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## Wetland Assessment and Monitoring Using Image Processing Techniques: A Case Study of Ranchi, India

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### Author(s)

Meenu Rani, Pavan Kumar, Manoj Yadav, R. S. Hooda

### ABSTRACT

Wetlands, the transitional zones that occupy an intermediate position between dry land and open water, regulate the flow of water and nutrients, thereby facilitating optimum functioning of the physical and biological cycles of nature. To conserve and manage wetland resources, it is important to invent and monitor wetlands and their adjacent uplands. Wetlands are most productive ecosystems besides being a rich repository of biodiversity and are known to play a significant role in carbon sequestration. Wetlands are halfway world between terrestrial and aquatic ecosystem and share properties of both. Wetlands exhibit enormous diversity according to their genesis, geographical location, water regime, chemistry, dominant plants and soil or sediment characteristic. Wetland vegetation provides a natural barrier to fast moving water and therefore aids in flood speed reduction. Remote sensing offers a cost effective means for identifying and monitoring wetlands over a large area and at different moments of time. The present paper describes the methodology and results of wetland area for the Ranchi city of the Jharkhand state for the year 1996-2004. The signatures of wetlands and associated land features are identified in unsupervised classification approach based on their DN value using Satellite data. There are drastic change in between 1996 and 2004. The spatial distributions of the NDVI values were evaluated to determine the cut-off points for the water bodies, and wetted area.

### KEYWORDS

NDVI, DN Value, Unsupervised Classification

### Cite this paper

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