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A study on biodiversity gaps and conservation strategies

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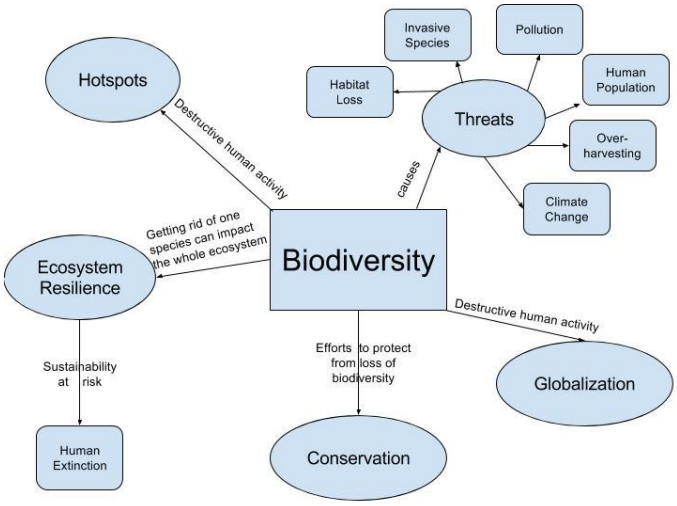
Abstract
With the introduction of industrialization, the existence of biodiversity has become a threat as it is causing destruction of natural living place for the animals and birds. Also, it is observed that a lot of forests have been cut down in past few years so as to set-up more and more industries for the development.
Due to all these factors, it has become very difficult to preserve the wild lives and their natural living places. The whole balance of biodiversity has imbalanced. Besides industrialization, another big factor for broken balance of biodiversity is global warming and pollution. Due to these reasons, the future of all flora and fauna is in under threat. The current article highlights the biodiversity gap and strategies to conserve it.

Keywords: Biodiversity, Conservation, Industrialization

Introduction
Sustainable development has become a threat for all the natural resources as all these resources such as forests, land, lakes, ponds etc. are destroying for the sake of development which is resulting in a big hole in the balance of biodiversity.
There are two ways to conserve the biodiversity. One is in-situ and other is ex-situ approach. In the first approach i.e. in-situ, the conservation is done in nature such as in national park, farm or any protected area. Whereas in the second approach i.e. ex-situ, artificial conditions like zoo are used to conserve a specimen of a species.
The environment of natural habitat is provided foe the in-situ conservation. It is also observed that how a species interact with other species and whether the specimen of species is getting proper natural surroundings or not.
If a comparison is done between in-situ and ex-situ approaches then the major benefit of in-situ is that the species get a broad area to live with all natural resources available. On the other hand, in ex-situ approach, the living species can't get much place to live and have to live in a specified area and the limit of natural resources is also confined.
Similarly, many species of flora and fauna are conserved so that their biological value can't be destroyed and their existence exist forever. Government has started many programs to conserve the biodiversity. There are many laws which applies hard punishment for those who tend to harm the nature and wild lives. There are many protected areas in the country which has termed as natural places and no human being can't enter there without permission ;hence, minimizing the probability of hunting of wild species and deforestation.
The living species residing in these conserving areas are provided with all the facilities like food, water and other natural resources required to survive. Also, human beings need to think that these species are very essential so as to maintain the balance between development and nature as no development can't go longer by destroying all the natural resources.



Biodiversity Gaps and Conservation Strategies
Close monitoring of biodiversity is another important conservation practice; it involves regular checking of the overall health of ecosystems and the species living within it. The data collected from ongoing monitoring programs can help inform management plans and improve the sustainability of activities in productive landscapes. Monitoring is especially important when the activities are carried out on an industrial scale because their impact is greater than the impact of similar activities carried out on a smaller subsistence scale by local communities.
Conservation mechanisms may include law or community enforcement. Biodiversity conservation officers make sure the communities relying on the site's natural resources are totally involved in conservation initiatives. Officers enforce the laws and record the details of community participation. When the laws are not respected, illegal logging, mining and bushmeat hunting erode the benefits of conservation efforts.
In many cases, traditional knowledge has contributed to

protecting wildlife and ecosystems and to ensuring a "natural balance". Traditional knowledge comprises of "knowledge, innovations and practices of indigenous and local communities around the world, developed from experience gained over centuries and adapted to the local culture and environment, which is transmitted orally from generation to generation", according to the Convention on Biological Diversity (CBD).

Biodiversity conservation practitioners must therefore ensure that the communities relying directly on natural resources are involved in conservation initiatives, and guarantee their active participation during the whole conservation process. Some form of community engagement is essential for the success of any biodiversity conservation project.

There are also many good examples of community conserved areas around the world. These sites have been managed by communities for generations for the sustainable use of natural resources such as medicinal plants and water springs, or even for religious purposes. These sites may or may not have government protection or written management regulations. However, the community members have developed well-recognized and respected rules that are often stronger than any law and have been practiced for generations. The end result is the conservation and sustainable use of resources. Some governments now legally recognize traditional practices and treat indigenous and local communities as the customary stewards of the biodiversity.

Researchers such as biologists, ecologists and social scientists play various roles in conservation. They identify species and their habitats, they locate areas of high ecological value, they pinpoint threats, and they propose innovative strategies and solutions. Researchers use various methods such as field surveys, observations and experiments, and technologies including remote sensing devices, data analyses, software and laboratory tests.

Discussion

A wide variety of living organisms including plants, animals and micro-organisms with whom we share this planet earth makes the world a beautiful place to live in. Living organisms exist almost everywhere from mountain peaks to the ocean depths; from deserts to the rainforests. They vary in their habit and behaviour, shapes, sizes and colour. The remarkable diversity of living organisms form an inseparable and significant parts of our planet however, the ever increasing human population is posing serious threats to bio-diversity.

At the global level, an estimated 1.7 million species of living organisms have been described to date and many more are yet to be discovered. It has been currently estimated that the total number of species may vary from 5 - 50 millions. Species diversity is not evenly distributed across the globe. The overall richness of species is concentrated in equatorial regions and tends to decrease as one moves from equatorial to polar regions. In addition, biodiversity in land ecosystems generally decreases with increasing altitude. The other factors that influence biodiversity are amount of rainfall and nutrient level in soil. In marine ecosystems, species richness tends to be much higher in continental shelves.

It refers to the presence of different types of ecosystems. For instance, the tropical south India with rich species diversity will have altogether different structure compared to the desert ecosystem which has far less number of plant and animal species. Likewise, the marine ecosystem although has many types of fishes, yet it differs from the freshwater ecosystem of rivers and lakes in terms of its characteristics. So such variations at ecosystem level are termed as ecosystem diversity.

As stated above, ecosystem diversity encompasses the broad differences between ecosystem, and the diversity of the habitats and ecological processes occurring within each ecosystem type. India has very diverse terrestrial and aquatic ecosystems ranging from ice-capped Himalayas to deserts, from arid scrub to grassland to wetlands and tropical rainforests, from coral reefs to the deep sea. Each of these comprises a great variety of habitats and interactions between and within biotic and abiotic components. The most diversity-rich are western-ghats and the north-eastern region.

A very large number of species found in these ecosystems are endemic or found in these areas only in India i.e. they are found no where else except in India. The endemics are concentrated mainly in north-east, western-ghats, north-west Himalaya, and Andaman and Nicobar Islands. About 33% of the flowering plants recorded in India are endemic to our country. Indian region is also notable for endemic fauna. For example, out of recorded vertebrates, 53% freshwater fish, 60% amphibians, 36% reptiles and 10% mammalian fauna are endemic.

Living organisms provide many ecological services free of cost that are responsible for maintaining ecosystem health. Thus biodiversity is essential for the maintenance and sustainable utilization of goods and services from ecological system as well as from individual species.

Natural vegetation cover helps in maintaining hydrological cycles, regulating and stabilizing water run-off and acting as a buffer against extreme events such as floods and droughts. Vegetation removal results in siltation of dams and waterways. Wetlands and forests act as water purifying systems, while mangroves trap silt thereby reducing impacts on marine ecosystems.

Conclusion

Biodiversity conservation and sustainable development are two inter-related branches focusing on social progress, economic growth and environmental protection on one side, and ecosystem conservation on the other. Conservation includes the efforts carried out in protected areas such as national parks and community reserves, and in other areas with rich and important biodiversity where conservation is not the main focus. It is in these latter productive landscapes where sustainability is needed most. Sustainable agriculture, sustainable fisheries and sustainable management of natural resources are the main approaches for preserving these landscapes for long-term social, economic and ecological benefits.

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