

## **Spatial Orientation of Land Use Activities along Buffalo River Estuary: A Study in Buffalo City Metropolitan Municipality, Eastern Cape South Africa**

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**Abstract :** South Africa is one of the developing countries rich in estuary ecosystem. Previous studies have identified many impacts of land use activities on the pollution status of the estuaries. These land use activity and related practices are often blamed for the many pollution problems affecting the estuaries. For example, the estuarine ecosystems on a global scale are experiencing vast transformations from anthropogenic influences; Buffalo River Estuary is one of the influenced estuaries whereby the sources of pollution are unknown. These problems consequently lead to the degradation of the estuaries. The aim of the research was to establish the factors that have the potential to impact pollution status of Buffalo river estuary. Study focuses on Identifying and mapping land use activities along Buffalo River Estuary. Questionnaire survey, structured interviews, direct observation, GPS survey and ArcGIS mapping were the methods used for data collection in the area, and results were analyzed and presented by ANOVA and Microsoft Excel statistical methods. The results showed that harbour is the main source of pollution, in Buffalo River Estuary, through Ballast water discharge. Therefore that requires more concern for protecting and cleaning the estuary.

**Keywords :** estuary, land-use activities, pollution, mapping, water pollution

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