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## **Fluvial-Deltaic Facies and Depositional Architecture of the Lagnaipe Delta: Within-Delta Variability**

Accompanying the stepped fall of eustatic sea level from oxygen isotope stage 5 to the stage 2 glacial maximum (approximately 18 ka BP), the Mobile River entrenched a channel network into the shelf and built a delta at the shelf edge east of the modern Balize delta lobe of the Mississippi River. The clinoform wedge, that defines the Lagnaipe delta, built in two simultaneous progradational thrusts, defining western and eastern lobes. Each of these deltaic depocenters contains constructional subcomponents composed of discrete sand-rich clinoform sets interpreted to be products of auto cyclic processes. Borings through both the western and eastern lobes indicate coarsening upward trends, but with beach and shell-rich sands characterizing the eastern lobe. Clinoforms of each downlap on a condensed section of oxygen isotope stage 5 age. Eroded clinoform tops of the entire delta define a complex NE-SW oriented fluvial scour filled with graveliferous sand. Carbon 14 dates from both the eastern and western depocenters indicate similar times of deposition, 19-20 ka BP and both are situated today at elevations of about 100 m below present sea level. A younger clinoform wedge at an elevation of 120-125 m below present mean sea level is part of the eastern progradational fairway. A boring downslope of the shelf edge clinoforms contains a thin interval of oxygen isotope stage 2 sediments. Slump deposits at the toes of both eastern and western clinoform wedges coupled with these borehole data suggest sediment by-passing to deep water depositional sites.