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## **Isolated Platform Top-Set Sequence Development: Role of Island-Margin Back-Cutting and Infill: Pleistocene of Providenciales, Caicos Platform, BWI**

Outcrops at Cooper Jack Point on Providenciales Island provide an example of Late Pleistocene evolution of a platform-facing island margin on the isolated Caicos platform. Stage 5 transgression over lithified eolian strata cut a notch and sea cliff at the landward edge of the transgressive surface and isolated a small island from the ancestral Providenciales Island. A shelly tombolo subsequently linked the two islands while a shelly conglomerate aggraded near the foot of the sea cliff. Both facies are overlain by a skeletal-pellet-oolite grainstone with an environmentally restricted fauna. The grainstone is capped by a mature caliche. A rooted, thin oolitic eolianite overlies this paleosol, and a modern caliche caps the entire succession. This sedimentary record is interpreted as two highstand deposits separated by unconformities. The first was high enough to deposit marine strata above present sea level, whereas the second high stand only contains eolian transported sediment.

This study demonstrates that topset sequences far from the platform margin can have complex internal stratigraphy and variable lateral extent. Thin deposits subjected to sufficiently long subaerial exposure can develop distinct, mature soil zones separated by less than a meter of carbonate strata on platform tops during high-frequency, high amplitude sea-level cycles. The shelly facies had previously been interpreted as a drowning of Providenciales between the two eolianites, however this facies does not extend far onto the island, so Providenciales was subaerial exposed throughout the late Pleistocene, even when most of the Caicos isolated platform was flooded.