Past environmental changes during the late Holocene sea-level fall (last 2.7 Ka) at the NE coastal plain of Argentina

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Here we present a reconstruction of vegetation history and environmental changes at the central zone of Bahía Samborombón during the Late Holocene sea-level regressive phase (last 2.7 Ka) corresponding to MIS 1. This study is an integrative approach based on the combination of geomorphological and micropaleontological (pollen, non-pollen palynomorphs and foraminifera) proxy data. We found agreement among the environmental inferences from each proxy, which clearly show the evolution of the estuarine saltmarsh from an intertidal environment under significant marine influence towards a supratidal brackish-freshwater environment as sea-level was falling. The evidence of this evolution is (1) coastal progradation encompassing at least 5.7 km as revealed by relict shorelines. Saltmarsh elevation is evidenced as a result of accretion due to fine sediments accumulation of at least 1.2 m thick. We posit based on these values, a significant progradation and accumulation processes. (2) Plant succession, characterized by the replacement of low saltmarsh vegetation by that typical of high saltmarsh; which then is associated to brackish-freshwaters plant communities in shallow water-bodies environments. (3) A gradual decrease of dinocysts and foraminifera assemblages, the latter absent during the last millennium indicating a decrease in marine influence and the consequent lower salinity values. Bahía Samborombón coastal plains became a regional scale character during the last 2.7 Ka due to its surface increase, turning into one of the most extensive southeastern-South America saltmarshes, currently constituting a biosphere reserve.