



## PALEOENVIRONMENTAL EVOLUTION OF ABROLHOS DEPRESSION, BAHIA - BRAZIL

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The Abrolhos carbonate shelf has the largest and richest coralline ecosystem in the South Atlantic, harboring a great variety of species and encompassing the region of Abrolhos Depression, a paleolagoon ecosystem in a recent past. Within the growing concern about environmental climate change, studies have been searching to understand the panorama of past environmental variations, aiming to create models that are able to predict ecosystem changes and vulnerability. In this context, foraminifera have been extensively used as bioindicators in paleoenvironmental studies. When combined with geochemical proxies, foraminifera become formidable tools to map the past environmental evolution of marine ecosystems. Analyses of carbon content (organic and carbonate), x-ray fluorescent spectroscopy, benthic foraminifera assemblages and paleoecological indices were applied in the upper 100-cm of the sedimentary core GeoB3232-2, collected at 40m water depth, aiming to reconstruct the paleoenvironmental evolution of the area, establish the conditions to carbonate precipitation and understand the continent-ocean dynamic in a by-pass domain represented by a paleolagoon depression on the carbonate shallow shelf of Abrolhos. Two different and statistically significant stages were found from the base to the top of the register: (a) Stage I, marked by lower levels of organic and inorganic carbon, high Ti/ Ca ratio, and reduced foraminifera density, as well as smaller values for the FORAM index; and (b) Stage II, with higher values of carbon content and foraminifera density. Foraminiferal fauna was mainly controlled by the carbonate content and the assemblages have characterized three different coastal environments: (1) mixohaline environment, (2) transitional environment, and (3) carbonate shelf. Variations in the terrigenous input, indicated by the Ti/ Ca ratio, have modulated the evolution of the depression, influencing the benthic foraminifera settlement. It was characterized an environment that evolved from mixohaline to the recent marine conditions, being the Holocene relative sea level variations the main reason of the sedimentation changes registered in sediments.

Keywords: benthic foraminifera, sedimentary geochemistry, sea level changes.