

*HOLOCENE PATCH REEF DISTRIBUTION AND CORAL COMMUNITY ECOLOGY,  
SOUTHERN SHELF OF BELIZE (BRITISH HONDURAS)*

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*ABSTRACT*

A wide variety of living coral patch reefs flourishes in southern offshore Belize (British Honduras). They have developed as small shoals along the quartzose mainland coast, as a complex maze of reefs in the deep shelf lagoon, and as low buildups on the shallow carbonate barrier platform that forms the seaward shelf margin. In the central portion of the shelf lagoon, relief on the patch reefs is as much as 30 meters.

Sixty-seven patch reefs in this area have been classified into types based on shape, relief, taxonomic composition, and zonation of the coral communities. Low relief, low diversity reefs are typical of the brackish and turbid coastal waters, while low relief, high diversity patch reefs are characteristic of the shallow, clear, marine waters of the barrier platform. High relief patch reefs in the shelf lagoon vary markedly in coral composition and zonation depending on their location relative to surface current circulation, fetch and wave action, and proximity to other shoals, and to elevation of the crest of the seaward barrier reef. They also vary in the degree to which the coral communities have modified the initial topographic high on which they were established. It has been shown by previous workers that the distribution of patch reefs in the shelf lagoon is primarily controlled by an inherited, pre-Holocene, karst surface influenced by the underlying geologic structure. The subsequent development of patch reefs during rising sea level is dependent on local marine conditions. It is possible that the diverse nature of the coral communities observed in this area represents stages in a genetic sequence of faunal succession that would be a useful model in understanding transgressive reef development in the Holocene.

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