

LATE PLEISTOCENE STRATIGRAPHY OF SOUTHERN HANCOCK COUNTY, MISSISSIPPI

Freddie J. Pellegrin¹

ABSTRACT

The outcropping Pleistocene deposits of southern Hancock County, Mississippi, previously designated as the fluvial-alluvial Prairie Formation, were found to be composed of five lithologic units of various origins and to have been deposited during at least three late Pleistocene high sea-level stands. Outcropping Pleistocene deposits were mapped using high-altitude photography, soil and topographic maps, field observations, and numerous core-hole descriptions. Environmental reconstruction was achieved through the analysis of the vertical and lateral relationships of the deposits and through the comparison of the relative elevations of marsh-lagoon and nearshore deposits.

The outcropping Pleistocene deposits, previously included in the fluvial-alluvial Prairie Formation by Otvos, were divided into three sequences consisting of five lithologic units. The sequences (in order of highest to lowest) and their respective units are: Prairie (Northern Sand), Texas Flats (Upper Clay and Upper Sand), and Devils Swamp (Lower Clay and Lower Sand). These units are of fluvial (Northern Sand), strandplain (Upper Sand), lagoonal (Upper Clay and Lower Clay), and barrier (Lower Sand) origins and were deposited as components of coastal systems which developed during late Pleistocene high sea-level stands. Late Pleistocene sea-levels of coastal Mississippi stood at approximately 30 feet (10 m.), 20 feet (7 m.) and 12 feet (4 m.) above present mean sea level and were separated by periods of low sea-level stands. These late Pleistocene sea levels were compared to those established for the Atlantic Coast and were found to be generally compatible.

¹The University of Mississippi, Department of Geology and Geological Engineering, University, Mississippi.