

# Biodiversity Fact Sheet

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## *Some basic facts about Biodiversity<sup>1</sup>*

Biodiversity is the measure of the number, variety and variability of living organisms. It includes diversity within species, between species and among ecosystems. Human actions have led to irreversible losses in terms of diversity of life on Earth; these losses have been more rapid in the past 50 years than ever before in human history.

### What are the current trends in biodiversity loss?

Since 2000, 6 million hectares of primary forest have been lost annually. In the Caribbean, average hard coral cover declined from 50% to 10% in the last three decades. 35% of mangroves have been lost in the last two decades. The average abundance of species is declining – 40% loss between 1970 and 2000. Species present in rivers, lakes and marshlands have declined by 50%. Declines are evident in amphibians, African mammals, birds in agricultural lands, corals and commonly harvested fish species (Figure 1). Habitats, such as forests and river systems are becoming fragmented, affecting their ability to maintain biodiversity and deliver ecosystem services. The intensification of fishing has led to a decline of large fish. In the North Atlantic, their numbers have declined by 66% in the last 50 years.

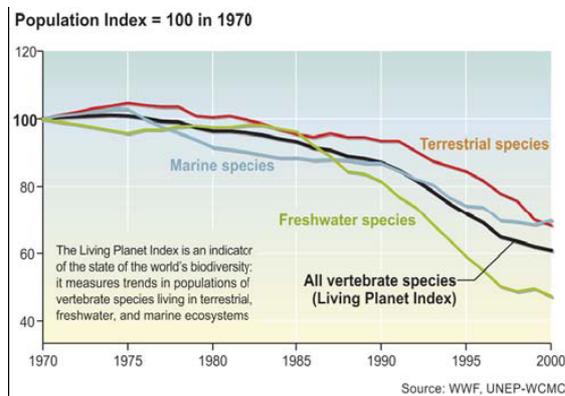


Figure 1. The Living Planet Index shows the declining trends in populations of species.

### Threats to biodiversity

Many animal and plant populations have declined in numbers, geographical spread, or both. Species extinction is a natural part of the Earth's history. Human activity has increased the extinction rate by at least 100 times compared to the natural rate.

Five major threats to biodiversity have been identified: habitat change, such as fragmentation of forests; invasive alien species that establish and spread outside their normal distribution; overexploitation of natural resources; and pollution, particularly by excessive fertilizer use leading to excessive nutrients in soil and water (Figure 2).

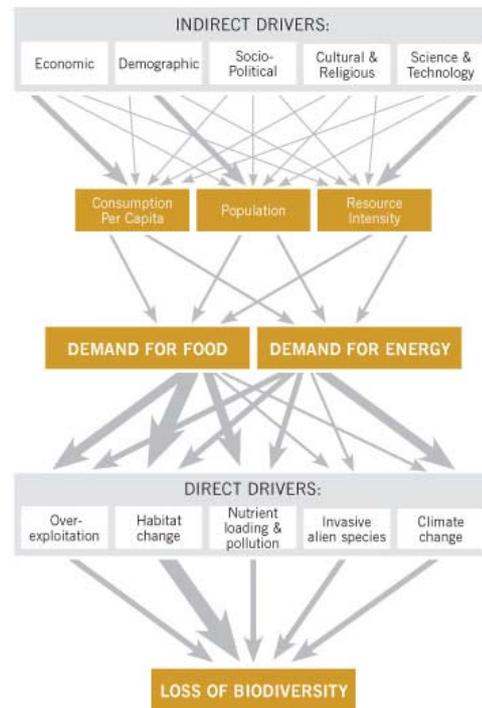


Figure 2. Direct and indirect factors driving biodiversity loss

## *Impacts and risks*

Biodiversity loss has negative effects on several aspects of human well-being, such as food security, vulnerability to natural disasters, energy security and access to clean water and raw materials.

Many indigenous peoples and local communities have an integral and intimate link with the natural resources and ecosystems surrounding them. Their knowledge base, cultural traditions and practices relating to biological and other natural resources are a critical asset for the conservation of biodiversity. Throughout history their role has been enormous in conserving a range of natural environments for a variety of purposes, economic as well as spiritual and aesthetic. Contrary to some popular images, there are very few places in the world where wild biodiversity exists in isolation from human communities and activities, and this has been true for millennia.

The loss of biological diversity destabilizes ecosystems and makes them more vulnerable to shocks and disturbances such as hurricanes and floods, which may further reduce the ability of environments to provide for human well-being. These negative consequences are felt most harshly by the rural poor, who rely most directly on the services provided by local ecosystems for their well-being (Figure 3).<sup>2</sup> For this reason, biodiversity loss poses a significant barrier to meeting the Millennium Development Goals. Biodiversity underpins many of our cultural and spiritual values.

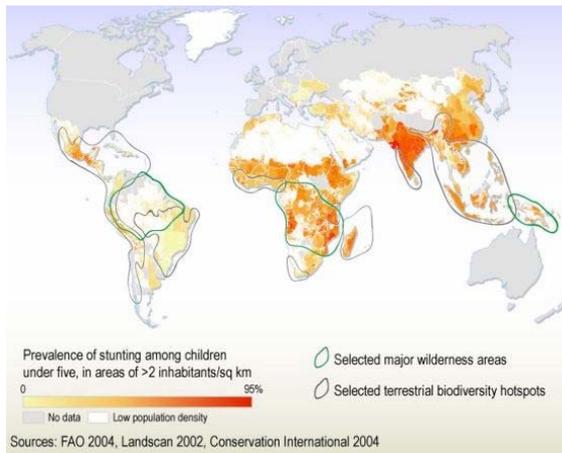


Figure 3. Global Poverty-Biodiversity Map. Areas where high poverty and high population density coincides with high biodiversity may indicate areas in which poor people likely have no other choice than to unsustainably extract resources, in turn threatening biodiversity.

To halt biodiversity loss, two main types of conservation options are being employed, in-situ conservation and ex-situ conservation. An example of an in-situ conservation effort is the setting-up of protected areas which currently cover about 12% of the Earth's land surface. Examples of ex-situ conservation efforts, by contrast, would be planting germplasm in seedbanks, or growing seedlings in nurseries. Such efforts allow the preservation of large populations of plants with minimal genetic erosion.

In-situ is usually seen as the ideal conservation strategy. Protected areas are growing in number and scale, fuelled by the commitment of various nations to the Convention on Biological Diversity and the UN Millennium Development Goals. However, these indicators are fairly crude and need to be complemented by further information on the level of protection afforded to biodiversity and the effectiveness of management. The role of protected areas in reducing the rate of loss of biodiversity is not yet fully understood because systematic data are lacking. Some conservationists believe both options are needed to ensure proper preservation. Others reckon that ex-situ conservation can provide a backup solution to in-situ conservation projects.

Conservation and preservation are controversial terms in developing countries because their implementation usually implies exclusion of the local populace from an area considered as a 'biodiversity hotspot'. In worst cases violent displacement out of their ancestral lands is implemented in the name of biodiversity conservation. This is partly why implementation of in-situ conservation is viewed as less feasible than ex-situ efforts. On the other hand, ex-situ conservation efforts initiate another set of issues, e.g., promoting 'green revolution' and developing genetically modified organisms (GMOs) to improve agricultural efficiency and address food insecurity in hunger stricken countries, but bringing about questions regarding impacts on the survival of indigenous and endemic species.

The signing parties to the Convention on Biological Diversity have agreed that developing countries require

particular support to enable them to carry out measures required to conserve biodiversity and reach the 2010 target, in particular least developed countries, small island developing states, and countries with economies in transition. It is estimated from the available data that the total funds set aside as aid to developing countries for biodiversity had declined since 1998 from about US\$ 1 billion per year, to about US\$ 750 million.<sup>3</sup>

### ***What we can do about biodiversity loss***

- Identify local conservation areas with the communities we accompany and serve, and promote the recognition of these areas in protected area management plans and national biodiversity action plans.
- Encourage governments to collaboratively plan and manage protected areas with the local population.
- Integrate biodiversity considerations into poverty reduction strategies in order to ensure their sustainability.
- Improve agricultural productivity with due regard not only to the needs of urban populations but to the changing needs and capacities of rural communities, especially indigenous cultures.
- Acquire an understanding of equity and cultural issues surrounding bio-prospecting, wildlife trade and indigenous intellectual property rights.
- Implement a mixture of planning, regulations and incentive measures to alleviate the pressure of expansion of the food and agriculture sector on biodiversity.
- Promote planting of indigenous species, use of organic fertilizers and raise awareness on invasive species.
- Moderate the demand for meat by the more affluent sectors of society and halt over-fishing and other destructive fishing practices
- Integrate proactive measures to protect biodiversity with the trade and economic agenda. Trade liberalization will accelerate biodiversity loss if not well-planned.
- Develop tools for the valuation of biodiversity, with due recognition of indigenous intellectual property rights.

Global society is now realizing that biodiversity is a positive human value. Sectors of society and communities are entering into strategic engagements, reaching global political forums. Younger generations particularly are now making biological diversity as an area of responsibility, communication and accountability.

<sup>1</sup> Convention on Biological Diversity: Global Biodiversity Outlook 2 (March 2006) <http://www.cbd.int/gbo2/main-messages.shtml>

<sup>2</sup> [http://maps.grida.no/go/graphic/global\\_poverty\\_biodiversity\\_map\\_01/08/07](http://maps.grida.no/go/graphic/global_poverty_biodiversity_map_01/08/07)

<sup>3</sup> <http://www.greenfacts.org/en/global-biodiversity-outlook/1-2/8-goals-convention.htm#3>