

PONTCHARTRAIN: FRANGENIC LAKE

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ABSTRACT

The north shore of Lake Pontchartrain has been viewed as a continuation of the Gulf of Mexico shoreline, interrupted on the east by the Pearl River delta and on the west by the Mississippi flood plain. In fact, the Lake's northern shoreline has a very different azimuth (290°) than the Mississippi coast (265°). Although the Gulf at some time in the near geologic past must have covered the Lake area, the Lake as it now exists was formed by an entirely different process.

The Lake's northern shoreline coincides with a well-documented fault system that extends at least from Baton Rouge to the Lake's eastern boundary. This system, known collectively as the Baton Rouge fault, is related to an underlying Lower Cretaceous reef trend that extends from Mexico almost to peninsular Florida (The Florida Scarp). A fault system that seems to coincide with the reef's seaward face expanded Upper Cretaceous sands (Lower Tuscaloosa) to form excellent gas-condensate reservoirs in south-Louisiana, and growth conditions.

Surface faults have been mapped near the edge of the Late Pleistocene Prairie Terrace along relict shores of Lake Maurepas and Pontchartrain by field work and by Lidar imaging. This surface fault trend has been eastward by observation of structural damage to US-11 and I-10 bridges.

Rather than being formed by fluvial isolation, both lakes were created by faulting, and are frangenic lakes.