

GEOLOGICAL CONTROLS AND ENGINEERED STRUCTURES RELATING TO EROSION AND LANDLOSS IN THE BARATARIA QUADRANGLE OF SOUTH-CENTRAL LOUISIANA

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ABSTRACT

Wetland landloss is an ongoing phenomenon in many coastal areas of the world, but nowhere is this as apparent a problem than in Louisiana's Mississippi River Deltaic Plain (MRDP). The Barataria quadrangle experience one of the highest rates of land loss (634 ac/yr) in the MRDP during the period 1939-90; and this rate ranks among the highest for inland areas of this region. Additionally, the Barataria quadrangle is the only inland area of the MRDP having an accelerated rate of land loss for the period 1983-90.

Land loss due to natural factors (e.g. clastic sediment decline, erosion, sediment compaction, and regional subsidence) accounts for greater than 15.2% of the total loss (32,346.3 acres) measured by this study. Cultural factors which have directly impacted land loss in the Barataria quadrangle are largely confined to the effects canal dredging which accounts for 17.5% of the land loss. Indirect impacts of canal dredging (e.g. increased erosion, enhanced sediment compaction, increased salt water intrusion) account for an additional 67.3%.

Most of the increased land loss during 1983-90 is occurring via erosion of shorelines along bayous, bays, and lakes; and may be due to changes in area hydrology caused by the cumulative effect of canal dredging.