultural activity with habitat management for wildlife. Instead it aims to create conditions in the countryside where wildlife and farming co-exist. Since its inception an appraisal of relevant technological developments has been undertaken. The appraisal looked at, in particular, products which are on the market, soon to be available or were in their early stages of research and development in the areas of chemical technology, biotechnology, information technology and agricultural engineering. A technology assessment of the products identified during the appraisal stage has also been undertaken. Products were considered in terms of potential benefits to habitats and wildlife as a result of reductions in toxins; substitution of safer alternatives; protection of ground and surface waters and protection of the soil. Farmers could be encouraged to adopt technologies such as sensors on spraying equipment that detect weed-free areas where herbicides are not needed or they might use data from satellites to pinpoint parts of their farms where fertilisers are not required. It is anticipated that the focus on products and on collaboration with industry will also lead to a situation where there are commercial incentives to promote the TIBRE approach. The next phase of TIBRE will deal with the technology of livestock and dairy systems and grassland production. Many products also require further research and

development before they can be made commercially available.

Coed Cymru

Awareness raising, through the provision of advice and training, is one of the key issues which needs to be addressed through the implementation of the UK Biodiversity Action Plan. Coed Cymru, an all Wales initiative launched in 1985, sets out to raise farmers' awareness of broad-leaved woodland management issues. The project is spearheaded by about 16 locally based project officers who provide impartial advice and training, and promotes co-operation between, woodland owners, community groups and hardwood users with the intention of re-establishing traditions of woodland husbandry and local timber use in Wales. Since its inception some 3000 woodland management and tree planting schemes have been instigated and many of these are community-based projects. Through Coed Cymru the partner organisations are also actively promoting the use of local hardwoods to re-establish and ensure that broad-leaved woodlands have a firm economic base to safeguard their continued management. As a result of this awareness raising all of the County Councils in Wales, the National Parks and many other bodies in the public and private sector now specify Welsh hardwoods in countryside and building projects. In fact a survey undertaken in May 1996 of wood using businesses co-operating with Coed Cymru showed that 143 manufacturing businesses were supporting 241 full-time equivalent jobs through the use of Welsh hardwoods.

Habitat restoration project

Many of the UK's threatened habitats and species are not confined to a few sites or special reserves but are found across the wider countryside. Over the last century, many of these have declined significantly as a result of the fragmentation and isolation of habitats. A Habitat Restoration Project has been initiated in England in an attempt to reverse this process of fragmentation. The project is based currently on four trial areas, each of 100 km square in extent. Each has an appointed project officer who, with local conservation groups, is developing a restoration plan for their area. Project officers provide the relevant local land owners with advice on the range of existing Environmental Land Management Schemes that are available to them, and how they may be used to promote the habitat restoration desired. The project will make a significant contribution to national targets in the UK Biodiversity Action Plan at each of the trial areas and will also provide useful guidance on how existing management schemes can be applied nationally to promote the delivery of action plan targets, and how these schemes could be modified or improved to lead to a greater uptake or efficiency in their results.

Estuaries initiative

With the support of the UK Government, English Nature, the statutory natural conservation agency for England, launched an Estuaries Initiative in 1992. Its objective was to achieve a widely shared understanding of the value of England's estuaries and of the need for sustainable management through the development of integrated management plan. English Nature's role in estuary management plans was to act as facilitator through the provision of financial assistance (over ,13 million since 1992) and advice through reports, workshops for those preparing plans, liaison meetings with key partners and through participation in estuary projects.

To date, 37 estuary management plans have been started covering 40 estuaries. Of these, 30 plans have reached the stage of at least an internal draft and have started to be implemented.

In 1995, a review of progress on estuary management plans was carried out. It was found that partners in estuary projects participated for many reasons - because they were following planning guidance, as part of their statutory duties or even to protect their activities from increasing regulation and control. Feedback indicates that although people participated for different reasons, they were nearly all getting more out of estuary projects than they had initially expected. As the estuary projects progressed, it became clear that they were as much about bringing together all those who use and manage estuaries as they are about preparing management plans. The process involved in preparing a plan is as important as the final document, as when conflict resolution and consensus building52 between groups, often with different agendas, facilitates taking a wider and longer term view.

10.2.3 Making information available

The National Biodiversity Network (NBN) is a new initiative that aims to add value and importance to records by making them accessible. The initiative is supported by both statutory and voluntary organisations. A consortium comprising the JNCC; the National Federation for Biological Recording; Natural Environmental Research Council; The Natural History Museum; Royal Society for the Protection of Birds and The Wildlife Trusts has been established to lead the project. The NBN should have a powerful influence on how we interact with our natural environment by allowing decisions at a local and national level to be based on accurate and up to date information. The importance of co-ordinating information on a national basis has been demonstrated by a number of sectors, however, in conserving and promoting the wildlife heritage there are few equivalent mechanisms in place. Once fully developed the NBN will have four components. The first of these is 'partnership'. This will be open to organisations who use or collect information on the UK's habitats and species to agreed standards and who can identify opportunities for improving the quality or accessibility of information. The network will be supported by 'custodians', both local and national organisations, who will provide a data management service thereby ensuring that new data is brought into the network, that usage is within the terms set for the data and by promoting access to the available information. An agreed 'framework' of standards will provide the third component of the network. The standards will allow parties to exchange and provide access to information on our natural heritage without copyright being infringed or information on sensitive areas being accidentally released. The standards will also cover different levels of access to meet the needs of different types of user with free and chargeable levels as appropriate. Furthermore the standards will provide guidance to a range of sectors and individuals on how to organize the collection of data so that its use can be maximized and its power for influencing decisions increased. Finally the NBN is an electronic network which will link databases within the partnership allowing access to a wide range of information on the UK's wildlife within the framework of the standards.

One of the first steps in the establishment of the NBN is to create a network of Local

Record Centres that will hold data from a wide range of sources, including experts, amateur naturalists and from public participation in surveys. Three new pilot record centres are being set up in Great Britain to develop models of best practice in ensuring that records are received; stored in a standard format and are readily accessible to a number of sectors through electronic platforms such as the Internet. In Northern Ireland, as in other parts of the UK, there is already a well established local records centre. The Centre in Northern Ireland is known as the Centre for Environmental Data and Recording (CEDaR) and was established by the Ulster Museum in 1995 with grant-aid from EHS. The main objectives of CEDaR are to store information related to the geology and distribution of plants and animals within Northern Ireland and the surrounding coastal waters; making these data available and establishing working relationships with the main environmental recording centres. The establishment of CEDaR has also presented an opportunity to co-ordinate the computerisation of environmental data related to Northern Ireland. The three new pilot centres established under the NBN will also build on the experience gained by these established centres.

10.2.4. Incorporation of biodiversity concerns into policies and programmes

There is general acceptance of biodiversity, both within Government and outside, as a re-presentation or re-packaging of traditional nature conservation work, albeit on a wider scale. But there is less willingness to see biodiversity as a guiding principle in policy and decision making outside this arena, so that it is written into, for example, the operating rules of expenditure programmes and grant-giving regimes beyond the environmental sphere.

To date, the British Virgin Islands (BVI), the Cayman Islands, Gibraltar, Jersey and St Helena and its Dependencies have been included in the UK's ratification of the Biodiversity Convention. Their Governments have taken a number of steps to protect the biodiversity in their care.

British Virgin Islands

The BVI Government is moving towards comprehensive environmental legislation. In August 1995 the Chief Minister's office sponsored a meeting to address institutional building, environmental legislation, methodologies and integrated planning issues for sustainable development. It was agreed that there is a need to move towards formulating effective environmental legislation for the sustainable development of the BVI.

The Government of the BVI has in place the technology to develop biodiversity databases as required by the Convention. Limited surveys of plants and animals have been carried out in recent years and a current main priority for biodiversity work in the BVI is to formulate a biodiversity action plan.

The BVI Government has taken steps to address the wastewater and water quality situation at Cane Garden Bay, Tortola. A new sewerage treatment plant is expected to be in operation by March 1998. Consideration is now being given to the collection and treatment of wastewater discharges in the densely populated areas of Road Town, East End/Long Look and Virgin Gorda.

During 1998 the BVI Government is very likely to declare the Western Salt Ponds of Anegada as the first Ramsar site in the BVI. It will help to conserve a 1,071 ha saltpond, home to the endemic Anegada Rock Iguana (*Iguana pinguis*) and the reintroduced Caribbean Flamingo bird (*Phoenicopterus ruber ruber*). More candidate sites including Beef Island and Paraquita Bay will also be considered in 1998.

The BVI Government is currently tackling the conservation and trade in the Queen Conch (*Stombus gigas*) through the CITES policies and its Fisheries Act 1997.

In addition to the Convention on Biological Diversity, the BVI are included in the UK's ratification of the following relevant international conventions:

- Bonn Convention on Migratory Species of Wild Animals
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Ramsar Convention on Wetlands of International Importance
- The Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region.

In August 1997 the new Fisheries Act 1997, based on the principles of the UN Law of the Sea,

was passed by the Legislative Council. The BVI Government is also included in the FAO Agreement to Promote Compliance with International Conservation and Management, as well as the UN Agreement on the Conservation and Management of Straddling Fish Stocks.

Cayman Islands

Approximately 5.52% of the land area of the three islands is now protected. This includes 342 acres protected as Animal Sanctuaries and approximately 1,619 acres of National Trust properties.

An extensive system of marine protected areas has been in place since 1986. Programmes to monitor components of marine biodiversity include a comprehensive coral reef monitoring programme and annual assessment of both the status of the adult shallow water queen conch (S*trombas gigus*) populations and the artisinal Nassau grouper (*Epinephelus striatus*) fishery. Mangrove and seagrass monitoring sites have also been established.

A number of the saline coastal ponds are protected as Animal Sanctuaries under the Animals Law (1976) and Regulations: Colliers Pond and Meagre Bay Pond on Grand Cayman; Saltwater Pond on Cayman Brac; and the Booby Pond on Little Cayman. The Booby Pond (home to one of the largest breeding colonies of red-footed boobies (*sula sula*) in the western hemisphere) has also been designated as a wetland of international importance under the Ramsar Convention and is now known as the Booby Pond Nature Reserve. The total area of the Reserve is 202 acres (for pond and rookery). In addition, the Environmental Zone of the Marine Parks (which include 1,600 acres of the environmentally critical interface between Grand Cayman's Central Mangrove Wetland and Little Sound) plus an additional parcel of Crown Land has been approved for designation as an Animal Sanctuary. Designation of Little Sound as a Ramsar site is being considered by the Cayman Government.

Single species conservation programmes taking place in the terrestrial environment include the National Trust's captive breeding programme for the endangered Grand Cayman Blue iguana (*Cyclura nubila lewisi*), and *ex-situ* conservation programmes for the threatened endemic bromeliad (*Hohenbergia caymanensis)* and the endemic *Pisonia margareti* at the Botanic Park. The Trust is also currently funding a study on the Grand Cayman population of West Indian Whistling Duck (*Dendrocygna arborea)* in order to determine their habitat requirements and nutritional needs. The Trust maintains an extensive Herbarium of native flora and is developing an Insectarium.

In 1995/96 a biological assessment of saline coastal ponds was carried out with UK Government funding from the Foreign and Commonwealth Office (FCO) to provide information needed in management planning for the Ramsar site on Little Cayman and other protected ponds on Grand Cayman and Cayman Brac. The study has helped to provide a basis for advice to the Cayman Islands Government on priorities for future conservation measures, including designation of new Ramsar sites.

In 1998 a project will be carried out to clarify and assess the status of threatened nesting sea turtle populations in Little Cayman waters and make recommendations for the development of

management strategies to ensure their protection. Data will be collected to identify, quantify and map the location of nesting sites of the Hawksbill (*Eretmochelys imbricata*), Green (*Chelonia mydas*) and Loggerhead (*Caretta caretta*) turtles.

In addition to the Convention on Biological Diversity, the Cayman Islands are included in the UK's ratification of the following relevant international conventions:

- Bonn Convention on Migratory Species of Wild Animals
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Ramsar Convention on Wetlands of International Importance.
- The Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region.

Gibraltar

Gibraltar is ecologically significant and sensitive. Its significance stems from its location on a major migration route, but it also has a very substantial flora for so small an area as well as important marine biological assets. Its sensitivity is in part because of its small area, with a high human population density, together with its vulnerability to environmental damage in neighbouring sea and land areas.

Much sound scientifically-based work has been carried out in Gibraltar over a number of years. It has a good, but far from comprehensive database. It has good legislation in place to protect the environment, most notably the Nature Protection Ordinance introduced in 1991. It is well protected and managed. In addition, as a territory in the European Union, Gibraltar implements the EU Habitats Directive through the Nature Protection Ordinance (Amendment) Regulations 1995.

Gibraltar is also fortunate in having excellent human resources to back up the conservation efforts. A partnership exists between the Government and the principal Non-Governmental Organisation, the Gibraltar Ornithological and Natural History Society who provide expert advice on a wide range of environmental issues and has prepared a report on maintaining the biodiversity of Gibraltar. The Society monitors migration and other movements of birds and other animals, including marine mammals. It is involved in re-establishing populations of species lost to Gibraltar such as the Red Fox (*Vulpes vulpes*) and the Gibraltar Campion (*Silena tomentosa*), and has projects in preparation to eliminate exotic invasive plant and animal species.

A recent project aimed at dolphin research and conservation activities, following evidence that dolphins were being exploited for their fins and tail flukes, led to a long term monitoring project on the welfare and distribution of dolphins in Gibraltar waters.

Recent completion of a project to carry out an extensive survey of bat populations in Gibraltar and to increase protection to known and former bat roosts, resulted in the implementation, in Gibraltar, of the UK's commitments under the European Bat Conservation Strategy and contributed to the implementation of the European Habitats Directive.

In addition to the Convention on Biological Diversity, Gibraltar has been included in the UK's ratification of the following relevant international conventions:

- Bonn Convention on Migratory Species of Wild Animals (including the Agreement on the Conservation of Bats in Europe)
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Ramsar Convention on Wetlands of International Importance.

Gibraltar also falls within the geographical scope of the African-Eurasian Migratory Waterbird Agreement (AEWA) and will be included in the UK's ratification of that agreement.

St Helena and Dependencies (Ascension Island, Tristan da Cunha)

St Helena

Significant steps forward in environmental legislation have been taken with the passing of the Endangered Endemic and Indigenous Species Protection Ordinance 1996 and the Bird Protection Ordinance 1996. The St Helena Government have accepted the recommendation to adopt a Sustainable Environment and Development Strategy (SEDS) for St Helena and an Advisory Committee on the Environment (ACE) has been established to integrate conservation and the environment into national decision making.

In 1996, Diana's Peak on St Helena was formally established as a National Park. The park, which covers 63 hectares, contains the last remaining fragments of native tree fern thicket. The park is being managed according to the Peaks Management Plan, 1996-2000, for the control of alien plant species and restoration of the endemic habitat.

A marine ecology consultancy was commissioned in 1996. Key recommendations from the consultancy were for improved database of fisheries, in particular the grouper fishery, and the development of the human and computer support resources.

FCO funding in 1996 helped to restore the last fragment of woodland of the native Gumwoods (*Commidendrum robustum*) and St Helena's national tree, which is recognised as an endangered species (IUCN).

On single species conservation, seed orchards have been established for 11 species in 1996/97.

From July 1997 the World Wide Fund for Nature (WWF) is funding a two year programme for the conservation of the five rarest plant species; the St Helena Olive (*Nesiota elliptica*), the St Helena Rosemary (*Phylica polifolia*), the large Bellflower (*Wahlenbergia linifolia*), the Bastard Gumwood (*Commidendrum rotundiffolium*) and the She Cabbage (*Lachanodes arborea*).

The Royal Society for the Protection of Birds (RSPB) is funding a seabird monitoring programme. The programme involves a census of seabirds on the offshore islands and one

mainland site to determine current status of seabird communities.

A member of the island's Environmental Conservation Section attended the Royal Botanic Gardens Kew Conservation Techniques Course in 1997.

In 1997, St Helena's conservation nursery facilities have been expanded with the help of FCO funding to support the in-situ and ex-situ conservation activities of the Environmental Conservation Section of the island's Agriculture and Forestry Department.

Ascension Island

Various local Ordinances protect the flora, fauna, geology and architectural heritage. In 1997 two additional SSSI nature reserves were established.

Ascension Island is a member of the South Atlantic Islands Plant Specialist Group, established under the auspices of the IUCN's Species Survival Commission.

There is a regular seabird assessment and monitoring programme by the RSPB, the Army Ornithological Society and private individuals.

Work is being undertaken to control the spread of the invasive Mexican Thorn Tree (*Prosopsis juliflora* and *Prosopsis glandulosa*) which is threatening the safest egg-laying sites in the world for the endangered Green Turtle (*Chelonia mydas*).

A Conservation Management Plan for Ascension Island is due to be completed shortly.

A feasibility study for the eradication of feral rats and cats from Ascension Island was carried out in 1995 with funding from the FCO and WWF. The UK Government and RSPB are currently working closely together to secure EC funding for the implementation phase of the project.

Tristan da Cunha

The Islands of Inaccessible and Gough, accounting for some 40% of the land area of the territory, have been declared nature reserves. Human access to both islands is controlled and very limited.

Following the completion of a management plan in 1993, Gough Island was declared a World Heritage Site in 1995. Annual inspections are carried out by environmental experts. Populations subject to continuing research and monitoring include Subantarctic Fur Seal (*Artocephalus tropicalis*) and Yellownosed Albatross (*Diomedea chlororhynchos*).

In addition to the Convention on Biological Diversity, St Helena and Dependencies have been included in the UK's ratification of the following international conventions:

- Bonn Convention on Migratory Species of Wild Animals
- The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- The Ramsar Convention on Wetlands of International Importance.

St Helena (but not Ascension Island or Tristan da Cunha) also falls within the geographical scope of the African-Eurasian Migratory Waterbird Agreement (AEWA) and will be included in the UK's ratification of that Agreement.

ACTION IN TERRITORIES NOT YET INCLUDED IN THE UK's RATIFICATION OF THE CONVENTION

Anguilla

The Anguilla National Trust has recently undertaken a project to conduct an iguana distribution study and population estimate for the Lesser Antillean Iguana (*Iguana delicatissima).* The development of an overall Species Conservation Strategy is to be augmented by strategies for both environmental education and general development for the Anguilla National Trust to enhance its ability to undertake biodiversity conservation activities, particularly related to iguanas.

The National Trust has started to compile a National Resource Inventory.

The Environmental Advisory Council (EAC) has also undertaken a project with regards to the preservation of endemic plants. There are a number of species of these endemic plants that are only found in one area on Anguilla.

Bermuda

The Planning Act and local development plans afford protection to woodlands, beaches, caves, mangroves, marshlands, arable land, nature reserves and other wildlife habitats.

132 acres of Nature Reserves are designated and protected under the Bermuda National Parks Act. These are "areas of environmental significance with ecological, biological, geological or scientific value".

A total of 846 acres of land are designated under Bermuda National Parks Act, including nature reserves, public parkland and protected woodlands.

A project to enhance the breeding of the endangered Bermuda Cahow (*Pterodroma Cahow*) has now been on-going for some years and has been successful in ensuring survival of this species.

Falkland Islands

Revision of environmental legislation remains a priority. New nature conservation legislation is currently under consideration for adoption during 1998.

An FCO-funded project is underway to provide detailed documentation for sites suitable for Ramsar designation. As a result, it is hoped that designation of a number of Ramsar Sites will take place during 1998.

Pitcairn Islands

A draft management plan has been produced for the environment on Henderson Island in the Pitcairn Islands. This has been approved by the Island Council and funding is currently being sought for finalisation.

A botanical survey has been undertaken on Pitcairn Island to provide complete plant and arthropod inventories and fully describe the vegetation communities of the island.

An eradication programme to remove rats from three islands in the Pitcairn Group is on-going.

British Indian Ocean Territory (BIOT)

Wildlife in the BIOT is protected principally by the Protection and Preservation of Wildlife Ordinance 1970, as from time to time amended, and by various regulations made under that Ordinance.

A Conservation Policy Statement has been produced for the BIOT which details current and proposed conservation activities.

Turks and Caicos Islands (TCI)

Conservation legislation in the TCI takes the form of the National Parks Order 1992 and the National Parks Regulations 1992 both of which govern the use of protected areas.

Recently, the Government of the TCI and the British Government have committed themselves to pursuing financial independence for the national parks system under a Coastal Resource Management Project (CRMP). Specifically, the project will provide for 36 months of long term technical cooperation, the development of environmental awareness programmes, community based management programmes and scientific monitoring programmes, as well as the construction of an interpretative centre. The joint venture will be supported by $1.5 million in capital funds from the British Government, through the Department for International Development; and to ensure project sustainability, the TCIG has agreed to an annual recurrent budget of some $400,000 from the introduction of user fees.

A number of conservation projects have been carried out recently including: a survey of the rock iguana population in the Islands which revealed the largest population of the species in the Caribbean; a feral cat trapping programme to ensure the long term sustainability of the iguana population and benefits to other native wildlife; the establishment and maintenance of dive trails aimed at protecting important reef systems. FCO funding has been used for all of these projects.

Montserrat

Montserrat was selected as the site for a pilot project to survey the island's biodiversity and develop the capacity to monitor the status of key ecosystems to assist in the management of the island's resources, and with a view to successful implementation of the Convention on Biological Diversity. The FCO contributed £100,000 towards this project. The resulting methodology could

be used to promote similar initiatives in other Caribbean Dependent Territories.

Completion of this work has had to be postponed due to the on-going and severe volcanic activity on the island. However, the first nine months of the project have provided some useful data and, in particular, lessons and experience that can be incorporated into future work on Montserrat or on other Caribbean islands. It is hoped that the project will be continued when it becomes feasible to carry out work on the island again.