

Assessment and Monitoring of Changes in Vegetation Cover of Bhitarkanika National Park Region, Odisha, India Using Remote Sensing and GIS

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Abstract—*Mangroves are one of the most productive ecosystems known for provisioning of various ecosystem goods and services. They help in sequestering large amounts of carbon, protecting coastline against erosion, and reducing impacts of natural disasters such as hurricanes. Bhitarkanika Wildlife Sanctuary in Odisha harbors the second largest mangrove ecosystem in India. The Remote Sensing and Geographic Information System have proved to be very important in assessing and analyzing land use and land cover changes. Land use and land cover (LULC) change has become a central component in current strategies for managing natural resources and monitoring environmental changes.*

The objective of the study is to analyze the changes of vegetation vigor using NDVI from multi date satellite data and record the changes for better monitoring of the area and to calculate changes in LULC within the period of 13 years with an interval of 5 years respectively i.e. 2009-2013, 2013-2017 and 2017-2021 and satellite data were used to identify the change. This has helped to quantify these tools and to predict various scenarios. The outcome showed how, over time, changes in other land use categories and the geographical extent of mangroves in the research regions had an impact

Keywords: *Geo-Spatial technology, GIS, land use and land cover, mangroves, remote sensing, satellite imageries.*