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Rudistids of the South Florida Lower Cretaceous Sunniland Formation

During the Aptian, shallow-water carbonates and anhydrites of the Sunniland Formation were deposited in southern Florida. Within the formation, scattered debris mounds of fragmented skeletal biota are deposited on micritic tidal mud-flats. The dominant biota of these mounds are fragmented rudistids, none of which occur in live position. Other biota are chamid bivalves, algae, foraminifers, and other skeletal fragments. Various depositional models of the mound buildups are compared to that of this study. Petrological analysis indicates that rudistid specimens are mainly members of the Requieniidae, Monopleuridae, and Caprinidae. The presence of fragmented rudistid particles, marine burrows and root casts, and widespread microbored and algal-coated skeletal material, supports the debris mounds represent a tidal facies. Sunniland buildups do not contain corals, sponges, and stromatoporoids that typically occur with rudistids in constructional buildups. Biotic abundance and content varies among buildups based on their proximity to tidal channels, local wave energy, and quantity of skeletal source material available. These buildups formed during a sealevel rise, and a later regression resulted in subaerial exposure and freshwater leaching of rudistid fragments. As a result these tidal debris mounds are excellent proven reservoirs and worthy exploration targets.