

HISTORY OF THE APALACHICOLA RIVER DELTA AREA, FLORIDA¹

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The Apalachicola River and its tributaries have delivered significant quantities of sediment to the northeastern corner of the Gulf of Mexico since early Tertiary time. The location of a major drainage outlet in the Alabama-Florida-Georgia tri-state area must be a matter of structural control, inasmuch as well-developed Cretaceous cuestas across southern Alabama and Georgia divert important drainages to either the east (Atlantic Ocean) or the west (Alabama River system, draining into Mobile Bay). The early Tertiary predecessor of the Apalachicola River may have been located about 75 km east of the present river.

The modern gorge of the Apalachicola has been occupied since perhaps middle Miocene time, when a previous estuary (in an important graben or half-graben) was completely filled with sediment. The Mio-Pliocene river built three or four cusped deltas, at elevations of about 80, 50, 35 and perhaps 25 meters. Three of these still exhibit relic offshore flat, barrier island and drained lagoon topography.

Clear evidence is present in the area for Pleistocene sea levels at 9, 6, 0 and -2 meters. During the Pleistocene, the Apalachicola dammed the mouth of the Chipola River with sediment forming Dead Lake and almost completely filled a large estuary near the village of Apalachicola, leaving Lake Wimico and East Bay as remnants. Many of the features of the modern cusped delta (including offshore shoals) have been formed, and reworked, as sea level has moved up and down during the Pleistocene. One of these features, an as yet inadequately-explored filled channel perhaps 35-40 meters deep, is situated under the present course of the river.

The low wave energy level in the northeastern corner of the Gulf of Mexico—much like that along geosynclinal coasts of the past—is responsible for preservation of many delta characteristics which probably would have been eliminated if breaker heights had been typical of an open ocean.

Subtle structural deformation, still continuing in the delta area, partly controls the overall delta outline as well as many of the details. The prime structural trend in the area has a bearing of N. 50° E; there is less evidence for linears having a bearing of roughly N. 70° W.

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