Coastal plain lineaments with suspected tectonic origin and expressed in scarps, rectangular drainage patterns, including abrupt river course changes apparently also influenced the outline of certain Late Pleistocene and recent shoreline segments.

The contrast between numerous pre-Sangamon Atlantic coastal plain barrier-lagoon complexes and their absence on the Gulf Coast may have regional tectonic explanation. No pre-Sangamon Pleistocene marine and brackish inshore units were found in drillholes in the Mississippi-Alabama and Apalachicola Bay areas. The Biloxi Formation often rests on late Miocene deposits. Coastal progradation apparently was minimal between Citronelle and Sangamon times.

Repeated vertical movements in the narrow (0 to 17 km) Pleistocene coastal plain on the NE Gulf may have been instrumental in the wholesale erosion of the earlier littoral units. The relatively high (20 to 40 m) summit elevations of the Citronelle Formation along the present shore imply significant Pleistocene uplift. During glacial stages, the surface relief and erosion intensity increased further.

BED FORMS ON WEST FLORIDA SHELF AS DETECTED WITH SIDE-SCAN SONAR

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ABSTRACT

A Side-Scan Sonar investigation on the West Florida shelf reveals a multitude of bed form types. A nongenetic classification was devised based on apparent wavelength and ripple index (R. I. = Wavelength/wave height). This system divides the observed features into four groups: *Giant* - wavelength greater than 30 meters, R. I. 30 to 100; *Large* - wavelength less than 30 meters but greater than 1 meter, R. I. 15-30; *Small* - wavelength less than 1 meter, R. I. 5 - 15; and *low-relief swells* - wavelength greater than 300 meters and relief only a few meters.

Five major zones roughly parallel to the coast are delineated according to the distribution of bed form types.

Zone A, parallels the coast line out to approximately 20 meters depth and is characterized by giant to large scale bed forms. These features are observed on the sonographs as long, sinuous, and sometimes bifurcating, troughs of high reflectivity (coarse-grained?) sediment, interspaced with mounds of presumably finer grained material. Similar bed forms described in the literature have been labeled "current lineations."

Zone B extends out to mid-shelf depth (40 to 100 m) and is characterized by "low-relief swells" and a few patches of giant to large-scale features. The low relief swells at times correlate with large elliptical patches of apparently fine sand on a relatively coarser grained, flat, seafloor.

Zone C is centered around the Florida Middle Gounds region and is characterized by small-scale bed forms and low-relief swells. These small scale bed forms observed on the sonographs resemble current ripples. The orientation of these ripples varies from predominantly N-S across the Florida Middle Grounds to an E-W orientation in areas farther south.

Zone D is situated offshore Cape San Blas along the Florida panhandle. The bed forms in this zone are characterized by high relief (2.0 to 8.0 m) giant scale features. Superimposed on the giant-scale bedforms and on the seafloor fringing this zone are small-scale bedforms resembling current ripples.

Zone E encompasses the outer shelf and is generally void of bed forms. However, a few unusual giant to large scale features are observed.

Most of the giant, giant to large and large-scale bed forms on the west Florida shelf are considered to be storm related features. In some cases the giant scale features and the low-relief swells may be relict structures left over from times of lowered sea level. The small-scale bed forms within Zone C are possibly the results of either internal waves or tides set up on the summer thermocline and/or currents created by Loop Current intrusion on the shelf. The latter event may also generate strong shelf edge currents creating the bed forms in Zone E.

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