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### **Evolution and Stratigraphy of a Recent Flood Tidal Delta: Raccoon Pass, Timbalier Islands Louisiana**

Raccoon Pass is a wave-dominated tidal inlet embedded in the transgressive Bayou Lafourche barrier shoreline. Raccoon Pass separates East Timbalier Island and the Bayou Lafourche erosional headland, which has retreated more than 2 km landward within the last 100 years. Changes in width, depth, and position of the tidal inlet reflect variations in sediment supply and storm activity. As the barrier island-tidal inlet system migrates landward, sand is transported into the bay by overwash and flood-tidal currents, building a large flood-tidal delta. Historical aerial photographs and vibracores have been used to document the evolution and stratigraphy of the Raccoon Pass flood delta. Presently, the delta extends 1.5 km into the bay over an area of several square kilometers. The 1 to 2-m thick flood delta facies consists of very fine to fine-grained, moderately well-sorted sand in sharp contact with subjacent bay muds. Locally, as much as 1.0 m of sandy mud within the coarsening upward flood delta facies suggests an interruption of deposition in response to spit migration or episodic inlet closure. Unlike flood deltas in hydrodynamic equilibrium, the flood delta at Raccoon Pass is thickest proximal to the inlet and thins bayward. This geometry is the result of rapid transgression of the coast, which inhibits formation of an ebb shield before the sand is reworked and the inlet shoreline migrates landward. Thus, the Raccoon Pass flood delta represents an amalgamation of washover, recurved spit, and flood-tidal current deposits.