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^{210}Pb and ^{137}Cs Geochronology of the Lake Fausse Pointe Region of the Lower Atchafalaya Basin

Sediment deposition over the past century in the Lake Fausse Pointe region of the lower Atchafalaya basin was investigated through radioisotopic study of vibracores. Gamma spectrometric analysis of ^{137}Cs and ^{210}Pb isotopes reveals sedimentation rates on The order of 1- 6cm/yr, both inside and outside of the western guide levee of the Atchafalaya Basin. All cores analyzed display a sharp transition upward from blue-gray clay-rich lacustrine and backswamp deposits to red muds and sands that occurred between ~1875 and ~ 1955, based on ^{137}Cs and ^{210}Pb geochronology. Earliest infilling appears to have occurred near the center of lacustrine basins, with later deposition along basin margins. This timing is coincident with rejuvenation of flow in the Red and Atchafalaya Rivers, after breakup of The Great Raft log jams (Tyson, 1981). Decreased sedimentation rates are observed outside the western guide levee after the period of levee construction, ~1940-1960 (Ruess, 1998). The results of this study are supported by previous research that rapid deposition occurred between 1930 to 1960, when much of this basin region underwent rapid infilling with sediments derived from the Red and Mississippi Rivers.