Temporal Deforestation Assessment Survey of Wetlands in Port Harcourt City Local Government Area, Rivers State, Nigeria.

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Key words: Remote sensing; Deforestation assessment

SUMMARY

The Niger-Delta is one of Nigeria's four Geo-morphological zones (Nwilo, 2003; Uzoka, 2007) which have Port Harcourt as their major city. This region is rich in flora and is also a good habitat for fauna bounded by her adjoining zones; the mud coast to its north-west and strand coast to the east. The availability of this quality of land cover tends towards extinction as a result of urban drift from metropolitan areas to coastal landforms for about a century. Prior to wetlands conversion, activities along coastal fringes caused by increased land need of inhabitants, which accounted for the huge loss of 9209.05 hectares over the Niger Delta (Godstime et al., 2005). To effectively represent the loss of this particular land-use, an updated land-use map was created using the Geo-information technology framework (Fazal, 2008) as an application tool adopting the layer concept for each feature in a geographical perspective. This study accounts for "Wetlands Monitoring and Mapping in coastal cities: Historical and Local evidence of changes in the land use and sprawl of Port Harcourt City Local Government Area, Niger-Delta, Nigeria". The methodology of land-use classification and change detection mapping was employed using multi-sourced datasets (Lui and Mason, 2009; Bhatta, 2010). Population growth prior to rapid urbanization was identified as a catalyst for most deforestation activities while Nypa palm invasion has also resulted in a huge loss of mangrove plant at regions of lower salinity. Two index extraction images were produced using the NDVI algorithm to extract Nypa palm and mangrove vegetation while water ratio was used to extract water. These features were converted from raster to polygon, which were later used in creating an index classification map. Hence the computed wetland (Nypa Palm, Mangrove and Water body) 2003 was 4.696 hectares which is equivalent to 39% of the survey compared to the estimated 60% obtained from digitizing and that of the study area according to LSB (2007). The utilization of geo-information technique is crucial for addressing regional environmental studies i.e. wetland inventory and management as the most valuable approach (Pepple, 2012). Key words Change detection, Classification, Conversion, Land-use, Sprawl, Wetlands.