

# Spatio-Temporal Assessment of Degraded Marine Wetlands and its Remediation Measures in Southern Akwa Ibom State, Nigeria

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## **Abstract**

This study was based on the assessed degraded marine wetlands as well as its remediation measures in Southern Akwa Ibom State, Nigeria. It also assessed the strategies used for sustainable management of wetlands within the area. The methods used were mainly Geographic Information Systems (GIS) which enabled the collection and processing of geographic data and Remote Sensing (RS) which provided information on geographic objects using satellite space-borne platforms. Global Positioning System (GPS) receiver was used in the study to provide information on spatial data positions in order to collect ground truth sample points. Thematic Land Use/Land Cover data of the study area as well as other relevant reference materials were also acquired. Erdas Imagine and ArcMap were used in processing and mapping the wetland changes caused by petroleum activities and the consequent effects of these actions, by assessing the pattern of distribution of the affected wetland. On the assessment of remediation methods, personal observation and reports from relevant MOCs, Government Ministries, Departments, Agencies and interviews were conducted across the different stakeholders within the study. The result showed that there has been a significant change in the wetland area of Southern Akwa Ibom State though more than 68% of the wetland mapped had not changed. While wetland was increasing in some areas others experienced a decrease. A total of 5758.14 hectares of different land cover classes in 2003 are now wetland cover in 2016. A total of 8735.06 hectares of wetland cover in 2003 are now covered with different land cover in 2016 while a total of 12629.11 hectares remain unchanged. It was observed that management of the wetland was majorly based on traditional methods of total and periodic restrictions to some community preserved areas as well as periodic fallowing. The traditional management strategies of seasonal restrictions and buffers is not sustainable enough to protect and preserve the wetlands from complete degradation and as such measures should be taken to sensitize all stakeholders in the study area to adhere to the government laid down laws and regulations in order to protect, preserve and ensure a sustainable wetland for future generations.

**Key Words;** Marine wetland, Degradation, Petroleum, Remote Sensing, Land Cover Change, Remediation Measures, Sustainable management