

## **MEASUREMENTS OF CALCIUM CARBONATE REMOVAL BY BORING SPONGES, NORTH BAHIA CORAL REEFS, BRAZIL**

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Clionidae boring sponges have long been known to exert an important influence on the dissolution and recycling of accumulated calcium carbonate, particularly from coral reefs. Up to 50 -90% of  $\text{CaCO}_3$  removed from the coral skeleton may be caused by sponge activity, which may be associated with nutrient availability, water turbidity and rate of sedimentation. This work focuses on the identification of endolithic sponges from the endemic coral *Siderastrea stellata* in order to estimate the rate of bioerosion of the reefs located along the north coast of the State of Bahia (Eastern Brazil), which are subjected to the influence of a highly siliciclastic sediment influx and a nutrient enrichment. This coral species was chosen because it is amply distributed along the entire coast of Brazil, and is particularly abundant in the shallow parts of the coastal reefs. The bioeroded area was measured in X-ray images, and preliminary results indicate that coral specimens are significantly eroded by an endolithic fauna composed of clionid sponges, bivalves, worms and barnacles. The estimated percentage of the  $\text{CaCO}_3$  removed from coral skeleton, by all bioeroders, range from 2 to 28% and *Cliona celata* is responsible for up to 60% of all bioeroded material. Clionid bioerosion is more frequent in the shallowest reefs, a fact that corroborates previous data of elevated nutrient levels in the nearshore reefs of north Bahia. The same increase in nutrient levels that promote higher abundance of bioeroding organisms might also result in environmental degradation and in the general demise of coral reefs.