Biodiversity Hotspots

DEFINITION

Large regions containing exceptional concentrations of plant endemism and experiencing high rates of habitat loss.

DESCRIPTION

Biodiversity hotspots are a method to identify those regions of the world where attention is needed to address biodiversity loss and to guide investments in conservation. The idea was first developed by Norman Myers in 1988 to identify tropical forest 'hotspots' characterized both by exceptional levels of plant endemism and serious habitat loss [1], which he then expanded to a more global scope [2]. Conservation International adopted Myers' hotspots as its institutional blueprint in 1989, and in 1999, the organization undertook an extensive global review which introduced quantitative thresholds for the designation of biodiversity hotspots. [3] A reworking of the hotspots analysis in 2004 resulted in the system in place today. [4] Currently, 35 biodiversity hotspots have been identified, most of which occur in tropical forests. They represent just 2.3% of Earth's land surface, but between them they contain around 50% of the world's endemic plant species and 42% of all terrestrial vertebrates. [5] Overall, Hotspots have lost around 86% of their original habitat and additionally are considered to be significantly threatened by extinctions induced by climate change. [6]

SUPPORTED BY

Conservation International (CI)

YEAR OF CREATION

1988

COVERAGE

Global in extent. New biodiversity hotspots are periodically added based on scientific assessments of new regions. For example, the Forests of East Australia are the latest hotspot to have been added after research showed that the area fulfilled all criteria. [7] Changing circumstances such as sustained habitat loss or the discovery of new species may mean that areas previously not considered biodiversity hotspots could qualify in a future re-assessment.

CRITERIA

To qualify as a hotspot, a region must meet two criteria: [5]

- it must contain at least 1,500 species of vascular plants (> 0.5% of the world's total) as endemics;
- it has to have lost ≥ 70% of its original native habitat.

MANAGEMENT

Hotspots are not formally recognised or governed areas. However, the identification of an area as a biodiversity hotspot increases the likelihood of conservation investment. In addition, other designations for biodiversity conservation are likely to be present within these broad areas which may have more formal management structures. For example, the average protected area coverage of hotspots, based on IUCN Protected Area Management Categories I-VI, is 12% of their original extent. [8]

The Critical Ecosystem Partnership Fund (CEPF) is an alliance among seven nongovernmental and private-sector organizations (including Conservation International). CEPF provides grants to organizations around the world that are working to help protect biodiversity hotspots. Biodiversity hotspots are also used by major foundations and the Global Environment Facility (GEF) to target investments in global conservation.

BUSINESS RELEVANCE

Legal and compliance – An area is not required to have legal protection for identification as a hotspot. Any legal protection and compliance, if applicable, will mainly be of other areas of biodiversity importance whose parts or entire area come under the hotspots. They are, however, referred to in some environmental safeguard standards such as those of the Sustainable Forestry Initiative [9] which require that procurement promotes the conservation of biodiversity hotspots.

Biodiversity importance – The biodiversity importance of hotspots is due to the high vulnerability of habitats and high irreplaceability of species found within large geographic regions. This means that these areas and the species present within them are both under high levels of threat and of significant global value based on their uniqueness. Therefore, operations that occur within global biodiversity hotspots should follow rigorous biodiversity assessments to prevent further biodiversity loss within these areas. This is a global scale approach based on coarse scale ecoregions that therefore, has limited use for site-scale assessment and decision making. Biodiversity hotspots will include areas of high biodiversity importance as well as degraded land and urban areas and therefore more detailed assessments are needed to locate the actual distribution of biodiversity within these areas.

Social-cultural values – Given the richness of hotspot ecosystems, hotspots are often areas which offer essential ecosystem services. It is estimated that biodiversity hotspots, despite comprising 2.3% of the Earth's surface, account for 35% of the global ecosystem services. [5] Furthermore, hotspots are home to 2.08 billion people [8] which adds significance to the ecosystem services that they provide. Biodiversity hotspots can include a variety of human land-uses, rural and urban, as well as protected

areas under a range of possible governance types therefore many social and/or cultural values are likely to be present in some parts. This however is irrespective of the identification of the area as a biodiversity hotspot.

REFERENCES & WEBSITE

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Madakaripura Waterfall in the biodiversity hotspot of Java, Indonesia. James Jones Jr./Shutterstock.com

Category:

Biodiversity designations

Links

Conservation International

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