

# UN ENVIRONMENTAL PROGRAMME

**Questioning the Role of States in Preserving Biodiversity  
Hotspots**

**BACKGROUND PAPER**



Reference: Convention on Biological Diversity, [www.cbd.int](http://www.cbd.int)

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## Background

Biological diversity, also known as biodiversity, is the term for the full variety of life on Earth. Over 1.75 million species have been identified to date ((Duffy 2009), although it is anticipated that over 10 million species exist (Handwerk 2002). Preserving biodiversity is essential for human existence and for the preservation of life on Earth. However, biodiversity is under extreme threat from human intervention, namely land use changes through deforestation, development, industrial pollution, industrial agriculture, unsustainable resource exploitation and from climate change. It is estimated that three species will go extinct every hour and five million species predicted to become extinct by the end of the century (Clarke 2006). In light of the importance of biodiversity and the rapid rate of species extinction, the UN has declared 2010 the international year of Biodiversity.

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Biodiversity is the foundation of our societies, and we rely on it to sustain nearly every aspect of our lives. Ecological services are essential for our survival and include such concepts such as soil conservation, climate stability and air and water purification. Countless medicines and benefits of biodiversity are expected to exist within biodiversity hotspots which are being destroyed before they can be discovered. Furthermore, biodiversity has intrinsic value and is necessary for all species to continue living by providing habitats and food. Biodiversity is also central to culture and the livelihoods of millions of Indigenous peoples. A loss of biodiversity results in a loss of culture and irreplaceable ecological functions and species. Despite attempts at preventing biodiversity loss, the rate of loss is still accelerating at an unprecedented rate and threatening existence of life on earth. Addressing the loss of biodiversity is urgent and essential.

## What are Biodiversity Hotspots?

Ever since humans began to realise the true impact the way we exist has had on the environment, efforts have been made attempting to curb our devastating effect on the Earth's resources in a way that has little negative consequences for our continuing way of life and further development. These issues have gained particular attention of late, and though opinion is still divided, there is a general acknowledgement that humans must change our way of life if we are to conserve the rich beauty and resources our planet provides.

As far back as 1988, a group comprising of both conservationists and scientists,



lead by ecologist Norman Myers, realised the need to implement a system of protection for some of the more fragile eco-systems on our planet. Myers and his team recognised that conservationists “are far from able to assist all species under threat, if only for lack of funding” (Myers, 1988) and set about to develop a system to support vulnerable species and ecosystems in a cost-efficient manner. This is the basic premise behind the concept of biodiversity hotspots. In his 1988 paper entitled “Biodiversity Hotspots for Conservation Priorities” Myers first identified ten tropical forest “hotspots” characterised both by exceptional levels of plant endemism and by serious levels of habitat loss. In 1990 Myers added a further eight hotspots, including four Mediterranean-type ecosystems (Conservation International). Conservation International adopted Myers’ hotspots as its institutional blueprint in 1989, and in 1996, the organisation made the decision to undertake a reassessment of the hotspots concept, including an examination of whether key areas had been overlooked (Conservation International).

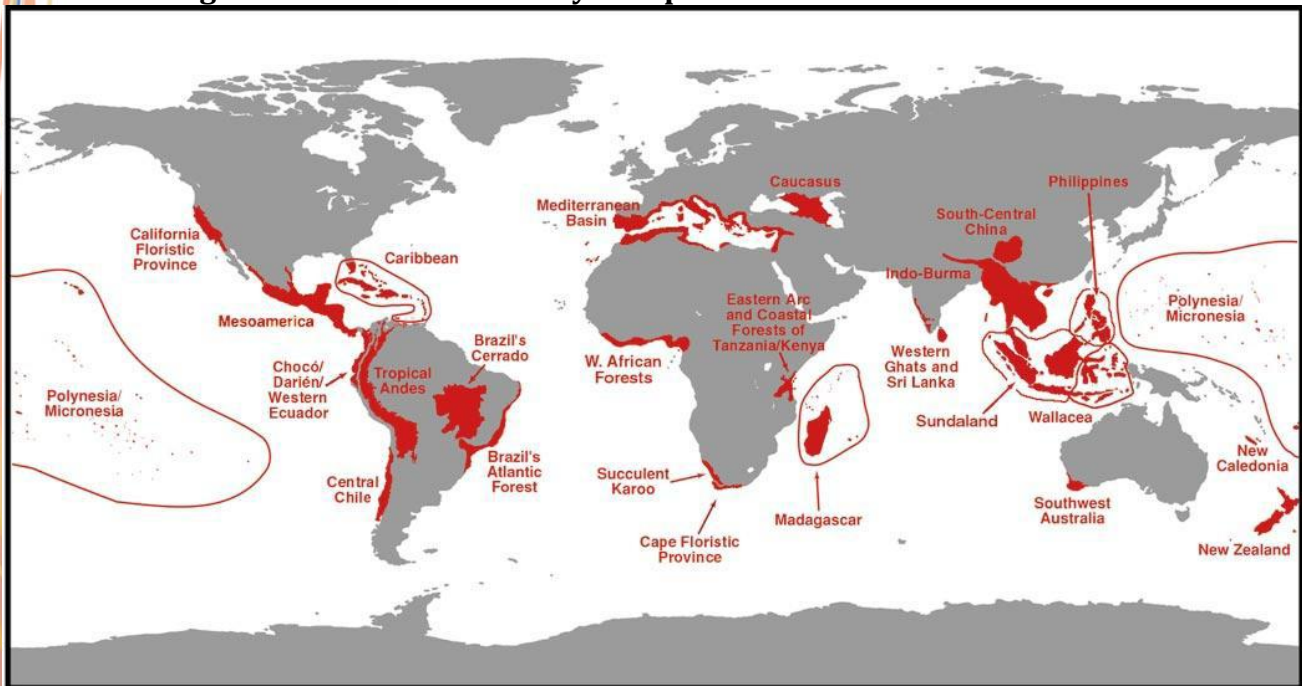
Three years later an extensive global review was undertaken, which introduced quantitative thresholds for the designation of biodiversity hotspots. To qualify as a hotspot, a region must meet two strict criteria: it must contain at least 1,500 species of vascular plants (> 0.5 percent of the world’s total) as endemics, and it has to have lost at least 70 percent of its original habitat (Myers, 1988).

In sum, the 25 hotspots contain the sole remaining habitats of 44% of the Earth's plant species and 35% of its vertebrate species (Myers, 1988), and these habitats face a high risk of elimination. In fact, if the present mass extinction of species to proceed virtually unchecked, between one-third and two-thirds of all species would be likely to disappear within the foreseeable future (Conservation International). The hotspots analysis indicates that much of this problem could be countered through protection of the 25 hotspots.

Specific locations that are classified as biological hot-spots include: [California Floristic Province](#), [Caribbean Islands](#), [Madrean pine-oak woodlands](#), [Mesoamerica](#), [Atlantic Forest](#), [Cerrado](#), [Chilean Winter Rainfall-Valdivian Forests](#), [Tumbes-Chocó-Magdalena](#), [Tropical Andes](#), [Caucasus](#), [Irano-Anatolian](#), [Mediterranean Basin](#), [Mountains of Central Asia](#), [Cape Floristic Region](#), [Coastal Forests of Eastern Africa](#), [Eastern Afromontane](#), [Guinean Forests of West Africa](#), [Horn of Africa](#), [Madagascar and the Indian Ocean Islands](#), [Maputaland-Pondoland-Albany](#), [Succulent Karoo](#), [East Melanesian Islands](#), [Eastern Himalaya](#), [Indo-Burma](#), [Japan](#), [Mountains of Southwest China](#), [New Caledonia](#), [New Zealand](#), [Philippines](#), [Polynesia-Micronesia](#), [Southwest Australia](#), [Sundaland](#), [Wallacea](#), [Western Ghats](#) and [Sri Lanka](#). These are highlighted in the figure below.



**Figure 1: World Biodiversity Hotspots**



Reference: M Norman 2000: 853

## Mandate

During the 1992 Earth Summit in Rio de Janeiro, world leaders met and agreed upon a strategy for sustainable development, which is about meeting the needs of the present generation without taking away from the needs of future generations (UN Division for Sustainable Development). One of the key agreements resulting from the Earth Summit was the Convention on Biological Diversity ([www.cbd.int](http://www.cbd.int)). This convention was designed with three main aims: to conserve biodiversity, to utilise biodiversity sustainably and to ensure the fair and equitable sharing of genetic resources (<http://www.cbd.int/convention/about.shtml>) and also **established the target of halting biodiversity loss by 2010**. The Convention has over 193 states as signatories and will be meeting this year to review and revise the Strategic Plan for the Convention and to establish new biodiversity targets.

**The Convention is a subsidiary body of the United Nations Environment Program (UNEP).** UNEP was established in 1972 and is a UN organ responsible for giving a voice to the environment. In accordance to their mission, the Programme aims to build a world that will improve people's quality of life without compromising the Earth for future generations. The Programme's mandate stems from General Assembly Resolution 2927 which charges it to maintain awareness of emerging environmental issues, to address global and regional environmental problems, and to facilitate the progression of environmental policy. Thus, the Programme promotes the sustainable development of the global environment, and their work includes assessing environmental conditions, and developing instruments and global institutions for wise environmental management.



The Convention at present requires parties whom are signatories to:

- Develop national biodiversity strategies and actions plans which will then be incorporated into their national environment and development plans.
  - Identify and monitor components of biodiversity which need to be conserved
  - Establish protected areas to conserve biodiversity and promote suitable development within those regions
  - Respect and preserve traditional, indigenous knowledge of local communities for biodiversity preservation
  - Preventing the introduction of and eradicating introduced species
  - Educating people on the importance of preserving biodiversity
  - Reporting on achievement towards each country's biodiversity goals.
- (Secretariat of the Convention on Biological Diversity 2000)

Your task as delegates will be to formulate a suitable resolution for the revised Strategic Plan of the Convention, focusing on addressing the roles of states in preserving biodiversity hotspots.

## Core Content

In formulating the strategic plan to preserve biodiversity hotspots, a number of issues need to be considered. Biodiversity is of value to all countries, however it has differing values and uses for different countries and cultures. Within developed countries biodiversity is often valuable asset for tourism and nature conservation parks are often established. However, development pressures still result in substantial biodiversity loss, with preservation often undervalued.

Whilst developed nations may be able to afford the space and economic product to put aside nature reserves to be used for tourism, this is not always possible for developing nations whom often have large populations with many living in poverty. Within developing nations biodiversity regions are often under threat from a number of activities and pressures resulting from the need and desire to develop and the often weak and corrupt political structures. Issues such as illegal logging, poaching and deforestation tend to threaten biodiversity hotspots in developing regions. Within Indonesia, palm oil plantations threaten vast forest areas and Indigenous communities. However, development is a primary issue for Indonesia as it seeks to develop its economy.

Biodiversity nature conservation areas will need to be established, with restrictions placed on what activities can be conducted within those regions. This will require enforcement and monitoring, as without enforcement biodiversity reserves can become completely inefficient, with local communities exploiting them as they are areas rich in natural resources.

Many Indigenous peoples rely upon biodiversity hotspots for their livelihoods and the destruction of biodiversity and also the creation of nature refuges can threaten their livelihoods and cultures. Tensions can exist between the uses of



land by Indigenous peoples and the aims of conservation. However, if biodiversity conservation is to be effective, the different stakeholders and their needs will need to be addressed and considered. The roles and knowledge of Indigenous peoples also need to be utilised in preservation of land and the establishment of nature refuges.

Methods are needed whereby the conservation of biodiversity is mandated and of value towards all countries. A higher value needs to be placed on biodiversity than the development of land, with greater education as to the importance of biodiversity and its ecological functions. In order for this to happen, international treaties will need to be established as will new industries in ecotourism, sustainable forestry and fisheries. International trade agreements, such as in the prevention of imported rainforest timber, may be established and enforced.

International support for the preservation will require international funding. Current treaties, such as the RAMSAR convention, will be of benefit in conserving biodiversity hotspots and should be utilised where appropriate.

An understanding of the interlinked nature of ecosystems and species will be required, as an isolated approach at preserving only select regions without understanding the impact of surrounding regions will not be effective. Holistic and well formulated initiatives to conserve biodiversity that consider all the different uses, threats and stakeholder views will be necessary.

#### **Points to consider in the formulation of a resolution:**

- How will financial support be offered to developing countries for the preservation of biodiversity?
- What enforcement mechanisms will be put in place to prevent illegal activities within nature reserves and to ensure that governments keep to their commitments?
- What percent of country containing a biodiversity hotspot will be required for preservation and what form will that preservation take?
- What bodies need to be established and what existing bodies need to be called upon for the implementation of strategies and actions for biodiversity?
- Ensure that representative vegetation types have been covered.
- International agreements will be required where biodiversity hotspots extend across a region.
- In order to achieve this, a financial funding model will need to be developed that supports conservation of biodiversity and nature reserves. Methods of enforcement and site selection and preservation will then need to be discussed.
- What activities will be accepted in biodiversity hotspots?
- The role and rights of indigenous peoples and traditional knowledge.



## Reference List

“Biodiversity Hotspots for Conservation Priorities” (1988) Myers, N et al  
<http://web.ipb.ac.id/~mujizat/jurnal/Myers%20et%20al%202000.pdf>

The Convention on Biological Diversity (official home page)  
<http://www.cbd.int/convention/about.shtml>

Conservation International’s Homepage (very in-depth explanations of Biodiversity Hotspots) <http://www.biodiversityhotspots.org>

Preserving Biodiversity and Promoting Biosafety  
<http://www.oecd.org/dataoecd/4/4/34932656.pdf>

How the Convention on Biological Diversity promotes nature and human well-being  
[www.cbd.int/iyb/doc/prints/cbd-sustain-en.pdf](http://www.cbd.int/iyb/doc/prints/cbd-sustain-en.pdf)

Convention on Biological Diversity (background and Convention text)  
<http://www.tematea.org/?q=node/4&PHPSESSID=d465ae521594dfe87c624e27f00ded96>

Encyclopaedia of the Earth – Biodiversity Hotspots Collection  
[http://www.eoearth.org/article/Biodiversity\\_hotspots\\_\(collection\)](http://www.eoearth.org/article/Biodiversity_hotspots_(collection))