Geomorphic mapping and human activities along the southwestern Nigeria coastline

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Abstract This paper identifies various coastal landforms and anthropogenic activities in relation to ecosystem degradation and stability on the southwestern Nigeria coastline. It uses topographical base maps, Landsat ETM+ imagery, field survey, and ancillary data to assess and map the various geomorphic units and ecosystem degradation in the study area. Identification of various coastal landforms was carried out using image interpretation elements, especially the tonal and shape differentiation. Some geomorphic units identified include islands, lagoons, peninsulas, coastal plains and beaches, pools and mud coastline. Recent morphological dynamics catalysed by sea-level rise have led to the decrease of some coastal landform units. Sand mining, urbanization, wetland reclamation, and industrialization were identified as causing perturbation of the ecosystem. For sustainable development of the fragile morphological systems of the study area, anthropogenic activities resulting in biodiversity loss and landform alterations should be controlled, while oil exploration activities around the mud coast should adopt best practices.

Key words geomorphic units; geomorphic processes; ecosystem services