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Original Article

CHARACTERISTICS AND IMPORTANCE OF BIODIVERSITY REGIONS IN MAHARASHTRA

Dr. D. P. Jaiswal
Acting Principal,
Arts, Commerce and Science College Navapur, Dist. Nandurbar

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Corresponding Author:
Dr. D. P. Jaiswal

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Introduction:

Biodiversity describes the richness and variety of life on earth. The term biodiversity was coined in 1985. It is important in natural as well as artificial ecosystems. It deals with nature's variety, the biosphere. It refers to variabilities among plants, animals and microorganism species. Maharashtra is one of the heterogeneous states of India. Maharashtra located on India's west coast, is renowned for its diverse ecosystems and rich biodiversity. This region encompasses a variety of geographical features, including the Western Ghats (a global biodiversity hotspot), the Deccan Plateau, extensive coastlines, and distinct wetland and forest ecosystems. This research work highlights the unique characteristics and immense importance of biodiversity regions in Maharashtra state.

Maharashtra has rich and diverse biodiversity due to its varied geography and climate. The state is home to a wide range of flora and fauna, supported by ecosystems like tropical dry deciduous forests, evergreen and semi-evergreen patches, coasts, grasslands, and wetlands.

Objectives of the Study:

The main objective of present paper is to study characteristics of biodiversity regions in Maharashtra and highlights their importance.

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Characteristics of Biodiversity Regions in Maharashtra:

Maharashtra's diverse topography and climatic conditions have fostered a wide array of habitats, each with its unique biological characteristics:

1. Western Ghats (Sahyadri Range):

Hotspot Status: The northern part of the Western Ghats, extending into Maharashtra, is recognized as one of the world's 36 biodiversity hotspots. It is characterized by high levels of endemism.

Forest Types: Predominantly features tropical evergreen, semi-evergreen, and moist deciduous forests. These forests are dense, particularly in the Sahyadri region.

Flora: Home to a vast diversity of plant species, including many endemic ones like Carvia callosa (Karvi), Ceropegia media, and Euphorbia panchganiensis. The Kaas Plateau, a UNESCO World Heritage Site within the Western Ghats, is famous for its seasonal bloom of thousands of endemic flowering plants.

Fauna: Rich in faunal diversity, including the state animal, the Indian Giant Squirrel (Ratufa indica), tigers, leopards, gaur, sambar, various deer species, and a wide range of bird, amphibian, and reptile species. Endemic amphibians like the Amboli toad (Xanthophryne tigerinus) are found here.

Hot specks: Within the larger Western Ghats hotspot, smaller fragments of biologically important landscapes, termed ‘hot specks’ (e.g., sacred groves, forts, plateaus), also contribute significantly to the region's biodiversity, often harbouring unique micro-habitats and species.

2. Coastal and Marine Ecosystems (Konkan Region):

Mangroves: Maharashtra has a significant mangrove cover, especially in districts like Raigad, Thane, Mumbai, Ratnagiri, and Sindhudurg. These salt-tolerant plant communities act as crucial havens for diverse species and natural barriers against coastal erosion and severe climatic conditions. They serve as nurseries for fish and crustaceans.

Beaches and Rocky Shores: The coastline features sandy beaches and rocky shores, which support unique intertidal flora and fauna, including oysters, barnacles, crabs, and various marine invertebrates.

Marine Life: The Arabian Sea bordering Maharashtra is home to a variety of marine species, including fish, molluscs, and even larger mammals like blue whales and dugongs (though critically endangered). Coral reefs also exist in certain areas.

3. Deccan Plateau (Central and Eastern Maharashtra):

Vegetation: Characterized by open scrub jungles and dry deciduous forests. While less dense than the Western Ghats, these areas still support significant biodiversity adapted to drier conditions.

Wildlife: Deccan plateau is home of various wildlife, including a good population of peafowl and other

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terrestrial birds, as well as mammals like wild boars, antelopes, and wolves in specific protected areas.

Unique Features: The Lonar Crater Lake, a hyper-velocity impact crater, is a unique ecological site within the Deccan Plateau, supporting diverse avifauna and specific plant communities.

4. Wetlands and Inland Water Bodies:

Maharashtra has numerous rivers, lakes, and ponds that serve as vital habitats for aquatic flora and fauna, including a variety of fish species, migratory birds, and insects. These wetlands are crucial for maintaining ecological balance and supporting diverse food webs.

Importance of Biodiversity Regions in Maharashtra:

The biodiversity regions of Maharashtra hold immense ecological, economic, social, and cultural importance:

1. Ecological Stability and Ecosystem Services:

Climate Regulation: Forests, particularly the dense Western Ghats, play a crucial role in regulating regional climate patterns, including rainfall.

Water Security: These regions act as significant watersheds, contributing to the recharge of groundwater and supplying freshwater to a large population.

Soil Conservation: Vegetation cover prevents soil erosion, maintaining soil fertility and reducing the risk of landslides.

Pollution Absorption: Forests and wetlands act as natural filters, absorbing pollutants from the atmosphere and water.

Carbon Sequestration: Mangroves and dense forests are vital carbon sinks, playing a role in mitigating climate change.

Habitat Provision: They provide essential habitats for countless species, supporting complex food webs and maintaining ecological balance.

2. Economic Value:

Source of Resources: Biodiversity provides valuable resources such as timber, medicinal plants, non-timber forest products, and genetic resources crucial for agriculture and pharmaceuticals.

Livelihood Support: Many local and tribal communities in Maharashtra are directly dependent on forest resources for their livelihoods, including food, fodder, and traditional medicines.

Tourism and Ecotourism: The rich biodiversity, particularly in protected areas like Tadoba-Andhari Tiger Reserve, Sanjay Gandhi National Park, and Kaas Plateau, attracts domestic and international tourists, generating revenue and employment opportunities. Ecotourism initiatives help in creating awareness and providing economic incentives for conservation.

Fisheries: Healthy mangrove and coastal ecosystems are crucial for supporting fish populations, directly benefiting the fishing communities.

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3. Scientific and Educational Value:

Research Opportunities: The diverse ecosystems offer unparalleled opportunities for scientific research in ecology, botany, zoology, and conservation biology.

Genetic Reservoir: Maharashtra's biodiversity, including endemic species and indigenous crop varieties, represents a vital genetic reservoir for future agricultural development and adaptation to environmental changes.

Environmental Education: These regions serve as living laboratories for environmental education, raising awareness about the importance of conservation among students and the general public.

4. Cultural and Social Significance:

Sacred Groves: Many biodiversity-rich areas, particularly sacred groves, hold deep cultural and spiritual significance for local communities, leading to traditional conservation practices.

Traditional Knowledge: Indigenous communities possess invaluable traditional ecological knowledge about the sustainable use and management of biodiversity.

Recreation and Well-being: Natural landscapes provide spaces for recreation, promoting physical and mental well-being for urban and rural populations.

Threats and Conservation Efforts:

Despite their importance, Maharashtra's biodiversity regions face significant threats from rapid urbanization, industrial development, deforestation, agricultural expansion, pollution, and climate change. These lead to habitat loss, fragmentation, and endangerment of species.

To address these challenges, various conservation strategies are being implemented:

1. **Protected Areas:** Establishment and management of National Parks (e.g., Tadoba-Andhari, Sanjay Gandhi) and Wildlife Sanctuaries (e.g., Bhimashankar, Nagzira, Navegaon).
2. **Government Initiatives:** The Maharashtra State Biodiversity Board plays a crucial role in regulating biological resources and promoting conservation. The Mangrove Cell and Mangrove and Marine Biodiversity Conservation Foundation of Maharashtra are dedicated to protecting coastal ecosystems.
3. **Community Participation:** Encouraging local communities, including tribal groups, to participate in conservation efforts through initiatives like Joint Forest Management and the designation of Biodiversity Heritage Sites (BHS).
4. **Eco-restoration:** Efforts to restore degraded ecosystems, including wetlands and forests.
5. **Wildlife Corridors:** Creation of safe passages for animals to reduce human-wildlife conflict and maintain genetic connectivity.
6. **Awareness and Education:** Programs to educate the public, especially students, about biodiversity conservation.

Conclusions:

In conclusion, Maharashtra's biodiversity regions are not merely ecological assets but foundational pillars for the state's environmental stability, economic prosperity, and cultural heritage. Their characteristics, from the endemic richness of the Western Ghats to the vital protective role of coastal mangroves, underscore their critical importance, necessitating ongoing and robust conservation efforts for a sustainable future.

References:

1. **Bhagwat, S. A., C. G. Kushalappa, P. H. Williams and N. D. Brown (2005).** The role of informal protected areas in maintaining biodiversity in the Western Ghats of India. Ecology and Society 10(1): 40. http://www.jstor.org/stable/26267704
2. http://www.mahenvis.nic.in/Pdf/other/Biodiversity.pdf
3. https://globaljournals.org. :-GJSFR vol.18/3Diversity
4. https://mahaforest.gov.in/
5. **Jagtap, A. P. (1998).** Biodiversity of the Western Ghats Maharashtra. WWF for Nature India, Pune. This foundational work provides a comprehensive overview of the biodiversity in the Maharashtra section of the Western Ghats.
6. **Kishore Pawar.** Environmental Awareness, Nirali Prakashan.
7. **Kulkarni, N.A., and Bhosale, L. J. (2014).** Ecological Studies on the Mangroves along the Coast of Maharashtra State With Respect to Their Conservation. Discovery Publishing House. This work specifically focuses on the unique and threatened mangrove ecosystems of the Konkan coast.
8. **Pande, S., Deshapande, P., and Sant, N. (2011).** Birds of Maharashtra. Ela Foundation, Pune, India. This book is a key reference for avifaunal diversity in the state.
9. **Patil B.A, Potadar S.K, Sarawade J.P., Kulkarni S.D, Shinde B.P and Mahajan D.M.**: Environmental Awareness, Sunny Publication.
10. **Rahul Pardeshi, Amol S. Shinde (2015)**. Golden Research Thoughts V(2):1-11, ISSN 2231-5063,August 2015.
11. **Shelar, S. K., and Madhuri, S. K. (2016).** "Conservation strategies of biodiversity in Maharashtra, India." International Journal of Applied Research. This paper discusses government initiatives and broader strategies for biodiversity conservation in the state.
12. www.biodiversity.com.
13. **Zoological Survey of India (ZSI).** Fauna of Maharashtra, State Fauna Series. ZSI has published multiple volumes detailing the faunal diversity of various districts and protected areas in the state. These are primary resources for species-level data.