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**Geology - Sedimentary Geology; Studies from University of Texas at Austin Add New Findings in the Area of Sedimentary Geology (Revisiting Late Paleocene Lower Wilcox Deltas, Gulf of Mexico: River-dominated or Mixed-process Deltas?)**

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2019 SEP 27 (NewsRx) -- By a News Reporter-Staff News Editor at Science Letter -- Current study results on Geology - Sedimentary Geology have been published. According to news reporting originating from Austin, United States, by NewsRx correspondents, research stated, "Spatial and temporal changes in physical depositional processes of shallow-marine deltas affect facies distributions, which are critical for reconstructing paleogeography and predicting reservoir heterogeneities. The updated interpretation of the classical ancient 'river-dominated' Lower Wilcox delta in the Gulf of Mexico suggests more significant process variations than previously suggested."

Financial supporters for this research include STARR (State of Texas Advanced Oil and Gas Resource Recovery) program at the Bureau of Economic Geology (BEG), Jackson School of Geosciences, the University of Texas, RioMar consortium.

Our news editors obtained a quote from the research from the University of Texas at Austin, "The dominance of the storm-wave process is indicated by wave-ripple laminae and combined-flow ripple laminae in the fair-weather intervals, and hummocky/swaley cross-stratification and low-angle laminae in the storm beds. However, the relatively simple alternation of fair-weather beds and storm beds is complicated by the presence of: 1) normal and inversely graded siltstone to very fine-grained sandstone beds, suggesting hyperpynites generated during the river flooding season; 2) mud-dominated heterolithics with delicate mud rhythmites, suggesting tidal modulation between the storm events. The storm-wave generated succession, with preservation of both river flood and tidal signals during fair-weather condition, represents regressive shoreline to-shelf outbuilding. The wave-dominated delta or shoreface deposits are commonly truncated by fluvial-dominated, tide-influenced distributary channels, then overlain by tidal heterolithics and gradually open-shelf deposits, suggesting the development of small estuaries during transgressive phases of the Wilcox shoreline. The interpreted mixed process delta is linked to the last growth stage of the Lower Wilcox Group, prior to inundation of the Texas shelf by thick marine mudstones. Its depositional setting was characterized by the widest Lower Wilcox shelf (>50 km) and a weakening sediment supply, resulting in a stronger wave and tide influence, relative to a weak fluvial influence. This work thus provides a well-constrained example of the complex interplay of fluvial, wave, and tidal currents in a process stratigraphy where decreasing river flux and relative sea level rise allowed wave reworking to become the dominant theme, even though the same system has been previously interpreted as a classic river-dominated delta."

According to the news editors, the research concluded: "Many existing interpretations of ancient deltas thought to have mainly been controlled by a single process may need to be revisited and revised to take into account the natural spatial and temporal variability inherent to the shallow marine realm."

For more information on this research see: Revisiting Late Paleocene Lower Wilcox Deltas, Gulf of Mexico: River-dominated or Mixed-process Deltas? *Sedimentary Geology*, 2019;389():1-12. *Sedimentary Geology* can be contacted at: Elsevier, Radarweg 29, 1043 Nx Amsterdam, Netherlands. (Elsevier - [www.elsevier.com](http://www.elsevier.com); *Sedimentary Geology* - [www.journals.elsevier.com/sedimentary-geology/](http://www.journals.elsevier.com/sedimentary-geology/))

The news editors report that additional information may be obtained by contacting J.Y. Zhang, University of Texas - Austin, Bur Econ Geol, Jackson School of Geosciences, Austin, TX 78712, United States. Additional authors for this research include W. Ambrose, R. Steel, V.M. Rossi and Y. Peng.

Keywords for this news article include: Austin, United States, North and Central America, Sedimentary Geology, Geology, University of Texas at Austin.

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