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Holocene sedimentation in the Banc d'Arguin, Mauritania

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The southern area of the Banc d'Arguin (Mauritania, NW-Africa) is a very complex and highly dynamic tidal flat system. In order to understand the spatial and temporal changes in this area and to gather more information about the mechanisms of the sediment transport, a sedimentological and geochemical investigation was performed on deposits recovered in the area north of the Isle of Tidra. The results of ^{14}C-age dating, TOC-, carbonate and nitrogen measurements, grain size analyses, microscopy, and X-ray-scanning allowed the characterisation of four main types of deposits: an $\sim$800 to 450 cal a BP old beach or shoreline, different types of tidal flats (sandy to mud flat) that developed since $\sim$250 cal a BP, seagrass stands in the younger part of the sediment succession and storm layers of various ages. The interpretation of the cores' highly non-continuous succession on the basis of the modern facies distribution allowed the postulation of a former island that covered large parts of the study area. As a result of persistent wind and wave erosion in addition to short-term catastrophic storm events, the island was split into various smaller islands. Further erosion caused the inundation of large parts of the study area and is still shaping the modern coast of the Isle of Tidra.