

## ENVIRONMENTAL SENSITIVITY INDEX EVALUATION OF OIL SPILL FOR ENVIRONMENTAL MANAGEMENT: A CASE STUDY OF UKPIOVWIN UDU LOCAL GOVERNMENT AREA, DELTA STATE, NIGERIA

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### ABSTRACT

*The study focused on environmental sensitivity index evaluation for environmental cleanup in an oil polluted ecosystem. The emphasis is on the use of Geoinformatic techniques to create an Environmental Sensitivity Index (ESI) map of the polluted ecosystem to assess the level of vulnerability of resources that were at risk in the area covered by the oil spill. An Ikonos imagery of 2018 of the study area was acquired, a landuse/cover classification scheme comprising of built up area, wetland, natural vegetation, farmland, bare land and water bodies was adopted. Categorization, ranking and classification of the inland habitat was carried out, while the buffer zones of 100m, 200m, 300m and 400m was used. In an ArcGis 10.5 environment, the landuse/cover map was generated. Buffer distances of 100m, 200m, 300m and 400m were created on the landuse/cover map to ascertain the features that were vulnerable at different buffer zones. The study concluded that the built up areas were the most sensitive feature along the created buffer zones followed by water bodies, natural vegetation and farmland which have strong ties with inhabitants. An Emergency Response Zone (ERZ) was established at Ugbisi community within 50m buffer zone.*

**KEYWORDS:** Oil Spill, Vulnerability, Cleanup, Buffer Zone & Management

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