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Relationships developed from Caicos Platform, southeastern Bahamas

Jeffrey J. Dravis, Adjunct Professor, Harold R. Wanless



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# **Impact of Strong Easterly Trade Winds on Carbonate Petroleum Exploration - Relationships Developed from Caicos Platform, Southeastern Bahamas**

JEFFREY J. DRAVIS

Geological Consultant

Dravis Interests, Inc., and Dravis Geological Services, Houston, Texas

Adjunct Professor, Rice University, Houston, Texas

HAROLD R. WANLESS

Department of Geological Sciences

University of Miami

Coral Gables, Florida

## **ABSTRACT**

Brisk, persistent easterly trade wind influences define Holocene patterns of carbonate sedimentation across the Caicos Platform (southeastern Bahamas). Resultant predictive sedimentary facies models based on trade wind influences are more widely applicable to the exploration for subsurface carbonate plays than are existing models based on the northern Bahamas facies patterns, which are characterized by gentle trade winds and strong platform-margin-related oceanic processes (swells and tidal currents). The Caicos Platform relationships may be more applicable because many ancient shallow carbonate depositional environments were within the trade wind belts and commonly within broad intracratonic seas that were little influenced by oceanic processes.

The grainstone-dominated Caicos Platform exhibits reservoir potential over much of its surface, in contrast to northern Bahamian platforms, where oceanic tidal currents or swells and gentle easterly trade winds confine higher energy environments with reservoir potential to platform margins. Strong easterly trade winds across Caicos Platform promote widespread Holocene platform-interior oolitic, skeletal and grapestone grainstone bodies on this platform. Orientations of ooid sand bodies vary depending on preexisting topography, water depth and bottom energy. Shallow subtidal ooid sand

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