

Online Biodiversity Information Sources



The Energy & Biodiversity Initiative

TABLE OF CONTENTS

1.	INTRODUCTION	2
2.	QUANTITY AND QUALITY OF INFORMATION AVAILABLE	3
3.	KEY SOURCES OF INFORMATION AND KEY ORGANIZATIONS.....	5
3.1	Protected Areas.....	5
3.2	Sensitive Environments.....	6
3.3	Conventions and National Biodiversity Strategies and Action Plans	6
3.4	Species-Related Data	7
4.	OTHER SITES	8
4.1	General Information.....	8
4.2	Biodiversity - Global Projects.....	8
4.3	Indigenous Peoples and Traditional Knowledge	10
4.4	Freshwater Resources	11
4.5	Marine Resources.....	11
4.6	Databases.....	12
4.7	Gateways, Directories and Search Engines.....	13
4.8	Systematics and Taxonomic Databases	14
4.9	Biodiversity - Regional Projects	15
4.10	Natural History Museums.....	18
4.11	Science, Research and Natural History	18
4.12	International Conservation NGOs.....	18
4.13	Publications	21

photo credit: ©Conservation International, Russell A. Mittermeier

1. INTRODUCTION

The primary use of this document is as a specific navigation guide to assist users in answering the questions posed in the *Framework for Integrating Biodiversity into the Site Selection Process*. To use the Framework, the following types of information are needed:

- Databases that indicate the presence of areas with some type of conservation designation ranging from World Heritage Sites to IUCN Conservation Management Categories I-VI.
- Data that relate to the legal designations of those areas.
- Ecological data that relate to a prospective concession (e.g. species and their status, their distribution, their level of endemism, unique habitat features etc.).
- Social or value aspects of the biodiversity within a particular prospective concession.
- Identification of organizations that are most likely to house the relevant data.

It is likely that this information will exist in a number of different locations. For some of the questions the oil or gas company may already hold the information. In other cases it will be necessary to obtain the information from sources that could include, but not be limited to, international and national conservation NGOs, national government departments responsible for the environment, and tertiary academic institutions. For other information (such as social and value aspects) secondary sources may be very limited and require substantiation and/or acquisition during the consultation process. Irrespective of its source, any information will need to be checked and supplemented throughout the life of the project through the environmental profiling and assessment process, biodiversity assessment process and stakeholder engagement.

This document's secondary use is to assist readers and users of EBI's other products in finding biodiversity-related information to complement and support those products, with the emphasis on high quality, credible and validated material.

 See **Framework for Integrating Biodiversity into the Site Selection Process** for more information on how this information can be applied in the site selection process.

2. QUANTITY AND QUALITY OF INFORMATION AVAILABLE

A vast amount of information relating to biodiversity is available in the public domain. The sources include national government departments, NGOs, tertiary academic institutions and research organizations. While the information is held within the archives of the institutions, libraries and published reports, much of it can already be accessed directly by means of internet links (shown underlined in this document) to the individual organization's home web page or in some cases a specific topic web page. However, a Google search (www.google.com) with the keyword "biodiversity" generates over 3.2 million hits (as of April 15, 2003). Limiting the search to those documents updated in the past three months reduces the number to 218,000 – suggesting other useful criteria than volume, such as relevancy or timeliness must be employed in order to streamline the mass of information available. Search strategies are extremely important in terms of identifying relevant, high quality information – further guidance can be found at searchenginewatch.com/webmasters/index.html and Google's "How to Search Better" www.google.com/tour/services/index.html.

This document assists with the streamlining of available information by taking some of the existing lists of biodiversity sites and assessing the relevance of the individual links to the subject of biodiversity, protected areas and endangered species. While the emphasis here is on high-quality links, the reader should remember that the process of peer-review and validation does not always apply to material that appears on the web and therefore a degree of caution is required when accessing and interpreting information found via this route. Much of the information is compiled on a coarse spatial scale and only in a few cases will fine scale resolution be available. When a detailed assessment is required as part of an Environmental and Social Impact Assessment, it is strongly recommended that any third party data is checked and confirmed by carrying out site-specific field surveys.

Those sites listed in subsequent sections were active as of May 21, 2003 and contain information that is considered to be relevant and believed to have undergone some type

of critical review during its derivation. Sites that are commercial, offering contracting or consulting services, or that are parochial in nature have not been included in the list. Many websites are relatively transient in nature, with deletion or changing addresses both common problems. When a page linked from a main home page is no longer available, it is advisable to return to the main home page and attempt to find the relevant link from there. Where the home page is also no longer available, the institution or link in question can be researched further using a number of readily available search engines. Several top-rated search engines can be found at searchenginewatch.com/awards/2002-winners.html. Meta-crawlers that cluster results, such as www.vivisimo.com also represent powerful research tools.

The web addresses of the sites noted in this document can be entered manually (addresses are shown in square brackets or underlined for those reading a hard copy version of this document) or, for those using an electronic version, the website can be viewed by placing the mouse pointer over the underlined text, at which point the address of the site will be displayed in a box. A left click on the mouse will automatically connect to the site if the reader's computer is connected to the Internet. The reader may then return to this document simply by clicking the back arrow on the browser tool bar.

The sites have been grouped into those with a similar content either by technical content or regional content. Where possible the link leads directly to the relevant section of the web site, in other cases the route to the relevant page(s) is clearly identifiable. The descriptions of links and pages are for guidance only and mainly derived directly from the webpages in question. Therefore readers are advised to assess the information found at any site using suitable criteria.

In order to make it easier for those managers with little time in the early stages of a project, the most useful sources of information are presented in a separate section upfront, along with a list of the key environmental and conservation organizations. These

sources will yield a significant amount (but by no means all) of the information.

Finally, the continued improvement of this document is dependent on the active participation of end-users and stakeholders. Therefore, readers are encouraged to send additional sources of information for inclusion in future updates.

**PLEASE SEND COMMENTS, SUGGESTIONS
AND QUESTIONS TO:**

THE ENERGY & BIODIVERSITY INITIATIVE
c/o Dr. Assheton Stewart Carter
The Center for Environmental Leadership in Business
Conservation International
1919 M Street NW, Suite 600
Washington, DC 20036
USA
Tel: +1 202 912 1449
Fax: +1 202 912 1047
Email: a.carter@celb.org
Website: www.TheEBI.org

3. KEY SOURCES OF INFORMATION AND KEY ORGANIZATIONS

3.1 PROTECTED AREAS

3.1.1 Biosphere Reserves

[www.unesco.org/mab/wnbr.htm]

Biosphere reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. Biosphere Reserves are not covered by an international convention but must simply meet a set of criteria allowing them to fulfill properly their three functions. Answers to frequently asked questions relating to biosphere reserves can be found at www.unesco.org/mab/nutshell.htm.

3.1.2 Ramsar Convention on Wetlands

[www.ramsar.org/index_about_ramsar.htm]

This site provides information about the Ramsar Convention on Wetlands and the Ramsar Database.



For further information on the Ramsar Convention see **International Conventions**.

3.1.3 UNEP-WCMC - Protected Areas Database

[www.unep-wcmc.org/protected_areas/data/nat2.htm]

Every country in the world has defined areas that are managed for conservation of animals, plants and other natural and cultural features. UNEP-WCMC locates and compiles information on the [protected areas](#) of the world. These can be identified and combined with other data to produce lists and maps that illustrate the distribution of these areas. The information services include a [Protected Areas searchable database](#), [virtual library](#), [Internet map server](#) and the World Heritage Information Network ([WHIN](#)) developed with UNESCO. An analysis of the level of protection provided to Europe's forests was completed in 2000. Maps and details of the analysis are available at the [European Forests and Protected Areas: Gap Analysis 2000](#) website.

3.1.4 United Nations Educational, Scientific and Cultural Organization (UNESCO) - World Heritage Sites

[whc.unesco.org/heritage.htm]

This site lists the 754 properties that the World Heritage Committee has inscribed on the World Heritage List (582 cultural, 149 natural and 23 mixed properties in 128 States Parties as of July 2003).

3.1.5 Wetlands International - Ramsar Database

[www.wetlands.org/]

Wetlands International is a global non-profit organization dedicated to wetland conservation and sustainable management. It carries out its activities in 120 countries, using its network of experts and institutional partnerships. The Ramsar Database contains information on wetlands designated as internationally important under the [Convention on Wetlands](#) (see Section 3.1.2). These wetlands are commonly known as Ramsar Sites. Wetlands International manages and develops the Ramsar Database under contract to the Ramsar Bureau.

3.1.6 The World Commission on Protected Areas

[wcpa.iucn.org/wcpainfo/aboutwcpa.html]

The World Commission on Protected Areas (WCPA) is the world's leading global network of protected area specialists. The IUCN Programme on Protected Areas (PPA) is the focal point within the IUCN Secretariat for Protected Areas and serves as the Secretariat for WCPA. The mission of the WCPA is to promote the establishment and effective management of a worldwide representative network of terrestrial and marine protected areas, as an integral contribution to the IUCN mission. The organization has the following objectives: to help governments and others plan protected areas and integrate them into all sectors, through provision of strategic advice to policy makers; to strengthen capacity and effectiveness of protected areas managers, through provision of guidance, tools and information and a vehicle for networking; to increase investment in protected areas, by persuading public and corporate

donors of their value; and to enhance WCPA's capacity to implement its program, including through cooperation with IUCN members and partners.

3.2 SENSITIVE ENVIRONMENTS

3.2.1 BirdLife International

[\[www.birdlife.org.uk/action/science/sites/index.html\]](http://www.birdlife.org.uk/action/science/sites/index.html)

Important Bird Areas (IBAs) are places of international significance for the conservation of birds at the global, regional or sub-regional level. They are identified using standardized, internationally agreed criteria. IBAs are a practical tool for conservation. Sites must, wherever possible, be amenable to being conserved and to being delimited from surrounding areas, and be large enough to support viable populations of the species for which they are important.

3.2.2 Conservation International - Hotspots and Wilderness Areas (pending: Marine Hotspots and Freshwater Hotspots)

[\[www.biodiversityhotspots.org\]](http://www.biodiversityhotspots.org)

The most remarkable places on Earth are also the most threatened, and many of them have been reduced to less than 10 percent of their original vegetation. CI works to conserve the Earth's living heritage, global biodiversity, by concentrating its efforts on the biodiversity Hotspots, wilderness areas, and key marine ecosystems. Hotspots are one of CI's main areas of focus for biodiversity conservation. At CI, the Hotspots approach to the conservation of threatened ecosystems and species is a highly targeted strategy for tackling the overwhelming problem of biodiversity loss at the global level. British ecologist Norman Myers conceived the Hotspots concept in 1988 as a way to designate priority areas for conservation. Since then, CI, Myers, and other collaborators have expanded on his original research, continuing to analyze the state of the Hotspots. The Center for Environmental Leadership in Business provides a new forum for collaboration between the private sector and the environmental community. Created in a partnership between CI and Ford Motor Company, the Center operates as a division of CI and is governed by a distinct executive board of leaders from the business and environmental communities. The Center engages the private sector worldwide in creating solutions to critical global environmental problems in which industry plays a defining role.

3.2.3 IUCN Commission on Ecosystem Management

[\[iucn.org/themes/cem/\]](http://iucn.org/themes/cem/)

The IUCN Commission on Ecosystem Management (CEM) provides expert guidance on integrated ecosystem

approaches to the management of natural and modified ecosystems. It provides assistance to the Conventions on Biological Diversity, Sustainable Development and to Combat Desertification and the Ramsar Convention on Wetlands of International Importance.

3.2.4 UNEP - WCMC - Interactive Maps Service

[\[www.unep-wcmc.org/\]](http://www.unep-wcmc.org/)

This site contains links to other sites on coral disease, marine turtles, arctic birds, bird migration routes and breeding areas as well as a number of interactive maps serving the Mediterranean Sea, the Black Sea, the Caribbean and the Caspian.

3.2.5 WWF - Global 200 Ecoregions

[\[www.panda.org/resources/programmes/global200/pages/mainmap.htm\]](http://www.panda.org/resources/programmes/global200/pages/mainmap.htm)

The Global 200 is a science-based global ranking of the Earth's most biologically outstanding terrestrial, freshwater and marine habitats. It provides a critical blueprint for biodiversity conservation at a global scale. Developed by WWF scientists in collaboration with regional experts around the world, the Global 200 is the first comparative analysis of biodiversity to cover every major habitat type, spanning five continents and all the world's oceans. The aim of the Global 200 analysis is to ensure that the full range of ecosystems is represented within regional conservation and development strategies, so that conservation efforts around the world contribute to a global biodiversity strategy.

3.3 CONVENTIONS AND NATIONAL BIODIVERSITY STRATEGIES AND ACTION PLANS

3.3.1 Biodiversity-related Conventions

[\[www.biodiv.org/convention/partners-websites.asp\]](http://www.biodiv.org/convention/partners-websites.asp)

This site provides links and information on the five big biodiversity-related Conventions: the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS), the Convention on Wetlands (Ramsar), and the World Heritage Convention (WHC).

Extended details of these and other conventions can be found in **International Conventions**.



3.3.2 National Biodiversity Strategies and Action Plans

Convention on Biological Diversity [www.biodiv.org]
UNDP Global Environment Facility Biodiversity Planning Support Programme: [www.undp.org/bpsp/]
These two sites present the National Biodiversity Strategies and Action Plans for countries that have produced them.

3.4 SPECIES-RELATED DATA

3.4.1 BirdLife International - Bird Species Data

[www.birdlife.org/datazone/species.html]
This site allows for a search of globally threatened and lower risk bird species. Details of BirdLife International's Important Bird Areas may be found at www.birdlife.org/. For over 20 years, BirdLife International has published information on globally threatened bird species in Red Data Books and checklists, and now birds are recognized as the best-documented group of all species. BirdLife is the official Listing Authority for birds for the IUCN Red List and works closely with the IUCN/Species Survival Commission Specialist Groups (see Section 3.4.3) and a worldwide network of experts in this capacity. The wealth of information generated by this programme lays the foundation for BirdLife's work and guides its priorities for action. Readers can also check the case studies and data available at www.birdlife.org/datazone/index.html.

3.4.2 The IUCN Red List of Threatened Species

[www.redlist.org/]
[www.iucn.org/themes/ssc/redlists/rindex.htm]
The IUCN Red List is the world's most comprehensive inventory of the global conservation status of plants and animals. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. The Red List is searchable on its own website www.redlist.org and a book of the analysis of the major findings has been produced. Users are able to search for a species by common or scientific name, to find out its status, distribution, habitats, threats, and other information that supports the listing.

3.4.3 Species Survival Commission (SSC) - Species Specialist Groups

[www.iucn.org/themes/ssc/sgs/sgs.htm]
SSC's 7,000 members are deployed in more than 110 Specialist Groups based on their area of expertise. Most of the Groups are taxon based, and are listed below according to major grouping: plants, mammals, birds, reptiles and amphibians, fishes, and invertebrates. This site provides a list of all SSC Specialist Groups, Task Forces and Committees, with contact information, and titles of recent publications (with links to those available online). Links to group websites are also included where these are available.

4. OTHER SITES

Web-site addresses are not always indicative of the content of the site. Consequently in this section the address has been replaced by more descriptive text. Where appropriate, further information has been added. Some of the sites are duplicated since they provide access to more than one category of information. Accessing a site will in many cases provide further links to sites that may also be included in this list.

4.1 GENERAL INFORMATION

- **Biodiversity Conservation Network (BCN)** [www.bcnet.org]
Information on the approach of business to biodiversity issues.
- **Centre for Social and Economic Research on the Global Environment** [www.uea.ac.uk/env/cserge]
An interdisciplinary research center based at the University of East Anglia (Norwich, UK) with an international reputation for policy-relevant research on environmental issues, including biodiversity.
- **Convention on Biological Diversity: Clearing-House Mechanism** [www.biodiv.org/chm]
Provides ready access to a range of sources of information on biodiversity issues.
- **Ecolynx: Information Context for Biodiversity Conservation** [www.ecolynx.org]
Ecolynx is an integrated information package for biodiversity conservation that links data on threatened species and habitats with information about responses by society to threats to biodiversity.
- **EcoNet** [www.igc.org/igc/gateway/enindex.html]
Provides links to current news stories in the fields of conservation and biodiversity.
- **Eco-Portal environmental search engine** [www.Eco-Portal.com]
Provides links to sites containing information on terrestrial, marine and freshwater biodiversity.

4.2 BIODIVERSITY - GLOBAL PROJECTS

- **BIODI** [biodi.sdsc.edu]
Advanced computational approaches to environmental and biodiversity information at San Diego Supercomputer Center.
- **Biodiversity Conservation Information System (BCIS)** [biodiversity.org]
BCIS is a consortium of ten international conservation organizations and programs of IUCN—The World Conservation Union. BCIS members collectively represent the single greatest global source of biodiversity conservation information in the world. BCIS is a framework within which the members' networks work together toward a common goal: to support environmentally sound decision-making and action by facilitating access to biodiversity data and information.
- **BioNet-International** [www.bionet-intl.org]
BioNET-INTERNATIONAL is dedicated to supporting sustainable development by helping developing countries to overcome the taxonomic impediment by becoming self-reliant in taxonomy, i.e. self-reliant in the skills, infrastructure and technologies needed to discover, identify, name, classify and to understand the relationships of all organisms.
- **Center for Applied Biodiversity Science (CABS)** [www.biodiversityscience.org]
CABS brings together leading experts in science and technology to collect and interpret data about biodiversity, develop strategic plans for conservation, and forge partnerships in all sectors that promote conservation goals. CABS promotes public awareness and involvement in saving the planet's living resources.
- **CABS Knowledge Management System** [cabs.kms.conservation.org/WOMBAT/application/home.cfm]
The CABS Knowledge Management System is a web-based knowledge-sharing system developed by the Center for Applied Biodiversity Science at

Conservation International, and is available for use by its partners and the general public. This site provides a platform for users to search, organize, store and share conservation and scientific information and files related to people (contacts, expertise directories), organizations, documents, datasets, projects, news and discussions.

- **Center for Biodiversity and Conservation** [research.amnh.org/biodiversity/index.html]
The CBC (part of the American Museum of Natural History) undertakes activities that integrate scientific research, education, and outreach to enable people – themselves an important cause of the rapid loss of biodiversity – to become participants in its conservation. Through collaboration with partner institutions, CBC focuses its efforts on integrated research, professional development, and public involvement.
- **Center for Marine Conservation** [www.cmc-ocean.org]
Through science-based advocacy, research and public education, CMC promotes informed citizen participation to reverse the degradation of oceans.
- **ConserveOnline** [www.conserveonline.org]
ConserveOnline is a “one-stop” online, multi-lingual public library (English, Spanish, Portuguese), created and maintained by The Nature Conservancy in partnership with other conservation organizations. The library makes conservation tools, techniques, and experience available to a broad community of conservation practitioners. This site is intended to foster learning and collaboration, and provide information and support to anyone making conservation-related decisions, from the staff of conservation organizations to land managers at government agencies to local land trusts to private landowners. Through discussion groups and information sharing, ConserveOnline is an open forum for sharing successes and failures, and for connecting scientific research with field-based conservation practice. They welcome anyone with documents, data, maps, or images relevant to the science and practice of conservation to make these resources publicly available through ConserveOnline, and to share their expertise through the discussion groups.
- **DIVERSITAS** [www.icsu.org/DIVERSITAS]
DIVERSITAS is an international global environmental change research programme sponsored by the International Council for Science (ICSU),

SCOPE (Scientific Committee on Problems of the Environment), IUBS (International Union of Biological Sciences), IUMS (International Union of Microbiological Societies) and UNESCO-MAB (Man and the Biosphere).

- **Endangered Species** [eelink.net/EndSpp/endangeredspeciesmainpage.html]
Education resources on the Internet relating to endangered species.
- **European Tropical Forest Research Network** [www.etfrn.org/etfrn/index.html]
European Tropical Forest Research Network (ETFRN) is a forum for communication between European organizations, researchers, EU institutions and others concerned with (sub-) tropical forest research. The ETFRN Network seeks to promote the involvement of European research expertise toward the conservation and wise use of forests and woodlands in tropical and subtropical countries.
- **Expert Center for Taxonomic Identification** [www.eti.uva.nl]
ETI promotes the broad use of taxonomic and biodiversity knowledge worldwide and is a member of Species 2000 (see Section 4.4).
- **FAO Forestry** [www.fao.org/forestry]
A site hosted by the Food and Agriculture Organization of the United Nations relating to the sustainable management of forestry and including biodiversity issues.
- **FishBase** [www.fishbase.org/home.htm]
FishBase is a relational database with information that caters to different professionals such as research scientists, fisheries managers, zoologists and many more. FishBase on the web contains practically all fish species known to science. It was developed at the World Fish Center in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and many other partners, and with support from the European Commission (EC). Since 2001, a consortium of seven research institutions has supported FishBase.
- **Forest Conservation** [forests.org/forsite.html]
Links to sites relating to biodiversity from a forest ecosystem perspective, including categories such as forest type, region, ecology, conservation issue, protection and campaigns.

- **The Global Biodiversity Information Facility (GBIF)** [www.gbif.org]
A substantial project to create an interoperable network of many biodiversity databases and information technology tools that will enable users to navigate and put to use the world's vast quantities of biodiversity information to produce national economic, environmental and social benefits.
- **Global Forest Information Services (GFIS)** [www.iufro.org]
GFIS is a distributed network of databases that catalog the information resources, using a common metadata standard to enhance access to and provision of quality forest-related information, maintained by the International Union of Forest Research Organizations [iufro.boku.ac.at/iufro].
- **Global Forest Watch** [www.globalforestwatch.org]
Global Forest Watch's overall objective is to infuse transparency and accountability into the decision-making processes that determine how forests are managed and for whom. Global Forest Watch promotes transparency and accountability by: tracking the actors (corporations, government agencies, individuals) that are sponsoring development activities, mapping out where these actors are operating, and monitoring the degree to which these actors are following national and local management laws and regulations.
- **Marine Conservation Biology Institute** [www.mcbi.org]
MCBI is a tax-exempt, non-profit organization dedicated to safeguarding life in the sea by advancing the multidisciplinary science of marine conservation biology.
- **Millennium Ecosystem Assessment (MA)** [www.millenniumassessment.org/en]
The MA is a four-year process that commenced in April 2001 to improve the management of the world's natural and managed ecosystems by helping to meet the needs of decision-makers and the public for peer-reviewed, policy-relevant scientific information on the condition of ecosystems, consequences of ecosystem change, and options for response. The MA will provide information and also build human and institutional capacity to provide information.
- **Oceanic Research Group** [www.oceanicresearch.org/index.html]
Dedicated to the conservation of the world's oceans through education. Principal outputs include educational films and products.
- **ReefBase** [www.reefbase.org]
ReefBase is the official database of the Global Coral Reef Monitoring Network (GCRMN). The GCRMN provides data and information on the status and trends in coral reefs to the international community to improve conservation.
- **Tropical Rain Forest Information Center (TRFIC)** [www.bsrsi.msu.edu/trfic/home.html]
The Tropical Rain Forest Information Center (TRFIC) is part of NASA's Federation of Earth Science Information Partners [www.esipfed.org]. The objective of the Federation is to experiment with and evolve processes to make Earth system science data easy to preserve, locate, access and use for all beneficial applications, including research, education, and commercial, many of which may cross the Federation membership. The TRFIC is one of several distributed collaborating laboratories and data centers located within the government, universities and the private sector, working collectively to provide enhanced datasets, information products, and services primarily to the Earth Science community but also to other users such as schools, NGOs and businesses.
- **Virtual School of Biodiversity** [vsb.nott.ac.uk/vsb/Virtschl7.htm]
A web-based mechanism for mediating cooperative teaching and learning between real, research intensive universities with real, knowledge-seeking communities of students (it is therefore not primarily a mechanism for "distance learning" in the traditional sense).
- **World Fish Center** [www.worldfishcenter.org]
WorldFish Center is a unique international research center involved in research on fisheries and other living aquatic resources.

4.3 INDIGENOUS PEOPLES AND TRADITIONAL KNOWLEDGE

- **Indigenous Peoples Biodiversity Information Network** [www.ibin.org]
The Indigenous Peoples Biodiversity Information Network (IBIN) is a mechanism to exchange information about experiences and projects and to increase collaboration among indigenous groups working on common causes related to biodiversity use and conservation.

- Indigenous Peoples and Protected Areas (WWF) [panda.org/resources/publications/sustainability/indigenous2]
A site hosted by WWF relating to protected areas and indigenous peoples.
- Atlantic Society of Indigenous Chiefs [www.atsic.gov.au]
- Atlantic Policy Congress of First Nations Chiefs Secretariat Inc. [www.apcfn.org]
- Aurora Research Institute [www.auresint.nt.ca]
- Australian Institute of Aboriginal and Torres Strait Islander Studies for the Indigenous Cultural and Intellectual Property Rights [iciplawnet.com.au]
- Canadian Arctic Resources Committee (CARC) [www.carc.org]
- Centre for Indigenous Environmental Resources [www.cier.mb.ca]
- Dene Cultural Institute [www.deneculture.org]
- Igloodik Research Centre [www.nunanet.com/research/igloorc.htm]
- Indigenous Keepers Program [www.web.net]
- Indigenous Knowledge and Development Monitor [www.nuffic.nl/ciran/ikdm]
- Indigenous Peoples Biodiversity Information Network [www.ibin.org]
- International Alliance of Indigenous Tribal Peoples of the Tropical Forests [www.fern.org]
- Native Americans and the Environment [www.indians.org]
- Nevada Indian Environmental Coalition [www.niec.net]
- The Earth Council (Costa Rica) [www.ecouncil.ac.cr]
- Wildlife Management Advisory Council (Yukon) [www.taiga.net/wmac]
- World Intellectual Property Organization [www.wipo.int]

4.4 FRESHWATER RESOURCES

- Conservation International's Freshwater Hotspots Assessment, and CI's AquaRAP [www.biodiversityscience.org/xp/CABS/research/rap/aquarap/aquarap.xml]
Rapid assessment methodology to assess the biological and conservation value of tropical freshwater ecosystems in Latin America
- Global International Water Assessment [www.giwa.net]
A program on transboundary water areas, sponsored by UNEP/GEF.
- Global Water Partnership [www.gwpforum.org/servlet/PSP]
Sponsored by the World Bank, UNEP and the Swedish International Development Agency, along with the International Center for Local Environmental Initiatives (ICLEI). Started by bringing together financial, technical, policy and human resources to address the critical issues of sustainable water management.
- Nature Conservancy's Freshwater Initiative [www.freshwaters.org]
Designed to dramatically increase freshwater conservation in 40 sites in the US, Latin America, and the Caribbean.
- United Nation's World Water Assessment Programme [www.unesco.org/water/wwap]
Serving as an umbrella for all UN water programs, and providing an ongoing global assessment of the state of the world's freshwater resources and uses.
- World Conservation Monitoring Centre & UNEP Freshwater Biodiversity [www.unep-wcmc.org/information_services/publications/freshwater]
- World Water Council [www.worldwatercouncil.org]
Runs the World Water Forum and publishes Water Policy journal.

4.5 MARINE RESOURCES

- Global Coral Reef Monitoring Network (GCRMN) [coral.aoml.noaa.gov/gcrmn/]
- International Coral Reef Initiative (ICRI) electronic forum [www.ICRIFORUM.org]

- **Marine Protected Areas (MPA) News**
MPA News is published monthly by Marine Affairs Research and Education (MARE), a not-for-profit corporation, in association with the School of Marine Affairs, Univ. of Washington. To subscribe, send an e-mail message to mpanews@u.washington.edu

- **Reef Links** [www.reefbase.org]

4.6 DATABASES

4.6.1 Biological Databases

- **Base de Dados Tropical (BDT)**
[\[www.bdt.org.br/databases\]](http://www.bdt.org.br/databases)
Tropical Database of the André Tasello Foundation, Brazil. A variety of databases providing biological information of environmental and industrial interest (available in English and Portuguese).
- **BirdLife International**
[\[www.birdlife.org/datazone/index.html\]](http://www.birdlife.org/datazone/index.html)
This site allows for a search of globally threatened and lower risk bird species (see Section 3.4.1).
- **InfoNatura** [www.infonatura.org]
A source for conservation information on the birds and mammals of Latin America and the Caribbean.
- **Fauna Europaea** [www.faunaeur.org]
The European Commission is funding the Fauna Europaea project for a period of four years (March 1, 2000 – March 1, 2004). The project will assemble a database of the scientific names and distribution of all living multi-cellular European land and fresh-water animals.
- **Man and the Biosphere Species Databases**
[\[ice.ucdavis.edu/mab\]](http://ice.ucdavis.edu/mab)
Databases of vascular plant and vertebrate animal occurrences on the world's biosphere reserves and other protected areas.
- **National Biological Information Infrastructure (NBII)**
[\[www.nbii.gov\]](http://www.nbii.gov)
An electronic gateway to biological data and information maintained by federal, state, and local government agencies, private sector organizations, and other partners around the nation and the world.
- **NatureServe** [www.natureserve.org]
NatureServe is a non-profit conservation organization that provides the scientific information and tools

needed to help guide effective conservation action. NatureServe and its network of natural heritage programs are the leading source for information about rare and endangered species and threatened ecosystems. NatureServe represents an international network of biological inventories-known as natural heritage programs or conservation data centers operating in all 50 U.S. states, Canada, Latin America and the Caribbean.

- **Species Information Service (SIS)**
[\[www.iucn.org/themes/ssc/programs/sisindex.htm\]](http://www.iucn.org/themes/ssc/programs/sisindex.htm)
Through its volunteer membership of 7,000 species conservation experts, Species Survival Commission holds what is probably the world's most complete body of information on the status and distribution of species threatened with extinction. The SIS aims to become a worldwide species information resource (interlinked databases of species-related information managed by SSC's network of Specialist Groups). It will be easily accessible to the conservation and development communities including scientists, natural resource managers, educators, decision-makers and donors, and will contribute to integrated biodiversity conservation products.
- **Species in Parks: Flora and Fauna Databases**
[\[ice.ucdavis.edu/nps\]](http://ice.ucdavis.edu/nps)
Databases of vascular plant and vertebrate animal species reported to occur within lands managed by the U.S. National Park Service.
- **Species 2000** [www.sp2000.org]
Species 2000 has the objective of enumerating all known species of plants, animals, fungi and microbes on Earth as the baseline dataset for studies of global biodiversity. It will also provide a simple access point enabling users to link from here to other data systems for all groups of organisms, using direct species-links. Users worldwide will be able to verify the scientific name, status and classification of any known species through species checklist data drawn from an array of participating databases.
- **Threatened Animals of the World**
[\[www.wcmc.org.uk/data/database/rl_anml_combo.html\]](http://www.wcmc.org.uk/data/database/rl_anml_combo.html)
The WCMC *Animals Database* holds information on threatened species and others of conservation concern. Part of this database is common to the IUCN Red List of Threatened Animals, and this information is available at this site in an interactive format. This information resource is a result of long-term collaboration between

a large number of individual scientists worldwide and many organizations, notably the Species Survival Commission of IUCN, BirdLife International and WCMC.

4.6.2 Molecular Databases

- **Complete Genome Assemblies**
[www3.ncbi.nlm.nih.gov/entrezquery.fcgi?db=Genome]
The whole genomes of over 800 organisms.
- **Entrez WWW Server**
[www3.ncbi.nlm.nih.gov/Entrez/index.html]
A search and retrieval system that integrates information from databases at the National Center for Biotechnology Information (USA).

4.6.3 Mapping Databases

- **Checklist of Online Vegetation and Plant Distribution Maps** [www.lib.berkeley.edu/EART/vegmaps.html]
Compiled by Claire Englander and Philip Hoehn.
- **German Remote Sensing Data Center**
[satftp.satlab.hawaii.edu/dlr/catalog.html]
Satellite imaging of landforms.
- **Global Forest Watch**
[www.globalforestwatch.org/english/index.htm]
Global Forest Watch is an international data and mapping network that combines on-the-ground knowledge with digital technology to provide accurate information about the world's forests.
- **GreenInfo Network (GIS)**
[www.greeninfo.org/HTML/resources.htm]
Information and mapping resources, including conservation areas.
- **Maps and References**
[www.cgrer.uiowa.edu/servers/servers_references.html]
List of maps compiled by the University of Iowa Center for Global & Regional Environmental Research.
- **National Geologic Map Database** [ngmdb.usgs.gov]
U.S. Geological Survey information source with emphasis on maps containing information relevant to geology, hazards, earth resources, geophysics, geochemistry, geochronology, paleontology and marine geology.

4.7 GATEWAYS, DIRECTORIES AND SEARCH ENGINES

- **American Society of International Law Wildlife Interest Group**
[www.internationalwildlifelaw.org/index.shtml]
Bibliographies, links, etc. regarding international wildlife laws, treaties and agreements
- **Biodiversity Support Program (BSP)**
[www.bsponline.org]
The Biodiversity Support Program (BSP) operated from 1989-2001 as a consortium of WWF (see Sections 3.2.4 and 3.10), The Nature Conservancy (see Section 4.10), and World Resources Institute (see Section 4.10) and was funded by the United States Agency for International Development. BSP carried out its mission by supporting projects that combined conservation with social and economic development.
- **Bio Seek** [www.biodiv.org/search]
Biodiversity and ecological information search engine based in the CBD website
- **Biosis Internet Resource Guide for Zoology**
[www.biosis.org/free_resources/resource_guide.html]
- **Blacknet Education Resource Biodiversity: Digital Library**
[www.blacknet.co.uk/education/biodivlibrary.html]
Contains a variety of links that could be useful, including databases, checklists, journal homepages, etc.
- **Ecology WWW page**
[www.people.fas.harvard.edu/~brach/Ecology-WWW.html]
Links to hundreds of ecology web sites.
- **International Plant Genetics Resource Institute Library**
[www.ipgri.cgiar.org/library/resources/library.htm]
Plant genetics and agricultural conservation links and information
- **Internet Directory for Botany** [www.botany.net/IDB]
- **Internet Resource Guides**
[www.biosis.org/free_resources/resource_guide.html]
Internet resource guide for zoology.

- **Integrated Taxonomic Information System (ITIS)** [www.itis.usda.gov]
Taxonomic information on plants, animals, fungi, and microbes of North America and the world. ITIS is a partner of Species 2000 (see Section 4.4.1) and the Global Biodiversity Information Facility (GBIF) (see Section 4.2).
- **IUCN Biodiversity Economics Library** [biodiversityeconomics.org/index.htm]
- **MedBioWorld** [www.sciencekomm.at/index.html]
Links to thousands of journals, research sites and references.
- **Natural Selection** [nature.ac.uk]
A gateway to quality, evaluated Internet resources in the natural world coordinated by The Natural History Museum, London (UK).
- **ReefBase** [www.reefbase.org]
Global information system on reefs and reef systems.
- **The WWW Virtual Library of Ecology & Biodiversity** [conbio.net/vl]
The Virtual Library of Ecology and Biodiversity division of The Virtual Library Project specializes in reviewing Internet information sources pertaining to ecology and biodiversity based on their educational value.

4.8 SYSTEMATICS AND TAXONOMIC DATABASES

- **ALL Species Foundation** [www.all-species.org]
The ALL Species Foundation is a non-profit organization dedicated to the complete inventory of all species of life on Earth within the next 25 years - a human generation.
- **The Global Register of Migratory Species (GROMS)** [www.biologie.uni-freiburg.de/data/zoology/riede/groms/index.html]
GROMS summarizes the state of knowledge about migratory species. It contains a list of 2,880 migratory vertebrate species in digital format, together with their threat status according to the International Red List 2000 (see Section 3.4.2), and digital maps for about 800 species.
- **Index to Organism Names (ION)** [www.biosis.org/free_resources/ion.html]
The index currently covers all animals that have been reported in the *Zoological Record* (the index to world

zoological literature) since 1978, including algae, bacteria, fungi, and mosses.

- **International Plant Name Index (IPNI)** [www.ipni.org]
IPNI is a database of the names and associated basic bibliographical details of all seed plants. Its goal is to eliminate the need for repeated reference to primary sources for basic bibliographic information about plant names. The data are freely available and are gradually being standardized and checked. IPNI will be a dynamic resource, depending on direct contributions by all members of the botanical community.
- **Mammal Species of the World** [www.nmnh.si.edu/msw]
The Mammal Species of the World (MSW) contains the names of the more than 4,500 currently recognized species of mammals, in a taxonomic hierarchy that includes order, family, subfamily, and genus.
- **Natural Resource Management Change links** [nrm.massey.ac.nz/changelinks]
Natural resource management tools.
- **NatureServe Conservation Data** [www.natureserve.org]
Provides access to reports and analyses on critical conservation issues ranging from endangered species to freshwater biodiversity.
- **Marine Organisms Register (UNESCO-IOC)** [www2.eti.uva.nl/database/urmo/default.html]
These pages give access to an easily searchable database, which is a component of the ETI World Biodiversity Database. The UNESCO-IOC Register of Marine Organisms is an already large and gradually growing dataset that is being built up, and maintained at the National Museum of Natural History, Leiden (Netherlands).
- **PLANTS National Database** [plants.usda.gov]
Maintains and generates data reports in specialized areas including alternative crops, plant characteristics, checklists and searches, classification, cultural significance of plants, distribution, fact sheets, invasive and noxious species, threatened and endangered species and wetland indicator status.
- **Species 2000** [www.sp2000.org]
Has the objective of enumerating all known species of plants, animals, fungi and microbes on Earth as the baseline dataset for studies of global biodiversity (see Section 4.4.1).

- [Tree of Life \[tolweb.org/tree/phylogeny.html\]](http://tolweb.org/tree/phylogeny.html)
Provides information about the diversity of organisms on Earth, their history, and characteristics.

- [World Species List Taxa Database \[species.enviroweb.org\]](http://species.enviroweb.org)
A list of world species (animals, plants and microbes).

4.9 BIODIVERSITY - REGIONAL PROJECTS

4.9.1 Africa

- [African Wildlife Foundation \[www.awf.org\]](http://www.awf.org)
The African Wildlife Foundation has a vision statement that “together with the people of Africa, works to ensure the wildlife and wild lands of Africa will endure forever.”
- [Biodiversity Explorer \[www.museums.org.za/bio/index.htm\]](http://www.museums.org.za/bio/index.htm)
Explores the diversity of life in Southern Africa.
- [Endangered Wildlife Trust \[www.ewt.org.za\]](http://www.ewt.org.za)
The mission of the EWT is the conservation of plant and animal species in southern Africa.
- [Gulf of Guinea Islands Biodiversity Network \[www.gcg.org.st\]](http://www.gcg.org.st)
Information about the biodiversity, and its conservation, of the four Gulf of Guinea islands of Bioko, Príncipe, São Tomé and Annobón.
- [Madagascar Biodiversity and Conservation \[ridgwaydb.mobot.org/mobot/Madagascar\]](http://ridgwaydb.mobot.org/mobot/Madagascar)
A website based on photographs and experiences from travels in five areas of rainforest, two areas of dry tropical forest and two areas of the spiny desert.
- [Project Elgon \[www.abdn.ac.uk/~soi259/\]](http://www.abdn.ac.uk/~soi259/)
A study of the impact of humans on the biodiversity and ecology of Mount Elgon National Park (Uganda).
- [Swaziland National Trust Commission \[www.sntc.org.sz/index.html\]](http://www.sntc.org.sz/index.html)
This site contains information for the prospective visitor to Swaziland and on the country’s culture and biodiversity, general information on each department of the Swaziland National Trust Commission, detailed information on the protected areas, the programs operated by the organization, the objectives of these programs, and the legislation that relates to conservation.

4.9.2 Asia

- [Biodiversity Planning Support Programme - North East and East Central Asia \[bpcsp-neca.brim.ac.cn\]](http://bpcsp-neca.brim.ac.cn)
The Biodiversity Planning Support Programme is a multi-donor initiative implemented by the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) with core financing from the Global Environment Facility. The global program is being implemented in cooperation with regional partners covering 10 regions. The program was established to respond to needs recognized by the Parties to the United Nations Convention on Biological Diversity for strengthening national capacity to prepare and implement National Biodiversity Strategies and Action Plans (NBSAPs) in compliance with Article 6 of the Convention.
- [Biodiversity Research and Information Management \[www.brim.ac.cn\]](http://www.brim.ac.cn)
Link to the Biodiversity Committee of the Chinese Academy of Science (in Chinese and English).
- [Nature Conservation in Indonesia \[users.bart.nl/~edcolijn/index.html\]](http://users.bart.nl/~edcolijn/index.html)
Information about National Parks, Nature Reserves, Game or Wildlife Reserves, and Recreation Parks in Indonesia.

4.9.3 Europe

- [BIOMARE \[www.biomareweb.org\]](http://www.biomareweb.org)
Implementation and networking of large-scale long-term MARine BIODiversity research in Europe
- [European Centre for Nature Conservation \(ECNC\) \[www.ecnc.nl\]](http://www.ecnc.nl)
Furthering European nature conservation with core program areas of nature and society, ecology and economy, European ecological networks, the state of European nature and biodiversity and European landscapes.
- [European Environment Agency \[www.eea.eu.int\]](http://www.eea.eu.int)
Gateway to environmental information within the European Union.
- [Fauna Iberica \[www.fauna-iberica.mncn.csic.es/faunai/homepage.html\]](http://www.fauna-iberica.mncn.csic.es/faunai/homepage.html)
A project focusing on animal biodiversity in the Iberian-Balearic region.

- **Finnish Biodiversity Research Programme (FIBRE)** [fibre.utu.fi]
A multidisciplinary six-year research program focusing on biological, socio-economic and legal aspects of biodiversity.
- **Russian Conservation Monitoring Centre** [www.rcmc.ru]
- **Shetland Wildlife** [www.wildlife.shetland.co.uk]
News and information on the wildlife of Shetland (UK).
- **UK Biodiversity Group** [www.jncc.gov.uk/ukbg]
The website of the UK Biodiversity Group provides guidance and factsheets on Species Action Plans (SAPs) and Habitat Action Plans (HAPs), a summary of the guidance for Local Biodiversity Action Plans (LBAPs) and includes a database of all BAPS including contact details.

4.9.4 Central America and South America

- **Centro de Referência em Informação Ambiental - BDT** [www.bdt.org.br]
(Reference Centre for Environmental Information – BDT). Contributing toward a more sustainable use of Brazil's biodiversity through the dissemination of high quality information and education (in Portuguese and English).
- **INBio - Instituto Nacional de Biodiversidad** [www.inbio.ac.cr]
Costa Rica's National Biodiversity Institute, promoting the value of biodiversity (in Spanish and English).

4.9.5 North America

- **Biological Resources Division (BRD)** [biology.usgs.gov]
Working to provide the scientific understanding and technologies needed to support the sound management and conservation of the USA's biological resources.
- **Canada's Aquatic Environments** [www.aquatic.uoguelph.ca/NEW_front_page/index.htm]
Dedicated to the improvement of educational materials.
- **Center for Biological Diversity** [www.sw-center.org/swcbd]
Protecting endangered species and wild places of western North America through science, policy, education, and environmental law.

- **Chihuahuan Desert Home Page** [nasa.utep.edu/chih/chihdes.htm]
The Chihuahuan Desert is the easternmost and southernmost of the four North American deserts: the Great Basin Desert, the Sonoran Desert, the Mojave Desert, and the Chihuahuan Desert. Over several years, the Centennial Museum and its Laboratory for Environmental Biology have gathered information on this desert. In November of 1999, a NASA MUSPIN grant was received to further develop Web resources on the Chihuahuan Desert. Since that time, material from the other web sites has been consolidated and currently is being enhanced.
- **Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO)** [www.conabio.gob.mx]
Mexico's National Commission for the knowledge and use of biodiversity (in Spanish).
- **Endangered Species Home Page** [endangered.fws.gov]
A program of the US Fish & Wildlife Service.
- **Information Center for the Environment** [ice.ucdavis.edu]
The Information Center for the Environment is a cooperative effort of environmental scientists at the University of California, Davis and collaborators at over thirty private, state, federal, and international organizations interested in environmental protection.
- **National Wildlife Federation** [www.nwf.org]
The National Wildlife Federation is the United States' largest member-supported conservation group, uniting individuals, organizations, businesses and government to protect wildlife, wild places, and the environment.
- **Natural History of Orange County, California** [mamba.bio.uci.edu/~%7Epjbyrant/biodiv/index.htm]
Ultimate goal is to assemble at least one photograph, common name, order, family, species, genus, distribution, seasonality and conservation status for each species in the area.
- **Nearctica** [www.nearctica.com]
The natural world of North America, including ecology and conservation links.

- North American Biodiversity Information Network (NABIN) [www.cec.org/programs_projects/conserv_biodiv/project/index.cfm?projectID=21&varlan=english] NABIN is a collaborative network that brings together primary data sources for those involved in the protection and conservation of biological diversity in North America.
- Our Living Resources [biology.usgs.gov/s+t/index.htm] A report to the nation on the distribution, abundance, and health of U.S. plants, animals, and ecosystems.
- Sierra Club [www.sierraclub.org] Influential conservation pressure group with more than 700,000 members.
- South Florida Ecosystem History Project [sofia.usgs.gov/flaecohist/index.html] The USGS South Florida Ecosystem History Project, part of the USGS South Florida Ecosystem Program, is designed to integrate studies from a number of researchers compiling data from terrestrial, marine, and freshwater ecosystems within south Florida.

4.9.6 North Pacific

- Hawaii Biological Survey Web Site [www.bishop.hawaii.org/bishop/HBS/hbs1.html] The Hawaii Biological Survey (HBS), established by the State Legislature in 1992 as a program of the Bishop Museum, is an ongoing natural history inventory of the Hawaiian Archipelago.
- International Kuril Island Project [artedi.fish.washington.edu/okhotskia/ikip/index.htm] An international collaboration of American, Russian, and Japanese scientists to survey the biodiversity of the Kuril Archipelago.

4.9.7 South Pacific

- Australian Biodiversity Information Facility-Fauna [www.environment.gov.au/abrs/abif-fauna] A web-based source of taxonomic and biological information for all animal species known to occur in Australia.
- Environment Australia Online: Biodiversity Group [www.biodiversity.environment.gov.au] Comprehensive links to all aspects of Australian biodiversity.

4.9.8 Miscellaneous Resources

- Arabian Wildlife Online [www.arabianwildlife.com] The on-line version of the Arabian Wildlife Magazine, covering all facets of wildlife and conservation in the Arabian peninsula.
- Biodiversity and Conservation [darwin.bio.uci.edu/~sustain/bio65/Titlepage.htm] A Hypertext Book by Peter J. Bryant. University of California, Irvine
- Center for International Biogeographic Research [www.biogeography.org] Modern biogeography now explores a great diversity of patterns in the geographic variation of nature — from physiological, morphological and genetic variation among individuals and populations to differences in the diversity and composition of biotas along geographic gradients.
- Major Biomes of the World [www.runet.edu/%7Eeswoodwar/CLASSES/GEOG235/biomes/main.html] This module is part of the Virtual Geography Department Project and has been prepared for the Physical Geography Working Group of the Project (authored by Susan L. Woodward, The Virtual Geography Department Project and the Department of Geography, Radford University).
- Association for Biodiversity Information [www.natureserve.org]
- Focus for Biodiversity [www.gcte.org/focus4-structure.htm]
- Global Biodiversity Information [www.globio.info/]
- IUCN's Biodiversity Economics web site [biodiversityeconomics.org/valuation/index.html]
- International Institute for Sustainable Development (IISD) Business for Global Sustainable Development [www.bsdglobal.com]
- National Center for Science and Environment [www.ncseonline.org]

4.10 NATURAL HISTORY MUSEUMS

4.10.1 International

- Natural History Museums [www.ucmp.berkeley.edu/subway/nathistmus.html]
Extensive list of international natural history museums hosted by UC Berkeley.
- Science and Natural History Museums Hotlist [sln.fi.edu/tfi/hotlists/museums.html]
List of international natural history and science museums hosted by the Franklin Institute.

4.10.2 North America

- American Museum of Natural History [www.amnh.org]
- Canadian Museum of Nature [www.nature.ca]
- Sea and Sky: The Sea [www.seasky.org/sea.html]
- Smithsonian Natural History Home Page [www.mnh.si.edu]
- The California Academy of Sciences [www.calacademy.org]

4.10.3 Europe

- The Natural History Museum London [www.nhm.ac.uk]
- Senckenberg Centre for Biodiversity Research [senckenberg.uni-frankfurt.de/indexe.htm]

4.10.4 Australia

- Australian Museum [www.austmus.gov.au]

4.10.5 Africa

- National Museum of Namibia [www.natmus.cul.na/newindex.html]
- South African Museum [www.museums.org.za/sam]

4.11 SCIENCE, RESEARCH AND NATURAL HISTORY

- Biodiversity Indicators [www.gencat.es/mediamb/bioind]
A link to proceedings of the Barcelona conference on Biodiversity Assessment and Indicators (November 1999 - January 2000).
- Center for Biodiversity and Conservation (AMNH) [research.amnh.org/biodiversity/index.html]
Section of the American Museum for Natural History.
- Conservation Biology Institute [www.consbio.org]
CBI actively seeks creative new ways to address a wide range of ecological problems from endangered species to regional conservation planning. The objective of their research is to develop better conservation tools, techniques, and analyses.
- DIVERSITAS [www.icsu.org/diversitas/]
DIVERSITAS is an international global environmental change research program sponsored by the International Council for Science (ICSU), SCOPE (Scientific Committee on Problems of the Environment), IUBS (International Union of Biological Sciences), IUMS (International Union of Microbiological Societies) and UNESCO-MAB (Man and the Biosphere). Aiming to provide the scientific basis for an understanding of biodiversity loss.
- International Organization for Plant Information [lorenz.mur.csu.edu.au/iopi]
Links to plant checklists and databases.
- Societies and Organizations [www.ucmp.berkeley.edu/subway/nathistorg.html]
Links to organizations throughout the world with species databases.

4.12 INTERNATIONAL CONSERVATION NGOS

- Audubon Society [www.audubon.org]
Audubon is dedicated to protecting birds and other wildlife and the habitat that supports them. Its national network of community-based Audubon nature centers and chapters, environmental education programs, and advocacy on behalf of areas sustaining important bird populations engage millions of people of all ages and backgrounds in positive conservation experiences.

- **BirdLife International** [www.birdlife.org/]
This site allows for a search of globally threatened and lower risk bird species. Details of BirdLife International's Important Bird Areas may be found at www.birdlife.net. For over 20 years, BirdLife International has published information on globally threatened bird species in Red Data Books and checklists, and now birds are recognized as the best-documented group of all species. BirdLife is the official Listing Authority for birds for the IUCN Red List and works closely with the IUCN/Species Survival Commission Specialist Groups (see Section 3.4.3) and a worldwide network of experts in this capacity. The wealth of information generated by this program lays the foundation for BirdLife's work and guides its priorities for action. Readers can also check the books available at www.birdlife.org/species/programme.cfm
- **Center for Health, Ecological and Economic Dimensions (HEED) of Global Change Program** [heed.harvard.edu]
Research and publications on major marine ecological diseases (MMEDs). Online reports available, such as, *Marine Ecosystems: Emerging Diseases as Indicators of Change* and *Year of the Ocean Special Report on Health of the Oceans from Labrador to Venezuela*.
- **Centro Científico Tropical, Costa Rica** [www.cct.or.cr]
- **CÉSPEDES (Centro de Estudios del Sector Privado para el Desarrollo Sostenible) - Mexico** [www.cce.org.mx/cespedes/]
CÉSPEDES is an organization closely linked to the Consejo Coordinador Empresarial, CCE (National Enterprise Federation) and was created in 1994 by a group of major industrialists concerned about and supportive of sustainable development. CÉSPEDES is committed to helping Mexican enterprises improve their environmental performance in the following ways: 1) develop research that can show industry how to prevent environmental degradation; 2) propose efficient environmental regulation and public policies, and promote self-regulation mechanisms; 3) promote the effective enforcement of environmental law; 4) generate environmental databases; 5) coordinate and represent the private sector voice at international events; 6) help to prevent the deterioration of ecosystems and propose the creation of conservation areas; and, 7) develop training and educational materials and organize workshops, courses and conferences that promote eco-efficient practices among industries.
- **CIFOR (Centre for International Forestry Research – Indonesia)** [www.cifor.org]
- **Conservation International** [www.conservation.org]
Established in 1987, Conservation International (CI) is an environmental organization working in more than 30 countries around the globe to protect biodiversity and to demonstrate that human societies can live harmoniously with nature. CI works to conserve the earth's living heritage, our global biodiversity, by concentrating its efforts on the Earth's biodiversity hotspots – the 25 terrestrial places with the most densely packed biodiversity and the highest threat to them. The biodiversity hotspots give CI its focus and its strategy. Hotspot assessments are being completed for the global marine and freshwater ecosystems. The Center for Environmental Leadership in Business provides a new forum for collaboration between the private sector and the environmental community. Created in a partnership between CI and Ford Motor Company, the Center operates as a division of CI and is governed by a distinct executive board of leaders from the business and environmental communities. The Center engages the private sector worldwide in creating solutions to critical global environmental problems in which industry plays a defining role.
- **CSIRO - Australia, particularly CSIRO Sustainable Ecosystems** [www.cse.csiro.au]
- **Defenders of Wildlife** [www.defenders.org]
Offers information on endangered habitats and species.
- **Earthwatch Europe** [www.earthwatch.org/europe/]
Earthwatch promotes sustainable conservation of natural resources and cultural heritage by creating partnerships among scientists, the general public, educators and businesses. Earthwatch Europe hosts the UK Business and Biodiversity Resource Centre, funded by the UK Department for the Environment, Food and Rural Affairs (DEFRA). The aim of the Centre is to raise awareness of how and why the private sector should get involved with biodiversity and to develop and promote initiatives that will engage companies in this area. The Centre publishes the ongoing series of *Business and Biodiversity Guides* which address aspects of biodiversity to business and manages the UK Business and Biodiversity website: www.businessandbiodiversity.org.

- **Fauna and Flora International (FFI)** [www.fauna-flora.org]
Founded in 1903, FFI is the world's longest established international conservation organization. Its remit is to protect "the entire spectrum of endangered plant and animal species on the planet." Through partnerships, technical assistance and funding, FFI provides support to conservation initiatives throughout the world. It works with a wide variety of stakeholders, including bilateral and multilateral agencies, governments, local communities, NGOs, academic institutions and businesses.
- **Fondo Mexicano para la Conservacion de la Naturaleza, Mexico** [www.fmcn.org]
- **International Institute for Environment and Development (IIED)** [www.iied.org]
IIED is an independent NGO promoting sustainable development through collaborative research, policy studies, networking and knowledge dissemination. IIED works to address global issues such as mining, the paper industry and food systems.
- **International Institute for Sustainable Development (IISD)** [www.iisd.org/]
IISD publishes the Earth Negotiation Bulletin, one of the best available, and free, reporting services on global environment and development negotiations. The site also contains a large library of documents, resources, and links, as well as maintaining specialized web sites like Business and Sustainable Development: A Global Guide (www.bsdglobal.org/).
- **IPAM - Instituto de Pesquisa Ambiental da Amazônia** [www.ipam.org.br]
Amazon Environmental Research Institute, Brazil.
- **IUCN - The World Conservation Union** [www.iucn.org/about/index.htm]
Founded in 1948, IUCN - the World Conservation Union brings together about 80 States, 110 Government Agencies and 750 NGOs in a unique world partnership across some 141 countries. It is supported by a network of some 10,000 scientists and experts from 181 countries organized in six Commissions. As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. A central secretariat coordinates the IUCN program and serves the Union membership, representing their views on the world stage and providing them with the strategies, services, scientific knowledge and technical support they need to achieve their goals. Operations are increasingly decentralized and carried forward by an expanding network of regional and country offices, located primarily in developing countries. IUCN's web site maintains a sizable library of documents, databases, and relevant links.
- **Living Earth Foundation** [www.liveart2.dircon.co.uk]
LEF is an international NGO that encourages people to learn and work together to resolve environmental issues. Living Earth's programs address a wide range of issues from pollution to biodiversity, from population to cultural diversity and from agricultural practices to energy consumption.
- **ProNatura** [www.pronatura.org]
Established in Brazil in 1986, ProNatura is an NGO that specializes in sustainable development. ProNatura is one of the first Southern NGOs to internationalize its operations. Today it is a global organization with two principal hubs: Instituto Pró-Natura (Brazil), responsible for the Americas, and ProNatura International (France), responsible for Europe, Africa and Asia.
- **Royal Botanic Gardens, Kew** [www.kew.org]
Based in London, the Royal Botanic Gardens have the largest and most comprehensive living plant collection in the world, containing representatives of more than one in eight of all flowering plant species. Kew is first and foremost a scientific institution, with a mission to "enable better management of the Earth's environment by increasing knowledge and understanding of the plant and fungal kingdoms." To achieve this, Kew undertakes global research programs, supports conservation and sustainable use of plant resources in the UK, and is expanding both its collections and public awareness of them.
- **Smithsonian Institution** [www.si.edu/simab]
Based in Washington DC, the Smithsonian Institution's Monitoring and Assessment of Biodiversity Programme (SI/MAB) was created in 1986 to promote the conservation of biodiversity. Through an integrated approach of research and training, MAB provides scientific information and builds in-country capacity to foster the sustainable use of natural resources. The program focuses on the tropical and temperate forests of Latin America and the Caribbean, North America, Africa and Asia. MAB is involved in a variety of activities ranging from research projects, biodiversity assessment and monitoring programs to running education and training courses.

- **The Nature Conservancy** [nature.org]
The Nature Conservancy is a leading international, non-profit organization that preserves plants, animals and natural communities representing the diversity of life on Earth by protecting the lands and waters they need to survive. The Conservancy works in all 50 states in the U.S. and in 30 countries around the world. To date, the Conservancy and its more than one million members have been responsible for the protection of more than 14 million acres in the United States and have helped preserve more than 102 million acres in Latin America, the Caribbean, Asia and the Pacific.
- **United Nations Environment Programme (UNEP)** [www.unep.org]
Established in 1972, UNEP is active in a wide range of issues, notably, environmental information, assessment and research, including environmental emergency response capacity and strengthening of early warning and assessment functions; enhanced co-ordination of environmental conventions and development of policy instruments; freshwater; technology transfer and industry; and support to Africa. The UNEP World Conservation Monitoring Centre (WCMC) provides information for policy and action to conserve the living world; assessment and early warning studies in forest, dryland, freshwater and marine ecosystems; and research on endangered species and biodiversity indicators. The UNEP website contains substantial documents and resources posted online, and links to useful resources.
- **Wildlife Conservation Society (WCS)** [www.wcs.org]
WCS works from the Bronx Zoo in New York to save wildlife and wild lands throughout the world. WCS combines the resources of wildlife parks in New York with field projects around the world to inspire care for nature, provide leadership in environmental education, and help sustain biodiversity.
- **World Land Trust** [www.worldlandtrust.org]
Seeking to conserve the world's tropical forests, as well as other biologically important habitats, which are threatened by destruction.
- **World Resources Institute (WRI)** [www.wri.org]
WRI is an environmental think tank founded in 1982 with a mission to “move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations.” It is actively involved in the fields of the environment, resource management and environmental policy. WRI's business program

promotes corporate responsibility and accountability. It focuses on climate change, sustainable use – especially in the context of forestry, fisheries, and agriculture – and increasing access to information. The WRI web site contains most of the recent publications in electronic format, as well as links to related sites that it helped to develop (e.g. Millennium Assessment, <http://www.millenniumassessment.org>; Global Forest Watch, <http://www.globalforestwatch.org>).

- **WWF** [www.wwf.org]
Since its inception in 1961, WWF has worked to conserve nature and ecological processes through a combination of action on the ground, national and international advocacy work to establish appropriate policies, and international campaigns to highlight and demonstrate solutions to crucial environmental problems.

4.13 PUBLICATIONS

4.13.1 General

- **Business and Biodiversity Publications** [www.businessandbiodiversity.org/publications/index.html]
- **Center for Environmental Leadership in Business** [www.conservation.org/xp/CIWEB/publications/books_papers/policy_papers/index.xml]
Reinventing the Well: Approaches to Minimizing the Environmental and Social Impact of Oil Development in the Tropics and *Lightening the Lode: A Guide to Responsible Large-Scale Mining*.
- **Earthwatch Europe** [www.earthwatch.org/europe/publications.html]
Earthwatch publications on Business and Biodiversity, including *Business & Biodiversity: a UK business guide for understanding and integrating nature conservation and biodiversity into environmental management systems*, and the companion volume, *Case Studies on Business and Biodiversity*, March 2000, prepared for the UK Round Table on Sustainable Development.
- **IIED - Biodiversity and Livelihoods Issues** [www.iied.org/blg/pubs/biolivelihood.html]
- **OECD Handbook of Biodiversity Valuation (2002), and biodiversity publication series** [www.oecd.org/]
In 1999, the OECD Working Group on Economic Aspects of Biodiversity (WGEAB) embarked on a project focusing on “...the monetary and non-monetary

evaluation of the benefits of biodiversity and biological resources.” This publication represents the main output of this project. It is supported by nine country case studies and by a compendium of related papers (OECD, 2001 – *Valuation of Biodiversity Benefits: Selected Studies*). The *Handbook of Biodiversity Valuation* is aimed at policy-makers and practitioners interested in using valuation tools for the effective management of biodiversity. Other titles include: *Saving Biological Diversity: Harnessing Markets for Conservation and Sustainable Use*, (2002); and *Handbook of Incentive Measures for Biodiversity: Design and Implementation* (1999).

- **Plantlife International** [www.plantlife.org.uk/html/goods_publications.htm] *Identifying Important Plant Areas - A Site Selection Manual for Europe*
The manual is focused on providing a framework for parties/governments worldwide to achieve target 5 of the CBD’s Global Plant Conservation Strategy (i.e. protection of 50% of the world’s most important areas for plant diversity assured by 2010) and includes guidelines for site selection criteria, a questionnaire template etc. This manual should form an extremely useful reference for those working in biodiversity (especially plant) conservation, use, mapping, planning, etc. Copies are currently (April 2003) obtainable from andy.brown@plantlife.org.uk and should be available from Plant International’s website noted above in the future.
- **Smithsonian Institution Monitoring and Assessment of Biodiversity** [www.si.edu/simab] *Connecting with the Tapestry of Life*. Published by the Smithsonian Institution.
- **World Business Council for Sustainable Development** [<http://biodiversityeconomics.org/business/handbook/>]
WBCSD continues to publish a number of biodiversity-related reports, given their focus on shrinking the ecological impact of business operations. IUCN and WBCSD joined with Earthwatch Institute in 2002 to publish *Business & Biodiversity: The Handbook for Corporate Action*. The Handbook provides information on the business case for biodiversity, an overview of hot issues, and guidance on biodiversity management strategies. Throughout this electronic version, links to extended case studies are provided. An earlier version of the Handbook, *Business and Biodiversity: A Guide for the Private Sector* by Stone, D., Ringwood, K. and Vorhies, F, was published by the WBCSD in 1997 in collaboration with the IUCN.

- **World Bank** [www.worldbank.org/]
The World Bank has a substantial, wide-ranging online set of documents and resources related to issues facing biodiversity, sustainable development, and industrial practices. The onsite search engine is one good way to locate files. There are also specific sections, such as New Ideas in Pollution Regulation (NIPR), which includes entire books online, such as, *Greening Industry: New Roles for Communities, Markets, and Governments*; and a Biodiversity and Environmental Impact Assessment toolkit.

4.13.2 Journals Relating to Biodiversity, Ecology and Oil and Gas Operations

A comprehensive list of biodiversity and ecology e-journals (hosted by the University of Southampton, UK) can be found at: www.library.soton.ac.uk/info/subjects/2039ej/index.shtml

A similar list of journals containing information on various environmental and resource management aspects of offshore oil and gas operations can be found at www.offshore-environment.com/journals.html. A selection of the most relevant journals (with website information) derived from these two sites is listed below:

- *Accidents Associated with Oil & Gas Operations on the Outer Continental Shelf* [<http://www.mms.gov>]
- *Acta oecologica* [<http://www.elsevier.com/locate/issn/1146609X>]
- *Advances in Environmental Research* [<http://www.elsevier.com/locate/issn/10930191>]
- *African Journal of Ecology* [<http://www.blackwellpublishing.com/journal.asp?ref=0141-6707>]
- *American Journal of Botany* [<http://www.botany.org/>]
- *Annual Review of Ecology and Systematics* [<http://intl-ecolsys.annualreviews.org/>]
- *Annual Review of Energy and the Environment* [<http://energy.annualreviews.org>]
- *Applied Soil Ecology* [<http://www.elsevier.com/locate/issn/09291393>]

- *Aquatic Conservation: Marine and Freshwater Ecosystems* [<http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=5593>]
- *Aquatic Ecology* [<http://www.kluweronline.com/issn/1386-2588/contents>]
- *Aquatic Ecosystem Health & Management* [<http://www.elsevier.com/locate/issn/14634988>]
- *Aquatic Living Resources* [<http://www.elsevier.com/locate/issn/09907440>]
- *Aquatic Microbial Ecology* [<http://www.int-res.com/journals/ame/>]
- *Aquatic Toxicology* [<http://www.elsevier.com/locate/issn/0166445X>]
- *Biological Conservation* [<http://www.elsevier.com/locate/issn/00063207>]
- *Bioscience* [<http://www.aibs.org/bioscienceonline/>]
- *BMC Ecology* [<http://www.biomedcentral.com/1472-6785/>]
- *Coastal Briefs (Woods Hole Oceanographic Institution)* [www.whoi.edu/coastal-briefs]
- *Conservation Biology* [www.conbio.org/]
- *Conservation Ecology* [www.consecol.org/journal]
- *Continental Shelf Research* [<http://www.elsevier.nl/locate/csr>]
- *Diversity and Distributions* [<http://www.blackwellpublishing.com/journals/ddi/>]
- *Eco-Management and Auditing* [<http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=5354>]
- *Ecography* [<http://www.blackwellpublishing.com/journal.asp?ref=0906-7590>]
- *Ecological Applications* [<http://www.esa.org/>]
- *Ecological Economics* [<http://www.elsevier.com/locate/issn/09218009>]
- *Ecological Engineering* [<http://www.elsevier.com/locate/issn/09258574>]
- *Ecological Entomology* [<http://www.blackwellpublishing.com/journal.asp?ref=0307-6946>]
- *Ecological Indicators* [<http://www.elsevier.com/locate/issn/1470160X>]
- *Ecological Management and Restoration* [<http://www.blackwellpublishing.com/journal.asp?ref=1442-7001>]
- *Ecological Modelling* [<http://www.elsevier.com/locate/issn/03043800>]
- *Ecological Monographs* [<http://www.esa.org/>]
- *Ecological Research* [<http://www.blackwellpublishing.com/journal.asp?ref=0912-3814>]
- *Ecology* [<http://www.esa.org/>]
- *Ecology Letters* [<http://www.blackwellpublishing.com/journal.asp?ref=1461-023X>]
- *Ecology of Freshwater Fish* [<http://www.blackwellpublishing.com/journal.asp?ref=0906-6691>]
- *Ecosystem Health* [www.blacksci.co.uk/~cgilib/bsinc.bin?journal=ecosystem]
- *Ecosystems* [<http://link.springer.de/link/service/journals/10021/index.htm>]
- *Ecotoxicology and Environmental Safety* [<http://www.academicpress.com/ees>]
- *Environment and Energy Daily* [<http://www.eenews.net>]
- *Environmental Forensics* [<http://www.elsevier.com/inca/publications/store/6/2/2/8/2/0/>]
- *Energy Exploration and Exploitation* [<http://www.multi-science.co.uk/eee.htm>]
- *Energy Studies Review* [<http://www.socsci.mcmaster.ca/~mies/esr.html>]
- *Environmental Impact Assessment Review* [<http://www.elsevier.com/locate/issn/01959255>]
- *Environmental Law and Management* [<http://www3.interscience.wiley.com/cgi-bin/jtoc?ID=60501797>]

- *Environmental Management* [<http://link.springer.de/link/service/journals/00267/index.htm>]
- *Environmental Monitoring and Assessment* [<http://www.kluweronline.com/issn/0167-6369>]
- *Estuarine, Coastal and Shelf Science* [<http://www.academicpress.com/ecss>]
- *European Environment* [<http://www.interscience.wiley.com/jpages/0961-0405/aims.html>]
- *Forest Ecology and Management* [<http://www.elsevier.com/locate/issn/03781127>]
- *Forest Policy and Economics* [<http://www.elsevier.com/locate/issn/13899341>]
- *Freshwater Biology* [<http://www.blackwellpublishing.com/journal.asp?ref=0046-5070>]
- *Functional Ecology* [<http://www.britishecologicalsociety.org/>]
- *Global Ecology and Biogeography* [<http://www.blackwellpublishing.com/journals/geb/>]
- *Human and Ecological Risk Assessment* [www.crcpress.com]
- *Journal of Animal Ecology* [<http://www.blackwellpublishing.com/journal.asp?ref=0021-8790>]
- *Journal of Applied Ecology* [<http://www.britishecologicalsociety.org/>]
- *Journal of Aquatic Ecosystem Stress and Recovery* [<http://www.kluweronline.com/issn/1386-1980>]
- *Journal of Biogeography* [<http://www.blackwellpublishing.com/journals/jbi/>]
- *Journal of Ecology* [<http://www.britishecologicalsociety.org/>]
- *Journal of Environmental Economics and Management* [<http://www.academicpress.com/jcem>]
- *Journal of Environmental Management* [<http://www.academicpress.com/jem>]
- *Marine Environmental Research* [<http://www.elsevier.nl/inca/publications/store/4/0/5/8/6/5/>]
- *Marine Policy* [<http://www.elsevier.nl/inca/publications/store/3/0/4/5/3/index.htm>]
- *Marine Pollution Bulletin* [<http://www.elsevier.nl/inca/publications/store/4/0/0/>]
- *Molecular Ecology* [<http://www.blackwellpublishing.com/journal.asp?ref=0962-1083>]
- *Nature* [www.nature.com/]
- *Ocean & Coastal Management* [<http://www.elsevier.nl/inca/publications/store/4/0/5/8/8/9/index.htm>]
- *Oceanographic Literature Review* [<http://www.elsevier.nl/inca/publications/store/4/9/0/>]
- *Oceanologica Acta* [<http://www.elsevier.nl/inca/publications/store/6/0/0/7/8/7/>]
- *Offshore Engineer Magazine* [<http://www.oilonline.com/oe/>]
- *Oil Spill Intelligence Report* [<http://www.aspenpublishers.com/environment.asp>]
- *Restoration Ecology* [<http://www.blackwellpublishing.com/journal.asp?ref=1061-2971>]
- *Science* [www.sciencemag.org/]
- *Science of the Total Environment* [<http://www.elsevier.nl/inca/publications/store/5/0/3/3/6/0/>]
- *Spill Science & Technology Bulletin* [www.elsevier.nl/inca/publications/store/3/0/3/0/6/]
- *Systematic Biology* [<http://systbiol.org/>]
- *Systematic Botany* [<http://www.sysbot.org/>]
- *Systematic Entomology* [<http://www.blackwellpublishing.com/journal.asp?ref=0307-6970>]
- *Systematic Zoology* [<http://systbiol.org/>]

-
- *Trends in Ecology and Evolution*
[<http://www.elsevier.com/locate/issn/01695347>]
 - *World Oil* [<http://www.worldoil.com/>]