
Geomorphology and Holocene Fluvial Depositional History in the Mississippi River Valley near Lafayette, Louisiana: Interpretations of LIDAR Data Performed in 3D Virtual Reality

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ABSTRACT

This paper presents interpretations of LIDAR data from a region spanning portions of the Prairie Complex and the Mississippi River valley near Lafayette, Louisiana. These interpretations include a definition of four distinct stages of fluvial deposition in the Mississippi River valley in this area and the probable influence of these stages on flow within the Vermilion River incision which is cut into the Prairie Complex. Some leveed channels, which are much smaller than the channels of the Mississippi River, Red River or Bayou Teche, are mapped. One of these channels is interpreted as resulting from a crevasse of the Teche-Mississippi system.

The LIDAR data coupled with a 3D virtual reality system were used to make these interpretations possible due to the high resolution of the data and the ability to view, manipulate, interpret and mark the data interactively in 3D.