**Forest Wetlands as Nature Based Solution for Climate Regulation, Water Resource Management and Biodiversity Conservation**

Abhishek Maitry

Department of Forestry, Wildlife & Environmental Sciences,

Guru Ghasidas Vishwavidyalaya,

Bilaspur, Chhattisgarh- 495009, India

[abhimaitry@gmail.com](mailto:abhimaitry@gmail.com)

Animesh Shukla

Department of Forestry, Wildlife & Environmental Sciences,

Guru Ghasidas Vishwavidyalaya,

Bilaspur, Chhattisgarh- 495009, India

[shuklahoney24@gmail.com](mailto:shuklahoney24@gmail.com)

Shishir Chandrakar

Department of Forestry, Wildlife & Environmental Sciences,

Guru Ghasidas Vishwavidyalaya,

Bilaspur, Chhattisgarh- 495009, India

[ccrforestry@gmail.com](mailto:ccrforestry@gmail.com)

**ABSTRACT**

Wetlands are one of the planet's wealthiest ecosystems, offering numerous valuable advantages to human society while being extremely delicate to environmental changes. Wetlands are important biological and economic systems that contain abundant natural resources and are essential for maintaining several services like hydrological cycle, carbon sequestration, and biodiversity. According to the National Wetland Inventory and Assessment (and Indian Space Research Organisation), in India, wetlands cover over 1 lakh, 52 thousand and 6 hundred square kilometers which comprise 4.63 percent of the total geographical area of the country. The wetland provides a wide range of benefits like diversity, and providing basic biophysical needs (food, fresh water, etc.), regulation of the environment, and cultural enrichment and also support internal processes to ecosystems that maintain their functioning, resilience, and capacities to produce more directly consumed services and hence being a great nature-based solution for different ecological, hydrological and forest diversity issues. Despite the significant ecological, hydrological, and socio-economic values provided by them, wetlands are facing threats from several natural and man-made induced factors even in densely forested areas. In this chapter, we have tried to justify the importance of forest-surrounded wetlands as a nature-based solution that provides various ecosystem services either directly or indirectly for the benefit of the human population which comprises its positive impacts on the regulation of climate for mitigation of climate change scenarios, managing hydrological resources for water security and conserve important floral and faunal species. These positive impacts evaluate the importance of forest wetlands and provide insights into planning, conservation, and sustainable management of wetland resources.

**Keywords-**wetland; biodiversity; climate; forest**;** water resource.