

## **The Reef Structure and Zonation of the Cretaceous Edwards Limestone Bioherms of the Central Texas Reef Trend and an Investigation of Bermudian Reefs as a Potential Modern Analog**

Adam Damman  
Baylor University Department of Geology, Waco, TX;  
[Adam\\_Damman@baylor.edu](mailto:Adam_Damman@baylor.edu)

The Early Cretaceous Edwards Limestone of Texas consists of two distinct reef systems: the Stuart City Barrier Reef which has been extensively studied due to hydrocarbon productivity, and the patch reefs of the Central Texas Platform. These patch reefs have been far less studied and have not been successfully linked to a modern analog. Preliminary research indicates that the living reefs of Bermuda have many similarities to the Edwards patch reefs. Bermuda fieldwork, in collaboration with the Bermuda Institute of Ocean Sciences (BIOS), includes fifteen SCUBA transects to determine coral and algal zonation and sediment samples collected at fixed depth intervals for textural analysis.

Central Texas fieldwork consists of biostratigraphic and textural studies of five elongate and circular patch reef sites. Rudists, which are the dominant reef-builders of the Edwards Limestone, are believed to have had algal symbionts similar to zooxanthellae in modern corals. Therefore, light should be a controlling factor in establishing their zonation, along with water energy, sedimentation, and salinity. To accurately reconstruct the patch reefs, a thorough description of rudist zonation is essential. Bulk samples of reef material are being collected along vertical and horizontal grids through each bioherm. These samples are slabbed and polished to identify rudists and other biotic components. Mud layers, which are believed to be reef kill-zones, are being examined in detail.

If successful, this project will not only provide the first modern analog for the Central Texas Edwards bioherms, but will refine our understanding of the Cretaceous marine paleoenvironment of Central Texas.