

BIODIVERSITY –HOT SPOTS

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- ▶ Biodiversity refers to the variety and variability among all groups of living organisms and ecosystem complexes in which they occur.
- ▶ Areas which exhibit high species richness as well as high species endemism are termed as HOT SPOTS OF BIODIVERSITY.



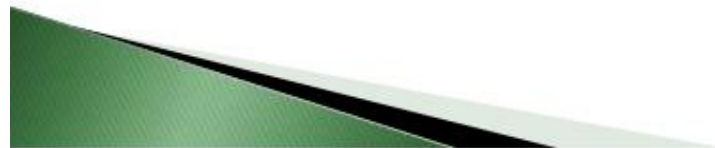
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- ▶ Life on Earth faces a crisis of historical and planetary proportions. Unsustainable consumption in many northern countries and crushing poverty in the tropics are destroying wild nature.
- ▶ Extinction is the gravest aspect of the biodiversity crisis: it is irreversible. While extinction is a natural process, human impacts have elevated the rate of extinction by at least a thousand, possibly several thousand, times the natural rate.



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- ▶ In a world where conservation budgets are insufficient given the number of species threatened with extinction, identifying conservation priorities is crucial.
- ▶ British ecologist **Norman Myers** defined the biodiversity hotspot concept in 1988 to address the dilemma that conservationists face: what areas are the most immediately important for conserving biodiversity



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THE BIODIVERSITY HOTSPOTS

- ▶ The world's most remarkable places are also the most threatened. These are the Hotspots: the richest and most threatened reservoirs of plant and animal life on Earth.



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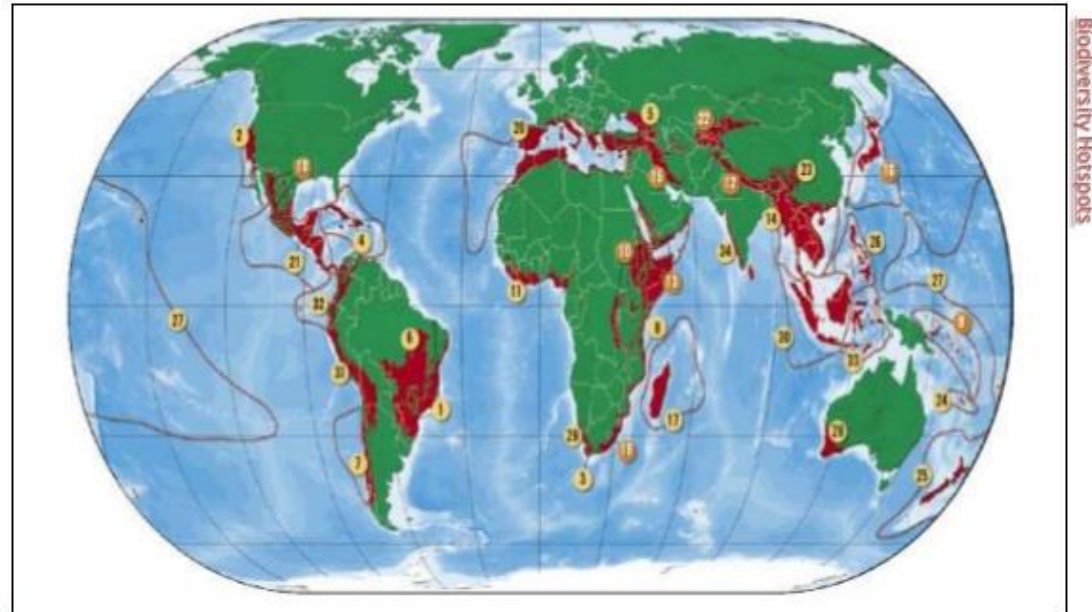
To qualify as a hotspot, a region must meet two strict criteria:

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



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34 Terrestrial Hotspots



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The 34 Terrestrial Hotspots

- 1) Atlantic Forest
 - 2) California Floristic Province
 - 3) Cape Floristic Province
 - 4) Caribbean Islands
 - 5) Caucasus
 - 6) Brazilian Cerrado
 - 7) Central Chile
 - 8) Coastal Forests of Eastern Africa
 - 9) East Melanesian Islands
 - 10) Eastern African Afromontane
 - 11) Guinean Forests of West Africa
 - 12) **Eastern Himalayas**
 - 13) Horn of Africa
 - 14) Indo-Burma
 - 15) Irano-Anatolia
 - 16) Japan
 - 17) Madagascar and Indian Ocean Islands
 - 18) Madrean Pine-Oak Woodlands
 - 19) Maputaland-Pondoland-Albany
 - 20) Mediterranean Basin
 - 21) Mesoamerica
 - 22) Mountains of Central Asia
 - 23) Hengduan Mountains of Southwest China
 - 24) New Caledonia
 - 25) New Zealand
 - 26) Philippines
 - 27) Polynesia-Micronesia
 - 28) Southwest Australia
 - 29) Succulent Karoo
 - 30) Sundaland
 - 31) Tropical Andes
 - 32) Tumbès-Chocò-Magdalena
 - 33) Wallacea
 - 34) **Western Ghats** and Sri Lanka
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Threats to Biodiversity

- **Habitat destruction** – Important to protect habitat in order to protect biodiversity within it. Huge pressure from the World's rapidly increasing population.
- **Global climate change** – Change in a biotic elements of ecosystems leading to biotic change.
- **Habitat fragmentation** – From human activity. Reduces ability of habitat to support species.
- **Pollution** – Introduction of pollutants such as nutrient overloading with nitrate fertilizer as well as more immediately harmful chemicals.
- **Over-exploitation** – This includes the illegal wildlife trade as well as overfishing, logging of tropical hardwoods etc.
- **Disease** – Reduction in habitat causing high population densities, encourages spread of diseases.



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Habitat Loss

Habitat loss can be described when an animal loses their home. Every animal in the animal kingdom has a niche, a their in their animal community and without their habitat they no longer have a niche.

Reasons of habitat loss by humans:

- ~ agriculture, farming
- ~ harvesting natural resources for personal use
- ~ for industrial and urbanization development

Habitat destruction is currently ranked as the primary causes of species extinction world wide...!!!



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Poaching

Poaching is the hunting and harvesting taking of wild plants or animals, such as through hunting, harvesting, fishing, or trapping.

History of poaching

- Millions of years ago, in the Stone Age
- Followed through the ages, to even the tribal natives
- ~but it was during the Late Middle Ages that poaching became a punishable offense



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Why Poaching is done?

- ▶ ~ Poaching is done for large profits gained by the illegal sale or trade of animal parts, meat and pelts.
- ▶ ~ Exists because there is a demand for these products, caused by a lack of education or disregard for the law amongst the buyers
- ▶ ~ Many cultures believe that certain animal parts have medicinal value.



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How Poaching affects environment

- ▶ Poaching or illegal hunting causes animals endangered of being extinct. If more animals becomes extinct there's a **disruption in the food chain**, and that will cause major problems in our ecosystem, resulting eventually in new adaptations of animals, and or species beyond human control.
- ▶ Poaching results in animals being hunted too soon for them to have time to reproduce and repopulate.



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Man wildlife conflict

- Any conflict that arises where the behavior of one (human or wildlife) is unacceptably disadvantageous to other
- Increase in man wildlife conflict is due to resource limitation like :
 1. Space
 2. Food
 3. Shelter

It is also due to Increasing population of human beings , Loss of forest, decrease in quality of forest and development activities.

- Crops like sugarcane and tea estates are reported to provide excellent cover for wild animals
- There are 661 Protected Areas in the country covering around 4.8% geographical areas. There are 100 National Parks, 514 Wildlife Sanctuaries, 43 Conservation Reserves and 4 Community Reserves in the country



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- In India, wild elephants probably kill far more people than tiger, leopard or lion.
- Damage to agricultural crops and property, killing of livestock and human beings are some of the worst forms of man-animal conflict.
- Farmers sometimes poison and shoot wild animals as they damage their crops, but this can be prevented by taking certain measures.



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Conservation

- ❑ Priority–identification of regions under severe threat of extinction which is why hotspots originated
- ❑ Protection of areas through establishment of reserves, national parks, botanical gardens, heritage sites, wildlife refuges and etc.
- ❑ Incentive measures are essential for conservation
- ❑ Regulations and market based tools are also used
- ❑ Increase in new conservation tools and conservation professionals promote action against biodiversity loss
- ❑ Unique projects– Working for water
- ❑ Ecotourism–mutually beneficial



Thank You

