

## Recent Sedimentation in St. Louis Bay, Mississippi

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### **Abstract**

Analysis of surface sediments from St. Louis Bay, Mississippi reveals significant input of sand from the Wolf and Jourdan rivers, and evidence of deposition of silts and clays within the northeast and northwest parts of the bay, caused by flocculation from the saltwater wedge entering the bay interacting with fine-grained sediment input from these rivers. White opaque crystals, gypsum, some with quartz crystal inclusions and heavy minerals were found in the river sediments. These same crystals were also found in the samples collected in the central part of the bay.

Comparison of present surface sediment patterns with a previous (1971) study reveals that a sand bar has formed in the northeast part of the bay, off the mouth of the Wolf River. Since 1971, high-sand (over 50%) sediments in the northwest bay appear to have been reworked eastward, into the central bay. A deposit of high-silt (greater than 50%) sediments in the northwest part of the bay also appears to have been reworked eastward, splitting into two distinct lobes in the central bay, separated by a region of lower silt content. At the mouth of St. Louis Bay, a region of high-silt surface sediments has extended farther northward into the bay, causing the replacement of a NE trend off Cowan Point containing low silt and (high 50%) clay content, by surface sediments with 10-50% clay content.

The previous study indicated the likelihood of at least two sources of sand for bay sediments, based on the presence of both angular and well-rounded quartz grains within the same sample. In the present study, comparison of the roundness of sand grains from the beaches on the coast east of Saint Louis Bay, from the Wolf and Jourdan rivers, and from sediments in the central part of the bay, failed to show any angular grains. From this it is possible that the angular grains found in 1971 were the result of redeposition of the sand grains Hurricane Camille.