

# ***A PLEISTOCENE PERSPECTIVE ON THE EFFECTIVENESS OF THE HOL CHAN MARINE PRESERVE, BELIZE C.A***

**BISHOP, Dana Christine** and GREENSTEIN, Benjamin, Geology, Cornell College, 810 Commons Circle, Mt. Vernon, IA 52314, d-bishop@cornellcollege.edu

Globally, coral reefs appear to be suffering from a combination of anthropogenic and natural disturbances. While ecologists have noted the waning health of coral reefs, the lack of initial (or “baseline”) data to center our concept of a “pristine” reef has confounded attempts to establish marine protected areas (MPAs) to conserve coral reefs. The Pleistocene fossil reef record has been demonstrated to preserve reef coral communities that were thriving long before humans could potentially degrade them. Utilizing paleoecological studies of Pleistocene fossil coral reefs to provide baseline ecological data should allow us to begin to conceptualize the enormity of present day coral reef degradation. The purpose of this study is to determine how the composition of coral reefs inside the Hol Chan marine preserve, established in 1987 in Belize C.A., compares to the reefs outside of the preserve and to a nearby Pleistocene fossil reef (Rocky Point). The Hol Chan marine preserve has involved the help of many organizations on many different levels. However, it is possible that the most essential source of relief to the coral reefs of Belize is rooted in the new-found appreciation, respect, and pride of the local Belizeans. We compared the taxonomic composition and relative abundances of corals composing modern reefs within and outside the preserve to those obtained from the fossil reef. Results suggest that the reefs in the preserve are very comparable to Pleistocene reefs exposed at Rocky Point and therefore the marine preserve appears to conserve a reef system similar to those which existed before human disturbance. Worldwide, the development of a land ethic is a vital step in the salvation of the coral reef ecosystems.

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