

Please provide the following details on the origin of this report.

Contracting Party:	United Kingdom
<i>National Focal Point</i>	
Full name of the institution:	Department of Environment, Food and Rural Affairs
Name and title of contact officer:	Ms Glenys Parry
Mailing address:	4/C2 Ashdown House 123 Victoria Street London SW1E 6DE
Telephone:	+44 207 082 8446
Fax:	+44 207 082 8436
E- mail:	Glenys.Parry@defra.gsi.gov.uk
<i>Contact officer for this report (if different)</i>	
Name and title of contact officer:	Alistair Taylor
Mailing address:	Science Directorate The Natural History Museum Cromwell Road London SW7 5BD
Telephone:	44 207 082 8447
Fax:	44 207 082 8436
E- mail:	Biodiversity@nhm.ac.uk
<i>Submission</i>	
Signature of officer responsible for submitting national report:	Sarah Moon
Date of submission:	27 September 2004

Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report.

An initial draft of the report was created by the GTI National Focal Point (Natural History Museum) and circulated to a number of key UK stakeholders. These comprised the following institutions;

Department of Environment Food and Rural Affairs

Museums/Herbaria

Royal Botanic Garden Kew

Royal Botanic Gardens Edinburgh

National Museums and Galleries of Wales

Research Centre

Centre for Ecology and Hydrology

Government Department and Agencies

English Nature

Scottish Natural Heritage

Countryside Council for Wales

Joint Nature Conservation Committee

Department for International Development

Amendments and additions were made and a final draft circulated for further comment. The final version was then produced and submitted to the CBD Secretariat.

**REPORT ON IMPLEMENTATION OF PROGRAMME OF WORK FOR THE
GLOBAL TAXONOMY INITIATIVE**

**Programme of Work for the Global Taxonomy Initiative
Annex to Decision VI/8**

Operational Objective 1. Assess taxonomic needs and capacities at national, regional and global levels for the implementation of the Convention

1. Has your country undertaken any taxonomic needs assessments and identified priorities in this regard?	
a) no (please specify the reasons)	
b) no, but assessment is under way	
c) yes, some needs assessments made (please provide details)	X
d) yes, comprehensive assessments made (please provide details)	
Further comments on country-based taxonomic needs assessments and identification of priorities	
<p>The UK Systematics Forum carried out an assessment of the needs of systematic biology in the UK, based on the database of systematic expertise which they had developed, in 1998. This assessment was included in the document, "the web of life, A STRATEGY FOR SYSTEMATIC BIOLOGY IN THE UNITED KINGDOM", available online at http://www.nhm.ac.uk/hosted_sites/uksf/web_of_life/index.htm</p> <p>In 2002 the House of Lords Select Committee on Science and Technology produced a report on the state of systematic biology titles, "What on Earth, The Threat to the Science Underpinning Conservation." This report made a number of recommendations relating to financial support, collaboration and priority setting for the systematic biology community in the UK. Information on the report and on the Government's response to it is available online at http://www.publications.parliament.uk/pa/ld200203/ldselect/ldsctech/130/13001.htm</p> <p>The 2002 Biodiversity Action Plan Reporting Round highlighted taxonomic information and services as a major limiting factor to biodiversity conservation activities in the UK. Among the most significant limiting factors were poorly understood autecology and a lack of baseline survey data. More information is available at http://www.ukbap.org.uk/2002OnlineReport/mainframe.htm</p> <p>Currently the UK's National Focal Point is conducting a national needs assessment designed to identify the needs of the biodiversity conservation community for taxonomic services and information. This will be used to inform the strategic priorities of the UK's taxonomic institutions in order to best serve biodiversity conservation and implementation of the CBD. The UK's taxonomic capabilities have been identified in part through the Register of UK Taxonomic Expertise developed by the National Focal Point. This is available online at http://www.nhm.ac.uk/science/biodiversity/gtiregister.htm</p>	

2. Has your country worked with other countries in the region to undertake regional taxonomic needs assessments and identify priorities in this regard?	
a) no (please specify the reasons)	
b) no, but some collaborative projects are being considered or planned	
c) yes, some activities undertaken (please provide details)	X
d) yes, many activities undertaken (please provide details)	
Further comments on regional taxonomic needs assessment and identification of priorities	
<p>The UK is a partner in the European Natural History Specimen Information Network (ENHSIN). A user needs assessment was developed as part of this project in order to assess the requirements for the design and content of an integrated network of databases on natural history specimens. This assessment will be used to prioritise between the various types of data currently held by the various members of the network, so that the data that is most urgently needed is made available first. For more information please visit http://www.nhm.ac.uk/science/rco/enhsin/</p>	
3. Is your country involved in any activities as part of a global taxonomic needs assessment?	
a) no	X
b) yes (please provide details)	
Further comments on the involvement in the activities for the global taxonomic needs assessment	
<p>The UK's taxonomic institutions are responsible for collections that are of global importance for biodiversity conservation. The UK's expertise has been instrumental in the development of a number of global taxonomic initiatives, including the Global Biodiversity Information Facility (GBIF).</p> <p>The work of UK taxonomists is therefore contributing indirectly to a global needs assessment e.g. by identifying groups for which authoritative information is unavailable. However no direct request for UK input to a Global needs assessment has yet been received.</p> <p>The UK is currently carrying out a national taxonomic needs assessment which is intended to serve as a model to assist other countries in carrying out their own needs assessments.</p>	
4. Is your country undertaking any activities of public education and awareness to promote the implementation of the programme of work for the GTI?	
a) no	
b) yes, some programmes developed and some activities undertaken (please provide details)	X
c) yes, comprehensive programmes developed and many activities undertaken (please provide details)	
Further comments on public education and awareness programmes and activities	

The UK's natural history collections play a leading role in raising public awareness about the natural world, and about the importance of taxonomy and systematics for helping us understand and conserve biological diversity. Activities underway at many of these institutions include public exhibitions, broadcast events, online information, publications and articles in the general media.

The National Focal Point has developed a number of web pages providing information on the GTI and on UK organisations involved in taxonomic research and related biodiversity conservation activities. Information available includes a Register of UK Taxonomists. For more information please see

<http://www.nhm.ac.uk/science/biodiversity>

In 2003 the Natural History Museum opened the newly constructed Darwin Centre on its site in South Kensington. This centre has been designed to not only to house the Museum's collection of zoological specimens preserved in spirit, but also to provide a dedicated presentation suite where Museum scientists can present their work to the public, face to face. Many of these presentation are broadcast live over the internet in order to make them as widely accessible as possible. For more information please visit

<http://www.nhm.ac.uk/darwincentre/>

Operational objective 2. Provide focus to help build and maintain the systems and infrastructure needed to obtain, collate and curate the biological specimens that are the basis for taxonomic knowledge

5. Is your country working to strengthen global and regional capacity building to support access to and generation of taxonomic information ¹ ?	
a) no (please specify the reasons)	
b) no, but some programmes under development	
c) yes, limited capacity building (please provide details)	
d) yes, significant capacity building (please provide details)	X
Further comments on global and regional capacity building to support access to and generation of taxonomic information	
<p>The Natural History Museum, Royal Botanic Gardens, Kew, and Royal Botanic Gardens, Edinburgh, are among the 20 partner institutions involved in the SYNTHESYS project, which has been established with the aim of creating an integrated European infrastructure for researchers in the natural sciences. SYNTHESYS Project funding enables scientists to undertake short visits to one of the 20 partner institutions for the purposes of their research. More information is available online at http://www.synthesys.info/</p> <p>The UK's Darwin Initiative grants programme aims to promote biodiversity conservation and sustainable use of resources in less developed countries. The Initiative is funded and administered by the UK Department for Environment, Food and Rural Affairs, (Defra). A significant number of the projects that have been funded by the Darwin Initiative include elements of taxonomic capacity building for both scientists and other stakeholders in developing countries. More information is available online at http://www.darwin.gov.uk/</p> <p>Through a Twinning Agreement with the Kunming Institute of Botany of the Chinese Academy of Sciences, the Royal Botanic Gardens Edinburgh (RBGE) is collaborating to create a new Botanic Garden and Field Station. This project has received significant sponsorship from British Business working in China and includes considerable capacity building elements. The new 'Jade Dragon Field Station' is operational and work is in progress to create the associated botanic garden. More information is available via http://www.rbge.org.uk/rbge/web/news/lijiang.jsp</p> <p>The UK's Natural History Collections play an active role in hosting researchers from other countries for the purposes of carrying out research on collections held in the UK. The Natural History Museum alone may host over 9000 visiting scientists for over 15,000 visitor days in any one year. The Royal Botanic Gardens Kew (RBG Kew) hosts around 24,000 visits to behind-the-scenes collections per annum.</p> <p>RBG Kew, the NHM and other UK taxonomic institutions have developed collaborative projects for repatriation of information and images of type and historic specimens, involving training personnel from source countries and developing information services such as 'virtual herbaria' to enrich national and global taxonomic research capacity.</p> <p>RBG Kew runs a major capacity building programme including a series of International Diploma courses focusing on Herbarium Techniques and Plant Conservation Techniques (see http://www.kew.org/education/highered.html/). As well as courses run at Kew which bring together people from all over the world, courses are also customised for a particular region and hosted there by one of our overseas partners eg China, East Africa.</p>	

¹ Responses to question 5 are expected to focus on, but not limited to (a) human capacity building; (b) infrastructure capacity building.

6. Is your country working with other countries to create and/or strengthen the networks for regional cooperation in taxonomy?	
a) no	
b) no, but consultation is under way	
c) no, but some plans and programmes are under development	
d) yes, some activities undertaken for this purpose (please provide details)	X
e) yes, comprehensive activities undertaken for this purpose (please provide details)	
Further comments on strengthening of existing networks for regional cooperation in taxonomy	
<p>The UK is a partner in the European Natural History Specimen Information Network (ENHSIN). For more information please visit http://www.nhm.ac.uk/science/rco/enhsin/</p> <p>The Natural History Museum, Royal Botanic Gardens, Kew, and Royal Botanic Gardens, Edinburgh, are among the 20 partner institutions involved in the SYNTHESYS project. More information on the SYNTHESYS project is available online at http://www.synthesys.info/</p> <p>The UK is host to the Technical Secretariat of BioNET International, the Global Network for Taxonomy. UK taxonomists have contributed information to the list of case studies developed by BioNET, and to the "Plan of Action and Resource Kit for Demand-driven Capacity Building in Taxonomy" developed following the 3rd Global Taxonomy Workshop. For more information see http://www.bionet-intl.org/</p>	

Operational objective 3. Facilitate an improved and effective infrastructure/system for access to taxonomic information, with priority on ensuring that countries of origin gain access to information concerning elements of their biodiversity

7. Is your country involved in the development of a coordinated global taxonomy information system, in particular the infrastructure to access digitized data/information?	
a) no	
b) no, but some plans are being considered	
c) yes, to a limited extent (please provide details)	
d) yes, to a significant extent (please provide details)	X
Further comments on involvement in the development of a coordinated global taxonomy information system	
<p>UK taxonomic institutions have played a leading role in the development of the Global Biodiversity Information Facility (GBIF). The UK has contributed significant expertise (through involvement on GBIF committees) and is a major provider of DATA to GBIF. The UK has implemented a number of GBIF projects to make data available globally.</p> <p>The National Biodiversity Network is working to make data on UK species and habitats widely available for the purposes of UK biodiversity conservation, and for those countries that share fauna and flora with the UK.</p>	

Operational objective 4. Within the major thematic work programmes of the Convention include key taxonomic objectives to generate information needed for decision-making in conservation and sustainable use of biological diversity and its components

8. Has your country made any taxonomic studies and inventories at the national level, which provide a basic assessment of forest biological diversity, in particular in areas under current threat for habitat conversion, or of high conservation value?	
a) no (please provide the reasons)	
b) no, but some programmes are under development	
c) yes, some studies and inventories made (please provide details)	X
d) yes, comprehensive studies and inventories made (please provide details)	
Further comments on taxonomic studies and inventories made for a basic assessment of forest biological diversity	
<p>At the National level six British National Woodland Inventories have been carried out by the FC since 1924, with the last carried out 1995-2000. Reports are available at www.forestry.gov.uk/inventory.</p> <p>Forest Research has also carried out assessments of biodiversity in 54 forest stands representing different planted and semi-natural forest types across the UK (see http://www.forestry.gov.uk/pdf/FCRP004.pdf/\$FILE/FCRP004.pdf) for details</p> <p>Various surveys have been carried out by Forest Enterprise on the State forests to obtain information for the Sub-Compartment Data-Base (SCBD) and related GIS layers.</p> <p>Management plans based on survey work have been prepared for SACs and SSSIs, many ancient semi-natural woods and for publicly owned land. Forest Enterprise has surveyed all the main biodiversity priority sites on FC land.</p> <p>A range of other statutory and non-statutory bodies employ specialists to carry out biological surveys and advise on appropriate management on their lands including woodland, and grants have been introduced for survey of privately owned woodland under the Woodland Grant Schemes.</p> <p>The UK has 'headline indicators' for sustainable development that relate to forest biodiversity (change in woodland breeding bird populations).</p> <p>A set of UK Indicators of Sustainable Forestry has been finalised including a cluster relating to forests and biodiversity. These are; populations of woodland birds, progress towards habitat and species action plan targets, condition of woodland sites of special scientific interest, trends in plant biodiversity and areas of ancient woodland under approved management schemes and open for public access.</p> <p>The Department for International Development (DFID) has examined the role of forest biodiversity in livelihoods and how to link policy and practice (see ISBN 1 899 825 673). DFID's Forestry Research Programme has supported research in a number of relevant areas.</p> <p>Results from DFID's Forest Research Programme projects on habitat indicators and rapid biodiversity assessment have been taken up and are being promoted by United Nations Environment Programme (UNEP) in several developing countries.</p> <p>The Natural History Museum (NHM) has developed a methodology that uses Geographic Information Systems (GIS) to combine data from satellite images with data from vegetation surveys to help foresters in Central America manage and conserve tropical forests. The methodology was piloted in the Maya Mountains of Belize. Similar work is being done by RBG Kew in Cameroon and Madagascar.</p>	

NHM scientists, supported by the UK's Darwin Initiative, have helped produce biodiversity inventories for the Mbaracayu Forest Nature Reserve in Paraguay. The reserve is one of the last intact pieces of Atlantic rainforest in Paraguay, and is an endangered habitat world-wide. The NHM helped build local capacity for producing the inventory; trained local Guaraní and Ache people as parataxonomists to participate in and continue the inventory and to act as a conduit for the communication of information about natural history to local communities in the buffer zone; established a local reference collection in the Science Center at the Mbaracayú Forest Nature Reserve; and developed popular field guides in Spanish and Guaraní of striking organisms in the reserve for use by future ecotourists.

The NHM has led studies in Panama and Ecuador on the germination characteristics of tropical tree species, how long the seeds of different pioneer tree species survive in the soil, and on the spatial and temporal patterns of seed dispersal in comparison with patterns of seed germination. This information has greatly improved our understanding of the constraints on timing of reproduction in tropical forests and the impact of this on tropical forest dynamics, species diversity and the spatial distribution of tropical trees.

The NHM has produced the first ever field guide to the Smaller Moths of South East Asia following many years of collecting, research and identification work in the tropical forests of Malaysia, and Brunei.

The Royal Botanic Gardens Kew produces, in collaboration with partners, tools for identification and monitoring (floras, field guides, conservation checklists), and is actively working to make information in its collections, databases and publications more widely available to taxonomists and conservationists internationally e.g. projects to repatriate information and images of type specimens, and to digitise floras and create web databases. For example see www.kew.org/efloras/

RBGE also works on regional checklists and Floras. The Flora of Nepal is a recent international project coordinated from RBGE.

9. Has your country undertaken any taxonomy-related activities relating to marine and coastal biodiversity, in particular taxonomic work related to identification of ballast water organisms and monitoring health of mangrove systems through their invertebrate fauna?	
a) no	
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken (please provide details)	X
e) yes, many measures undertaken (please provide details)	
Further comments on taxonomy-related activities identified in the programme of work on marine and coastal biodiversity	
<p>The Natural History Museum with Plymouth Marine Laboratory, Kasetsart University, Bangkok and the Ministry of Fisheries, Thailand have implemented a Darwin Initiative funded project to explore the potential of the Internet as a mechanism for exchanging taxonomic information between biodiversity researchers in separate locations. The project concentrated on polychaete worms as a group. Using a series of questionnaires and databases available on the Internet, researchers can now share information on the species in their region and determine whether taxa found by other workers are the same as those they have found. The overall objective is to find ways of maximising taxonomic resources and ensuring that high quality information is as widely available as possible. For more information see http://www.nhm.ac.uk/zoology/taxinf/</p> <p>In recognition of the fact that more needs to be done to protect UK's marine environment, The Review of Marine Nature Conservation was established. The review was led by Defra and supported by a Working Group drawing on a broad range of stakeholder interests from the commercial sector, conservation organisations, recreation, and Government, including the devolved administrations.</p> <p>The Review's Interim Report, produced in March 2001, made a number of recommendations, including the development of strategic goals for marine nature conservation and the commencement of a pilot scheme at regional sea scale to test some of the ideas developed during the course of the Review.</p> <p>The primary purpose of the pilot, being run in the Irish Sea, is to demonstrate the application of new concepts and to examine how far the conservation management needed within the pilot area could be delivered through existing systems. The main concept being tested by the pilot is the application of a new framework for marine nature conservation which includes, as an integral component the identification of those parts of the regional sea ecosystem that are of nature conservation value or importance. The aim is to promote effectively in the public interest the sustainable conservation of marine habitats and species. Findings from the Pilot should contribute significantly to our consideration of how we apply an ecosystem approach to management of the marine environment around the UK. This Irish Sea report has been published by the JNCC and is available on their website;</p> <p>http://www.jncc.gov.uk/marine/irishsea_pilot/pdfs/finalreports_2004/pilot/default.htm</p> <p>The Working Group's report to Government was published in July 2004 and is now available via;</p> <p>http://www.defra.gov.uk/wildlife-countryside/ewd/rmnc/index.htm</p>	

10. Has your country developed taxonomic support for implementing relevant actions identified in the programme of work on dry and sub-humid lands biodiversity, in particular identification of key indicator taxa like lichens?	
a) no (please provide reasons and plans for improvement)	
b) not applicable	
c) no, but some programmes are under development	X
d) yes, some activities undertaken (please provide details)	
e) yes, many activities undertaken (please provide details)	
Further comments on taxonomic support for implementing the programme of work on dry and sub-humid lands biodiversity	
<p>Although the UK is not host to any officially recognised dry and sub-humid lands, the Department for International Development does play an active role in researching the fauna and flora of such areas and their impact on human development.</p> <p>The Millennium Seed Bank Project, run by RBG Kew, is an international collaborative plant conservation initiative to safeguard 24,000 plant species from around the world, with a focus on drylands. It is working with partners to build and make use of taxonomic collections to better identify and locate priority species for conservation. For details see www.kew.org/msbp/index.html.</p>	
11. Has your country developed taxonomic support for implementing relevant actions identified in the programme of work on inland waters biodiversity, in particular regional guides to freshwater fish and invertebrates as an input to ecosystem monitoring for river and lake health?	
a) no	
b) no, but some programmes are under development	
c) yes, some activities undertaken (please provide details)	X
d) yes, many activities undertaken (please provide details)	
Further comments on taxonomic support for the implementation of the programme of work on inland waters biodiversity	
<p>The Environment Agency is responsible for monitoring the quality and ecological status of the UK's freshwater rivers and lakes. EA staff are trained in freshwater macroinvertebrate identification and their skills are accredited by the Natural History Museum.</p> <p>The Natural History Museum has helped train Fly Fishermen to identify the larvae and adult forms of riverflies so that they can assess the quality of the rivers they fish, and submit records of the species that they have observed.</p> <p>The Ponds Conservation Trust was established in 1998 by a consortium of 23 organisations and individuals. Its aim is to provide a national focus for the conservation of ponds. Specifically to deliver practical conservation projects across the UK, increasing public awareness of the problems that ponds face, while encouraging and undertaking pond research. The trust offers pond conservation information and guidance through training courses, publications, lectures, demonstration ponds and its website. The trust also contributes to local, national and European policy debates by providing expertise and advice.</p> <p>More information is available from; www.pondstrust.org.uk</p>	

12. Has your country undertaken any taxonomy-related activities identified in the programme of work on agricultural biodiversity as well as relevant activities identified in the International Pollinator Initiative and the International Soil Biodiversity Initiative?	
a) no	
b) no, but some activities are being planned	
c) yes, some activities undertaken (please provide details)	X
d) yes, comprehensive activities undertaken (please provide details)	
Further comments on taxonomy-related activities for the implementation of the programme of work on agricultural biodiversity	
<p>The Natural History Museum and English Nature are working with the British Bryological Society on a survey of mosses, liverworts and hornworts of arable land. Arable land has a distinctive bryophyte flora, which has often been neglected in the past, with the result that we now have little idea of how its bryophyte flora is changing. BBS volunteers will be involved in this national recording scheme over the next three years.</p> <p>The Centre for Ecology and Hydrology has recently completed a review of the potential effects of seed sowing for habitat re-creation on the conservation of intraspecific biodiversity. This project represents an attempt to compile information on the intraspecific genetic variation, on a species by species basis, of species regularly used for habitat creation, and hence to assess the ecological risks associated with using seed of varying provenance.</p> <p>DEFRA supports awareness raising activities for Agri-Environment Scheme advisers and agreement-holders. These activities include recognition and management requirements, and more is planned under the Higher Level Scheme's (HLS) outcome focus.</p> <p>DEFRA have begun a 'monitoring' project with the Royal Society for the Protection of Birds (RSPB) to resurvey upper Thames tributaries waders. Key to this initiative is an additional project to evaluate the ability of the Volunteer and Farmer Alliance (VFA) to train farmers to recognise waders and to self-assess their success.</p>	
13. Is your country developing any taxonomic support for the implementation of the programme of work on mountain biodiversity, in particular identification of biodiversity components unique to mountain ecosystems?	
a) no	
b) no, but some programmes are under development	
c) yes, limited support (please provide details)	X
d) yes, significant support (please provide details)	
Further comments on taxonomic support for the implementation of the programme of work on mountain biodiversity	
<p>Adequate information on habitats and species is available at a broad scale. Some research has been undertaken on the genetic status and the ecology of mountain species, most notably those in small populations or at the edge of their range, where information has been required to guide management and possible rescue/reintroduction attempts. Examples of plant species included in this research are oblong woodsia <i>Woodsia ilvensis</i>, eyebrights <i>Euphrasia</i> spp., Snowdon lily <i>Lloydia serotina</i> and tufted saxifrage <i>Saxifraga caespitosa</i>. Additionally, the National Trust for Scotland have undertaken pioneering work in the reintroduction of willow scrub to the southern</p>	

slopes of the Lawers range and at its property at Ben Lawers in Perthshire.

The UK Biodiversity Action Plan process has led to a review of status and identified the need for further development of monitoring of key species. A useful reference for this is: Leaper, G. (1999) *Biodiversity of the Cairngorms: an assessment of priority habitats and species*. Cairngorms Partnership.

At the ecosystem level, recent assessments have been made by the Joint Nature Conservation Committee (JNCC) while preparing the submission of candidate Special Areas of Conservation to government (see www.jncc.gov.uk/SACselection).

Some site-specific assessment has been undertaken (e.g. *Biodiversity and conservation*. 1: 179-208 (1992)). However, this is not specific to the Convention. The country conservation agencies of the UK have developed a Common Standards Monitoring programme to report on the status of key interest features on designated sites. This will in time allow assessment of the state of montane (and other) habitats and species across the UK. See www.jncc.gov.uk/csm.

Recent research (Battarbee and Fowler in Thompson, D B A, Price, M, and Galbraith, C A, (Eds) (in review) *Mountains of Northern Europe: conservation, management and initiatives*. The Stationary Office, Edinburgh) points to mountains being amongst the land masses subject to most pollution in the UK. The dynamism of ecological systems and the difficulty in maintaining the status quo in sensitive montane habitats is demonstrated by the study Modelling Natural Resource Responses to Climate Change (MONARCH) commissioned by a consortium of nature conservation organisations in Britain and Ireland. The modelling exercise identifies the potential implications for species and habitats with regard to how their distribution patterns may change in the event of climate change, within four environments: terrestrial; freshwater; coastal and marine. For example, using models to predict future impacts, montane heath - the most sensitive of habitats studied, would potentially see a loss. The potential 'losers' would include mountain ringlet *Erebia epiphron*, stiff sedge *Carex bigelowii*, dwarf willow *Salix herbacea*, and trailing azalea *Loiseleuria procumbens*.

The Joint Nature Conservation Committee (JNCC) held a symposium on the impact of air pollution on ecosystem change in October 2003 (see proceedings at www.jncc.gov.uk/habitats/air_poll/caernarfon). Following on from this JNCC and Defra are undertaking a scoping study (September 2004 - February 2005) into the options of setting up a network to monitor the impacts of air pollution on terrestrial habitats. A consortium of organisations have funded a web based Air Pollution Information System to provide a database on air pollution impacts on ecosystems. See www.apis.ac.uk.

RBG Kew has collaborated on inventories in several biodiverse mountain areas. For example Kew is working with partners from the National Herbarium in Cameroon on developing conservation checklists for the Kupe/Bakossi Mts and Bali/Ngamba forest.

Changes in botanical biodiversity on Montserrat have been surveyed in 2000/01 following the recent volcanic activity.

RBGE is the International Coordinator for the production of the Flora of Nepal. RBGE has also contributed to the development of the Lijiang Botanic Garden and Field Station (located at 3,200m on the Yulong Xue Shan in Yunnan Province).

Having completed The Flora of Bhutan, RBGE is now working closely with the Government of Bhutan on several initiatives (including a Darwin Initiative project).

14. Has your country developed taxonomic support for the implementation of the programme of work on protected areas?	
a) no	
b) no, but some programmes are under development	
c) yes, some programmes in place and are being implemented (please provide details)	X
d) yes, comprehensive programmes are being implemented (please provide details)	
Further comments on taxonomic support provided to the implementation of the programme of work on protected areas	
<p>The UK hosts globally significant natural history collections and is one of the world leaders in expertise for taxonomic research. The UK's taxonomic institutions play a globally important role in biodiversity conservation through, for example, capacity building projects and data repatriation in connection with protected areas networks in developing countries. For example, Project BioMap, is a project lead by the Natural History Museum, the Instituto de Ciencias Naturales (National University of Colombia) and Conservation International (CABS 7 CI- Colombia), which seeks to help identify and prioritise Important Bird Areas (IBA) in Columbia through enhancing biodiversity knowledge and data repatriation. For further information see; www.biomap.net.</p> <p>In the marine environment, work has been undertaken in the UK Marine SACs project. The UK Marine SACs Project was set up to establish management schemes on selected marine Special Areas of Conservation (SACs). Its activities have focused on a selection of twelve marine SACs around the UK and on developing specific areas of knowledge needed for the management and monitoring of European marine sites. For more information see: www.ukmarinesac.org.uk/project-background.htm</p> <p>In September 2001, JNCC published a major review (www.jncc.gov.uk/ukspa) of the UK network of Special Protection Areas (SPAs) under the Directive on the Conservation of Wild Birds (the Birds Directive) (European Council Directive 79/409/EEC).</p> <p>Information to define the boundaries of all marine SPAs is relatively scarce compared with landward sites. However, enough information exists covering the first two categories to enable proposals to be put forward relatively soon for a number of sites. Further survey work to define areas in category (b) is underway. Category (c) is more problematical, as predictable concentrations can only be found at a large scale. For instance a large part of the north-western North Sea is known to hold internationally important concentrations of birds in the early autumn, but the precise location of these birds within this area can vary widely between years. The selection of category (c) SPAs are discussed in more detail in JNCC Report 325 - <i>Natura 2000 in UK Offshore waters</i>, see www.jncc.gov.uk/publications/jncc/325/intro325.htm</p>	

Operational objective 5. Within the work on cross-cutting issues of the Convention include key taxonomic objectives to generate information needed for decision-making in conservation and sustainable use of biological diversity and its components

15. Has your country taken any measures to strengthen capacity for the inventory and classification of biodiversity and its components in the development of a national strategy on access and benefit-sharing?	
a) no	
b) no, but some programmes are under development	
c) yes, some measures taken (please provide details)	X
d) yes, comprehensive measures taken (please provide details)	
Further comments on the measures to strengthen capacity for the inventory and classification of biodiversity and its components in the development of a national strategy on access and benefit-sharing	
<p>The UK's National Biodiversity Network (NBN) has been set up to provide a system that will make the information on UK plant and animal species that is gathered by a wide range of different organisations in the UK available in one place, and in one format. This will facilitate the sharing and exchanging of this information. As well as enhancing access, the NBN is also working to build capacity among the many amateur societies and schemes in the UK that play a leading role in gathering these data. The Natural History Museum, on behalf of the NBN, has carried out a survey of the amateur naturalist community and has identified a number of actions which will have the effect of strengthening capacity within the sector.</p> <p>Fuchsia Research International Botanic Garden, Royal Botanic Gardens Kew, and the Royal Botanic Gardens Edinburgh have endorsed the Principles on Access to Genetic Resources and Benefit-Sharing developed by 28 botanic gardens and herbaria from 21 countries worldwide in a project funded by the Department for International Development. These are non-legally binding principles which institutions are invited to use as a basis for individual institutional policies that reflect the letter and spirit of the CBD.</p> <p>Funded by the Darwin Initiative, RBG Kew has produced a user-friendly guide to the CBD and its provisions on access and benefit-sharing, <i>The CBD for Botanists</i>, for use by taxonomists, collections managers and other people working with botanical collections worldwide.</p> <p>For more information on the Principles and <i>The CBD for Botanists</i>, please see: http://www.kew.org/conservation</p>	

16. Has your country developed taxonomic support to address the issues of invasive alien species?	
a) no	
b) no, but relevant policy and programme under development	
c) yes, some policies and programmes in place (please provide details)	X
d) yes, comprehensive policies and programmes in place (please provide details)	
Further comments on taxonomic support to address the issues of invasive alien species	
<p>UK taxonomic institutions play a leading role on the identification of newly arrived invasive alien species and in the development of methods for controlling these species or reducing their impacts.</p> <p>UK taxonomic institutions have also helped develop methods for combating invasive alien species in other countries, including public education initiatives and the development of identification guides.</p> <p>JNCC recently commissioned an audit of non-native species (not all of which are necessarily invasive) in the UK Overseas territories. Information was gathered through desk study, literature reviews and contacts with relevant experts. The report is still in draft form but shows that a minimum of 2931 non-native species occur in the UK's Overseas Territories, ranging from a high of 1139 in Bermuda to a low of zero in the South Sandwich Islands. The final report will be made available by JNCC in due course (http://www.jncc.gov.uk)</p> <p>A number of projects to combat invasive alien species have been carried out by UK taxonomic institutions in developing countries with the support of the Darwin Initiative. The UK's Darwin Initiative grants programme aims to promote biodiversity conservation and sustainable use of resources in less developed countries. The Initiative is funded and administered by the UK Department for Environment, Food and Rural Affairs, (Defra). More information is available online at http://www.darwin.gov.uk/</p>	

17. Has your country developed taxonomic information system to support the maintenance, preservation and protection of traditional knowledge, innovations and practices of indigenous and local communities in accordance with Article 8(j) and related provisions?	
a) no	
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken but a system is not in place yet (please provide details)	X
e) yes, a taxonomic information system in place (please provide details)	
Further comments on the taxonomic information system to support the maintenance, preservation and protection of traditional knowledge, innovations and practices of indigenous and local communities	
<p>UK institutions play a leading role in a number of regional and global initiatives, such as GBIF, which are designed to make the taxonomic information held in natural history collections available to those that need it.</p> <p>An example of the kind of work undertaken by UK scientists at the NHM is a project concerning the Yasuní National Park and the adjacent Huaorani Ethnic Reserve which form the largest protected area in Ecuador's hyperdiverse Amazonian rainforest. 'Biodiversity basics strengthening sustainability of the Yasuní Amazonian rainforest, Ecuador' is a collaborative project with Pontificia Universidad Católica del Ecuador (PUCE), funded by the UK's Darwin Initiative. The aim of the project is to enhance conservation and sustainable use of this extraordinary forest by working closely with local Huaorani communities in developing identification guides and educational material that will improve communication between all groups concerned with management of the region.</p> <p>A recent publication by A.G. Miller and M. Morris of RBGE, The ethnoflora of Soqotra is a landmark publication in that it links taxonomic and ethnographic information and uses simple diagrammatic keys. At 759 pages it is an encyclopedia of botanical, ethnobotanical and linguistic information. http://www.rbge.org.uk/rbge/web/news/news.jsp?item=98&year=2004</p>	

18. Has your country undertaken any taxonomy-related activities that support the implementation of the ecosystem approach and the work in the field of assessments, monitoring and indicators?	
a) no	
b) no, but some programmes are under development	
c) yes, some programmes in place (please provide details)	X
d) yes, comprehensive programmes in place (please provide details)	
Further comments on programmes and activities to support the implementation of the ecosystem approach and the work in the field of assessments, monitoring and indicators	
<p>The Ecosystem Approach recognises that the collection of data has an important role in understanding the structure of ecosystems, the services they provide and the limits of their functioning. The Ecosystem Approach encourages management and monitoring to be undertaken at appropriate spatial and temporal scales. This is important if population dynamics are to be fully understood as a species might appear abundant at one scale but rare or unpredictable at another. The collection of data by people from a diverse range of backgrounds as part of their employment or hobby also has a direct link to the Ecosystem Approach. The engagement of all sectors of society and the use of all forms of knowledge has a very important role in ensuring all stakeholders are integrated into all activities which have an impact on biodiversity.</p> <p>At least 60,000 people routinely gather biodiversity data in the UK. The majority of them are volunteers organised into many national and local societies and recording schemes whose work is largely collected into data holdings in a variety of formats ranging from simple field notes, to card indexes to electronic databases. Much of these data are eventually published as Atlases, although this limits their usefulness somewhat.</p> <p>The UK's National Biodiversity Network (NBN) has been set up to provide a system that will make the information on UK plant and animal species that is gathered available in one place, and in one format. This will facilitate the sharing and exchanging of this information. This information includes monitoring and observational data from the many amateur societies and schemes in the UK, as well as from data gathered through government funded monitoring activities.</p> <p>Jersey has completed a mammal survey. The status of the endemic Jersey bank Vole (<i>Clethrionomys glareolus caesarius</i>) and two shrews., Millet's shrew (<i>Sorex coronatus</i>) and the lesser white-toothed shrew (<i>Crocidura suaveolens</i>), not found in the UK, were investigated and action plans will be drawn up.</p>	

If your country wishes to provide additional information on implementation of this programme of work, please do so in the following space

<p>The Global Strategy for Plant Conservation has several targets where taxonomy plays a vital role. RBG Kew has facilitated stakeholder consultation on Target 1- A working list of all known plant species - and is actively working to achieve this target. Target 2- Preliminary conservation assessment of all known plant species- also has a large taxonomic component. RBG Kew has produced over 350 species conservation assessments in the last year.</p> <p>Target 15- Building capacity for the conservation of plant diversity - is being addressed through RBG Kew's international diploma programme (see Question 5).</p>
--