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Dredged spoils from access drill slots contributes to the depletion of the mangrove ecosystem of the niger delta, Nigeria

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Abstract

Dredged spoils or excavates from canalization, drill slot excavation and dredging associated with oil exploration and production activities dots the swampy wetland ecozone of the Niger Delta, Nigeria. This study investigated four selected dredged spoil sites measuring about 750m long and 1-5m high (above sea level), and averaged 10 years old. The study was aimed at assessing the impact of this anthropogenic activity on the near homogenous mangrove ecozone of the Niger Delta. The study revealed that these dredged spoils caused the fragmentation of the mangrove forest by creating new microhabitats that were characterized by altered hydrological (tidal) and pH regimes. The height of these spoils prevented the usual regular tidal inundation of saline water necessary for sustenance of mangrove vegetation. The pH which tended towards acidity (5.3 - 6.1) further complicated the altered conditions of the substrata. These new physicochemical conditions might have contributed in displacing the original vegetal cover of predominantly mangrove species and thereafter allowed the establishment of the new non-mangrove flora. The non-mangrove species identified on the dredge spoils were mostly lowland rainforest species dominated by *Alchornea cordifolia, Acioa* sp., *Christoballanus orbiculare, Sizygium guineesis, Musanga cecropiodes Raphia vinifera, Anthocleista vogelii, Sterculia tragecantha, Pandanus candelabrum* and *Diplazium sammatii*. These observations and results are discussed in the light of current threats to mangrove species, the general depletion of biodiversity of wetlands, and the IUCN/Oil Industry International Exploration and Production Forum requirements for oil exploration and production activities in mangrove areas.

Key words: Dredged Spoils, Drill Slots, Fragmentation, Mangrove, Niger Delta, Wetlands.

Biography

50 year-old, first class Botany graduate and holder of PhD degree in Biosystematics/Taxonomy from the University of Port Harcourt, Nigeria where he currently works. He was elevated to Professor of Plant Science & Biotechnology in the same University since 2009. He has served as Director, Regional Centre for Bioresources Development and Conservation (2010/2011). Currently he is the Assistant Director, Institute of Natural Resources, Environment and Sustainable Development; and Dean, Faculty of Biological Sciences. He also serves as Environmental Management Consultant to Shell, Total, NDDC and other Petroleum Industry Players. He has published over 50 articles in reputable journals.