Introduction

Situated in the Mississippi Alluvial Plain of the Gulf Coast Plain Landscape Conservation Cooperative (GCPLCC), the Chitimacha Tribe is one of five federally recognized tribes in Louisiana. The Tribal seat, trust lands reservation, and adjacent Tribal owned lands are located near Charenton, Louisiana, totaling nearly 1,000 acres. The Chitimacha, with a population of approximately 1,400 people, is currently impacted by extreme events, which is expected to increase with climate change. The additional stress from storms will likely increase the vulnerability to catastrophic impacts in the event of a breach in the Atchafalaya Basin Spillway levee. A collaborative effort between the U.S. Geological Survey (USGS) and the Chitimacha Tribe has been initiated to provide resources and expertise to increase the Tribe’s ability to prevent, plan, and prepare for these environmental challenges. By offering technical skills, providing access to environmental data, and increasing awareness of environmental issues, the Chitimacha will be better prepared to plan and adapt to the environmental impacts facing their lands related to land use and climate change.

For this project, USGS researchers asked how Chitimacha Tribal Lands might be impacted by future sea level rise scenarios. These models illustrate some flooding within the southwestern boundary of Chitimacha Tribal Lands.

Methods and Data

This map of the Chitimacha Tribal Lands and surrounding areas illustrates the magnitude of potential flooding resulting from future sea level rise at 2 feet, 4 feet, and 6 feet above current sea level. These projections do not account for natural high and low water events, which could lead to increased flooding. Sea level rise data for this map display was downloaded from the National Oceanic and Atmospheric Administration (NOAA) Office for Coastal Management through the NOAA Sea Level Rise Viewer (https://coast.noaa.gov/slr). Seaside contours visible in this image, and derived from the high-resolution version of the USGS National Hydrography Dataset (USGS, 2015), such as outterbreaks, seashore lines, and so on, were created from the NOAA sea level rise layers and appear in this map to delineate the sea level rise projections surrounding the Chitimacha Tribal Lands. Coastal conditions in the Mississippi Delta region are extremely dynamic, with both natural and human variables. Current coastal management efforts in the Delta are focused on maintaining the coastal system as a barrier into the Gulf of Mexico. Although this information product, for the most part, is in the public domain, it also may contain copyrighted materials as noted in the text. Permission to reproduce copyrighted items is granted to the extent provided by law. This product was prepared as an official United States Government work. According to 17 U.S.C. 105, copyright protection is not available for such works. Endorsement by the U.S. Government.

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Potential Sea Level Rise on Chitimacha Tribal Lands in Louisiana

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References


