

GIS APPLICATIONS IN THE STUDY OF HISTORIC SHORELINE CHANGE,  
COASTAL MISSISSIPPI

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GIS (Geographic Information System) is a computer-based system designed to support the capture, management, analysis, and display of spatial data. It was used to find the total acreage of erosion and accretion in predefined areas of interest. Using digitized shorelines (1850, 1917, 1950's, 1986) and ARC/INFO, a GIS software, we determined the environments that are actively changing on the Mississippi coast and islands. The shorelines were edited to remove extraneous data, then unioned together, attributed with the status of land or water, and finally the frequency and total acreage were determined for land changed to water and water changed to land. The same acreage for different environments can be consistently and reliably computed using GIS. The numbers can be interpreted by scientists to evaluate the effectiveness of a seawall or the vulnerability of a natural shoreline.