



Forest Biodiversity

More than just Trees

More than just the trees, forest biodiversity encompasses the multitude of plants, animals and micro-organisms that inhabit forest areas and their associated genetic diversity. Forest biodiversity can be considered at many different levels, including the ecosystem, landscapes, species, populations and genetics. The more diverse a forest is — the more different species with individual genetic codes live in it — the better this forest will be able to cope with changing environments, for example, the severe impacts that scientists predict as a consequence of climate change.

The level of complexity of life in a forest is also important to maintain “forest ecosystem services” for humans. These services include the filtration and storage of potable water, the sequestration of carbon from the atmosphere, recreation, and numerous cultural, social and economic benefits that forests provide. For example, it is estimated that some 80% of people in developing countries rely on traditional medicines, and up to half of these medicinal substances originate from plants, mostly from tropical forests.

While forest biodiversity is a key factor for a healthy and intact environment, and for human well-being, it is increasingly under pressure. More than six million hectares of primary tropical forests, which are especially rich in biodiversity, are lost each year. This is an area 425 times the size of the city of Bonn and its surrounding municipalities. Up to 100 animal and plant species per day are believed to disappear together with these tropical forest habitats. With this loss of biodiversity, we also lose the genetic code that might help us to find a future cure to cancer or other diseases, and at the same time, forest ecosystems lose the genetic diversity that might enable them to adapt to a changing environment.

Much of the recent decline of forest biodiversity is caused by human activity. The conversion of forests to agricultural land, overgrazing, unmitigated shifting cultivation, unsustainable forest management, introduction of invasive alien plant and animal species, infrastructure development, mining and oil exploitation, human-induced forest fires, pollution and climate change all have taken a toll on forest biodiversity. As a result, the lowered resilience of forest ecosystems makes it more difficult for them to cope with changing environmental conditions.

Why it is important:

- Forests are one of the most biologically rich terrestrial systems. Together, tropical, temperate and boreal forests offer diverse sets of habitats for plants, animals and micro-organisms, and harbour more than two thirds of the world’s terrestrial species.
- Natural forests are one of the most important and stable stores of carbon. But emissions resulting from deforestation are estimated to contribute as much as 20% to global annual greenhouse gas emissions. At the same time, forests are essential to adaptation to climate change.
- Forests and forest biodiversity are innately linked to ecosystem and human health and well-being. For example, urban areas often depend on forested areas for their water supply. More than three quarters of the world’s accessible fresh water comes from forested catchments.



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- Estimates suggest some 13 million hectares of the world's forests are lost due to deforestation each year, 6 million hectares of which are primary forests, mostly in tropical regions. The annual net loss (i.e. after accounting for afforestation and reforestation) of forest area between 2000 and 2005 was 7.3 million hectares (equivalent to the net loss of 0.18 percent of the world's forests).

What the CBD is doing:

Forests have been on the international political agenda since the 1992 “Earth Summit,” — the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil. While UNCED did not agree on a proposed international instrument on forests, it is clear that forests are central to reaching the objectives of the three Rio Conventions (the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, and the United Nations Convention to Combat Desertification). An international arrangement on forests developed out of UNCED, ultimately leading to the adoption of a non-legally binding instrument on all types of forests in 2007, in the framework of the United Nations Forum on Forests (UNFF).

The CBD is addressing the loss of forest biodiversity through a comprehensive programme of work, which was adopted in 2002. This programme contains 129 actions, which are supposed to be implemented by Parties to the CBD according to their national priorities. The actions are grouped into three elements: 1. Conservation, Sustainable Use, and Access and Benefit Sharing, 2. Socio-economic framework, and 3. Knowledge, Assessment and Monitoring. Individual actions address pertinent issues such as the fragmentation of forest habitats, forest fires, invasive alien species, market failures, forest certification and the establishment of forest protected areas.

The parties to the CBD agreed to strengthen their efforts to promote forest diversity, and delegates at COP 9 will discuss and address new challenges for forest biodiversity, such as the use of genetically modified trees, or the production of biomass for energy, as well as new opportunities, such as the efforts to reduce greenhouse gas emissions from deforestation and forest degradation (REDD).

For more information:

Forest biodiversity: www.cbd.int/forest

COP decisions on forest biodiversity: www.cbd.int/forest/decisions.shtml

Tools and guidelines: www.cbd.int/forest/tools.shtml

Documents: www.cbd.int/forest/Docs.shtml

