Spatiotemporal Changes in Surface Water Status of East Kolkata Wetlands (1984-2015): A Remote Sensing Approach

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Abstract: East Kolkata Wetlands (EKW-22 0 27´ N 88 0 27´ E), are a multidisciplinary wetland ecosystem located in the 24 Parganas North & South districts of West Bengal in India. Situated in the eastern part of the Kolkata city, these wetlands are also surrounded by the Salt Lake Township on the one hand and Rajarhat Township on the other. It is the world's largest wastewater-fed aquaculture system. This designated Ramsar site is facing a constant threat due to the increasing pressure of urbanization, dramatic change in the quality and quantity of solid waste, sewer, and human negligence also. The purpose of this study is to highlight the spatiotemporal changes of the surface water status of EKW using the Global Surface water dataset, prepared from Landsat observations over a period from 1984-2015. In this investigation Water Occurrence, Occurrence Change Intensity, Recurrence and Transition map product have been analysed by using different geospatial techniques. From the analysis of the dataset, it is evident that the surface water area of EKW is reduced considerably. It has been observed that the surface water status of EKW is dynamic in nature and it shows different spatial extent from 1984 to 2015. The study ascertains a negative correlation between surface water transition and time. The maximum lose of surface water has observed near the science city part of the EKW.

Keywords: East Kolkata Wetlands, Global Surface Water Dataset, Ramsar Site No.1208