

THE OFF-SHELF PORTION OF THE HARRIS DELTA: A RE-EXAMINATION OF THE DOWNDIP WOODBINE-EAGLEFORD OF EAST TEXAS

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ABSTRACT (NO TEXT SUBMITTED)

This seismic, log and core study relates the Eagleford-equivalent Harris delta north of the Stuart City shelf edge with the "downdip" Woodbine-Eagleford section south of that shelf edge. Together, they comprised a single contemporaneous deltaic complex whose farthest progradation formed a continuous front. One of two major lobes prograded southwestward toward Kurten field in Brazos County, the other (partly eroded) prograded southeastward beside the low-lying Sabine (uplift) landmass into Polk County. Periodic avulsion between the lobes may account for the stacked and re-worked offshore bars in the Kurten field.

The delta crossed the Stuart City shelf edge in Polk County in the Seven Oaks-Hortense field area (Ramsayer, 1979; Foss, 1979) and continued to prograde southward into deeper, higher-energy water. This environment oversteepened the "off-shelf" Harris delta, facilitating slumps and gravity flows that deposited debris-flow and turbidite sands along with predominantly fine-grained prodelta sediments. More familiar deltaic facies (outer-fringe) are present in the uppermost section. Unrelated submarine-slope sands had been concentrated in the Sugar Creek field area of Tyler County by the nearby Sabine promontory (Siemers, 1978), perhaps well before the delta arrived.

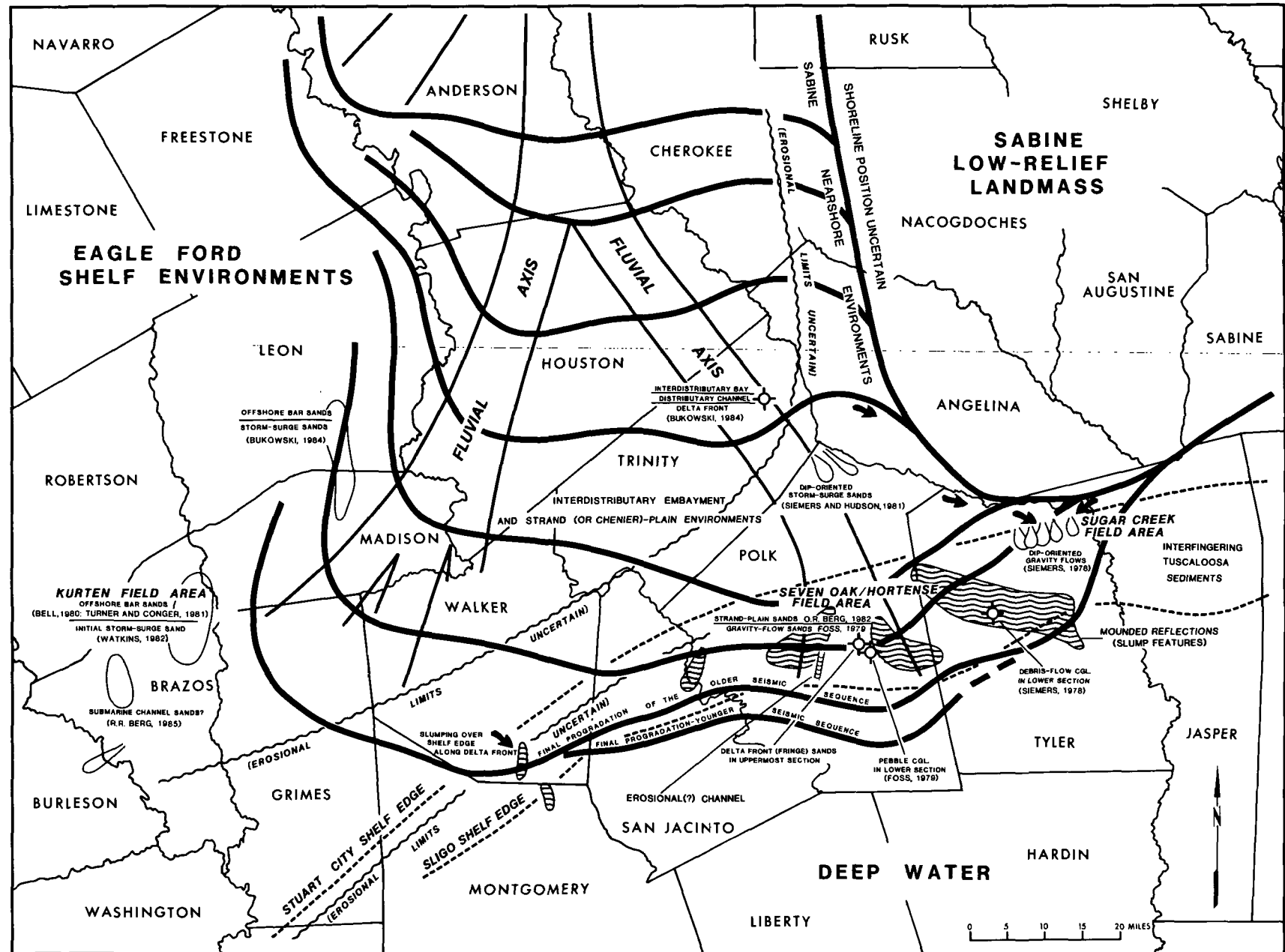
Two seismic sequences have been described for the downdip Woodbine-Eagleford (Vail et al, 1977). The boundary between them parallels the Sligo shelf edge and is a strong reflection; however, it commonly lacks definitive reflection terminations. This sequence boundary represents a depositional hiatus that occurred when the delta progradation was slowed at the precipitous Sligo shelf edge, rather than a sea level event. The younger sequence appears to represent resumed Harris delta progradation. To the east in Jasper County, both off-shelf Harris delta sequences appear to interfinger laterally with genetically unrelated Tuscaloosa sediments.

A number of interesting features of the off-shelf delta were observed. Mounded reflections occur at the section base and radiate outward from Polk County. They record the largest slumping events, and conglomeratic debris-flow sands are present in cores taken within these slumps. A large erosional(?) channel cuts into the top of the delta, and thickness anomalies associated with contemporaneous(?) faulting may indicate local sand depocenters.

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Regional Paleogeography: The Eagle Ford Harris delta complex north and south of the Stuart City shelf margin