

**BIODIVERSITY IN CHHATTISGARH FOREST REGION CG**

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**Abstract**

*The state of Chhattisgarh, which is located in the middle of India, is well-known for its abundant biodiversity and deep forest cover, which accounts for around 44 percent of the state's total land area. It is possible to find a diverse assortment of flora and fauna in the forest environment of the state, notably in areas like as Bastar, Sarguja, and Bilaspur. These locations are home to a large number of endemic, uncommon, and endangered species. One of the factors that contributes to the state's distinctive ecological equilibrium is the fact that the forests are classed as tropical wet deciduous and tropical dry deciduous. In addition to ensuring the survival of indigenous populations, the biodiversity of Chhattisgarh plays a significant part in the preservation of natural processes such as the creation of soil, the cycling of nutrients, and the sequestration of carbon. However, the region is confronted with considerable dangers as a result of deforestation, mining, industrialization, and agricultural growth. These environmental factors have resulted in the loss of habitat and the fragmentation of habitat, which in turn puts indigenous plant and animal species in jeopardy. It is the goal of conservation efforts to conserve the biodiversity of Chhattisgarh. These efforts include the construction of protected areas such as national parks and animal sanctuaries, as well as community-based forest management. This abstract offers a summary of the natural variety that can be found in the Chhattisgarh forest region. It emphasizes the significance of environmentally responsible management and the difficulties that are brought about by the actions of humans on the ecosystem.*

**keywords:** Biodiversity, forest region, Chhattisgarh

**Introduction**

One of the most biodiverse states in India, Chhattisgarh is located in the middle of the nation and has a natural landscape that is both diverse and abundant in its natural features. A portion of the Eastern Highlands wet deciduous forest eco-region is comprised of the state's forests, which encompass over half of the entire area of the state. In these woods, there is a diverse collection of plant and animal species, many of which are unique to this area and cannot be found anywhere else. The forest regions of Chhattisgarh, which include the deep forests of Bastar, Sarguja, and Bilaspur, are home to an ecosystem that is both complex and dynamic, and it represents a significant contributor to the biodiversity of the world. The region's biodiversity is an important resource because it not only provides ecosystem services like climate control, water purification, and habitat for wildlife, but it also helps local and indigenous tribes maintain their livelihoods by supplying non-timber forest products like as honey, medicinal plants, and bamboo. Over the course of several generations, these communities have successfully coexisted with the forest ecosystem by employing methods of sustainable agriculture and forest management. Chhattisgarh's biodiversity is under growing threat as a result of human-induced activities like as deforestation, mining, illicit logging, and industrial growth. This is despite the fact that Chhattisgarh is home to exceptional

biodiversity. These actions have resulted in the fragmentation of habitats, the extinction of species, and the deterioration of the health of ecosystems. Additionally, the region is confronted with issues that are associated with climate change, which poses a threat to the careful equilibrium of its ecosystems. The purpose of this introduction is to provide an overview of the significance of Chhattisgarh's biodiversity, the many different species and habitats that it supports, and the urgent need for conservation efforts. For the purpose of implementing sustainable management methods that will ensure the preservation of this priceless natural heritage, it is essential to have a solid understanding of the link that exists between local communities and their environment, as well as acknowledge the challenges that are now confronting the region.

The woods of Chhattisgarh are filled with a wide variety of species, the most prominent of which being teak, sal, and bamboo. The forests are mostly composed of tropical wet deciduous and tropical dry deciduous kinds. There are many different kinds of animals that call these forests their home, such as tigers, leopards, elephants, wild boars, and several kinds of deer. In addition, the state is home to a great number of bird species, reptiles, and amphibians, many of which are threatened with extinction or are in risk of extinction as a result of habitat damage. The indigenous flora and fauna of Chhattisgarh is one of the distinguishing characteristics of the state's biodiversity. This is especially true in the tribal parts of the state, such as Bastar, where the use of traditional knowledge has contributed to the preservation of ecological balance. Several of the indigenous peoples of Chhattisgarh, including the Gond, Halba, and Muria, have a profound relationship with the forest and rely on it for a variety of purposes, including the provision of food, medicine, and cultural rituals. Their knowledge of local ecosystems and their commitment to environmentally responsible activities are essential to gaining a grasp of the region's biodiversity. But the massive urbanization and industrialization that have occurred over the last few decades have presented a number of serious concerns. The region is particularly abundant in mineral resources, which has led to an increase in the number of mining operations. These factors have resulted in widespread deforestation, soil erosion, and pollution, which have had an impact not just on biodiversity but also on the livelihoods of populations who are dependent on forests. These pressures have been further compounded by the development of agricultural land use, the use of land in a manner that is not sustainable, and illegal logging, which has resulted in a large loss of forest cover. Kanger Valley National Park, Achanakmar Tiger Reserve, and Indravati National Park are just a few examples of the national parks and wildlife sanctuaries that have been established in Chhattisgarh as part of the state's efforts to safeguard and preserve the state's rich biodiversity. It is because of these protected spaces that important ecosystems are preserved, and it is because of these protected areas that endangered species maintain their existence. In addition, community-based forest management projects have evolved as a means of including local people in conservation efforts. This helps to ensure that the requirements of both human populations and biodiversity are met in a manner that is equitable. Despite the fact that the biodiversity of Chhattisgarh's forests is an essential component of India's biological legacy, it is currently under danger as a result of a variety of activities carried out by humans. Integrated conservation methods that not only safeguard animals but also improve the welfare of local populations by making sustainable use of forest resources are urgently needed. This is because there is a pressing need for such techniques. It is absolutely necessary for environmental groups, local communities, and government agencies to work together in order to preserve the abundant biodiversity of Chhattisgarh for the benefit of future generations.

## **Biodiversity of Chhattisgarh and its Importance**

The state of Chhattisgarh is home to a diverse fauna and flora, with forests covering more than 44 percent of the total land area. There are 7.8 million indigenous and tribal tribes who rely on these woods and biological resources for their means of subsistence. These woods are also the source of three important rivers: the Mahanadi, the Indravati, and the Narmada. Chhattisgarh is home to a number of endangered species of flora and fauna, including the Wild Buffalo (*Babulus babulis arnee*), which is the state animal of Chhattisgarh. The state also has three national parks, eleven wildlife sanctuaries, and three tiger reserves. As a result of encroachment, industrial and urban growth, unsustainable collection of fuelwood, harvesting of medicinal plants and non-timber forest products (NTFPs), diversion of forest areas for non-forestry activities, and grazing, the state's forests and biodiversity are threatened by a variety of different factors. When it comes to a state like Chhattisgarh, where the sustainable management of biodiversity becomes vital for the livelihood of local people and the rural economy of the state, the significance of ecological research cannot be understated. In this state, there is a significant amount of room for improvement in terms of biodiversity surveys and reports. There is an immediate requirement to develop genuine scientific studies and publications, as well as to promote research activity inside the state. As a result, this continues to be a significant obstacle for the purpose of protecting and conserving the biological diversity that exists inside the state. It has been acknowledged on a worldwide scale that the preservation of biodiversity is a crucial component in the process of tackling the modern and difficult environmental challenges associated with climate change mitigation. In the beginning, the results of global efforts were apparent across all of the countries in the form of Acts such as the Biodiversity Act of 2002. The legislation envisions the active participation of local custodians of biodiversity in the process of recognizing the strengths of the same for their livelihood and fair claims on the access and benefit-sharing that accrues as a result of the sustainable usage of natural bioresources.

## **The Chhattisgarh Perspective**

In accordance with the provisions of the Biological Diversity Act, 2002, which was approved by the Government of India, the Chhattisgarh State Biodiversity board has been established by the State Government. According to the provisions of section 63(1) of the Biological Diversity Act 2002, the Chhattisgarh State Government issued a notification on June 1, 2015, stating that the Chhattisgarh State Biological Diversity Rules had been announced.

## **Functions:-**

These are the functions that the Board is responsible for:

1. To provide advice to the State Government, subject to any guidelines issued by the Central Government, on issues concerning the preservation of biodiversity, the sustainable usage of its components, and the fair distribution of the benefits that result from the utilization of biological resources.
2. To control, by the granting of permissions or other means, any requests made by Indians for the commercial exploitation, biosurvey, or bioutilization of any biological resource.
3. To carry out any other tasks that may be required in order to carry out the provisions of this Act or that may be specified by the State Government

4. Make certain that the BMCs are enabled, that the PBRs are prepared, and that they also act as facilitators for access and benefit sharing regarding the exploitation of the bioresources that they hold.

In order to eventually establish a regime of biodiversity protection and sustainable harvesting with an efficient benefit-sharing mechanism, the Biodiversity Act is a legislation that is designed to comply with the international convention on biodiversity at the local level. A wide variety of line departments, industrial sectors, academic institutions, and local organizations are included among the stakeholders. Every single person is required to be actively involved in order for the act to be effectively complied with and for the objective of the act to be fulfilled. In order to achieve the required compliances, the creation of the constitutions of BMCs and PBRs is an essential component. Having adequate and thorough data on bioresources at the ground level, as well as the process of their value chain, from the point of collection all the way up to the point of production, is also an enormous necessity. It is also the responsibility of the BMCs to ensure that the traditional knowledge linked with bioresources is adequately documented. On the other hand, there is a gap in the appropriate knowledge of the Act among the various levels of stakeholders. Moreover, these issues must be handled on an ongoing basis. In accordance with the Biodiversity Act, each and every local body is required to establish a BMC and organize a PBR. In order to do this, the Board is required to carry out a program that focuses on awareness and capacity building in a comprehensive manner throughout the state. This is done to ensure that local bodies acquire the necessary skills to fulfill their responsibilities as outlined in the Biodiversity Act. Although the Board takes a number of different measures, one of the most important aspects is the generation of awareness, the building of capacity, the monitoring, and the continuous hand-holding at the level of the Local Body. This is done to ensure that BMCs are carried out effectively and that PBRs are continuously prepared and upgraded in a timely manner in order to later establish an ABS mechanism that is successful. As a result, the Board plans to collaborate with non-governmental organizations (NGOs) that are both knowledgeable and experienced in order to successfully complete this work. The Chhattisgarh State Bio-Diversity Board is offering an invitation to non-governmental organizations (NGOs) that are capable of submitting their applications for empanelment.

## **Forest and Biodiversity**

The state of Chhattisgarh is distinguished by possessing the most unspoiled and rich collection of natural resources in the nation. The physiography of the region is composed of approximately one third of mountain, plateau, and plains eco-systems respectively. Its woods are not only dense, lush, and unspoiled, but they are also the source of significant rivers such as the Mahanadi, Narmada, and Indrāvati, as well as an exceptionally diverse flora and fauna.

## **Recorded Forest Area, Protected Areas and Forest Covers**

The state of Chhattisgarh is distinguished by possessing the most unspoiled and rich collection of natural resources in the nation. It has been determined that the state has a total forest area of 59,772 square kilometers, which accounts for 44.21 percent of the total land area. The percentage of the total forest area that is comprised of Reserved Forests, Protected Forests, and Unclassified Forests is 33.13 percent, 40.21 percent, and 16.65 percent, respectively. It is estimated that the state has eleven Wildlife Sanctuaries and three National Parks, with the former spanning an area of 0.29 million ha and the latter 0.36 million ha. The protected area network encompasses a total area of 0.65 million hectares, which accounts for 4.79

percent of the state's entire geographical area. An area of 55,674 square kilometers is covered by forests in the state, which accounts for 41.18 percent of the total land area of the state. With regard to the different classifications of forest canopy density, the state is comprised of 4,163 square kilometers of extremely thick forests, 34,811 square kilometers of moderately dense forests, and 16,600 square kilometers of open forests.

## **Forest Cover Change**

Despite the fact that there is a shift of four square kilometers that was discovered during the assessment in 2011, there is a net decline of 192 square kilometers in the forest cover compared to the area that was recorded in the FSIR in 2009. The reason for this is that, on the one hand, there has been an improvement in the technique of interpretation, and, on the other hand, there is now access to satellite data that corresponds to the right season and is of higher quality than in past years.

## **Forest Cover in Different Forest Types**

There are ten different types of forests in the state, and according to Champion and Seth's classification, these forests are divided into two categories: tropical dry deciduous forests and tropical moist deciduous forests.

## **Tree cover**

In order to determine the extent of the state's tree cover, data from the trees outside (TOF) inventory were gathered over a period of six years, namely from 2004 to 2010. The projected amount of land covered by trees in the state is 3,866 square kilometers, which is equivalent to 2.86 percent of the total land area of the state. Bilaspur, Durg, Jashpur, Kawardha, Kanker, and Rajnandgaon are the six districts of the state that have been surveyed and enrolled in the inventory.

## **Growing Stock**

On the basis of the present forest cover map, the forest type map, and the forest inventory data, an estimation of the rising stock in the recorded forest area has been made. An estimate of the same has been made using data from the TOF inventory.

## **Bamboo Resources**

There is a total area of 11,368 square kilometers that is covered by bamboo production in the state's woods.

## **Wetlands**

Wetland border, water-spread, aquatic vegetation, and turbidity are the GIS layers that were utilized in order to carry out the process of estimating the total area of the various wetland types that are present in Chhattisgarh. There are a total of 7711 wetland areas in the state that have been mapped at a scale of 150,000. In addition, there have been 27823 wetland areas that are smaller than 2.25 hectares that have been recognized and designated as point features. It is estimated that there are 33,7966 hectares of marsh land in total, which is around 2.5 percent of the total land area. The following are the primary forms of

wetland: reservoirs (90389 ha), tanks/ponds (40226 ha), and rivers and streams, which together account for around 53 percent of the total wetland area (179088 ha). The minor wetland areas, which are less than 2.25 hectares in size, constitute around 8.2 percent of the total, supposing that each individual wetland area is one hectare in size.

## Conclusion

It is important to note that the biodiversity of the forest region in Chhattisgarh is an essential component of India's natural heritage. This biodiversity contributes to the ecological stability, climatic resilience, and the well-being of the populations that are located there. There are numerous species of worldwide significance that call the state's woods, which are abundant in both flora and fauna, their home. These species include endangered mammals and plants that are native to the state. A paradigm of sustainable cohabitation between humans and environment is shown by these woods, which provide support to indigenous communities that are dependent on them for their means of subsistence and cultural traditions. On the other hand, this biodiversity is coming under growing threat as a result of deforestation, industrial growth, mining, and agricultural methods that are not sustainable. All of these factors have contributed to the deterioration of habitats and the extinction of species. The demands of modernity and economic growth are generating tensions between the aims of conservation and the requirements of humans. As a result, it is vital to achieve a balance that maintains biodiversity while also preserving the wellbeing of local inhabitants. The establishment of national parks, animal sanctuaries, and community-based forest management initiatives are all examples of conservation efforts that are moving in the right direction. It is imperative that these activities be strengthened and expanded in order to take on the mounting dangers. Furthermore, in order to ensure the long-term preservation of Chhattisgarh's biological treasure, it will be essential to encourage sustainable development practices, raise knowledge about the significance of biodiversity, and include local populations in the decision-making process about conservation. It may be concluded that the future of Chhattisgarh's biodiversity is contingent upon a determined effort to reconcile environmental protection with economic and social development. Sustainable management strategies, which are guided by scientific research and traditional knowledge, are essential to safeguarding this precious natural resource for future generations. Protecting the forests and the biodiversity that they contain is not only an issue of ecological significance, but it is also vital for the cultural and economic well-being of the region.

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