

-91.8750°

31.8750

607000mE





-91.7500°

31.8750°

Hua

Hsm

Hsl

Hom

Qc

Qaf

Рр

Pib

18

Description of Map Units

QUATERNARY SYSTEM



- Holocene undifferentiated alluvium—Undifferentiated deposits of small upland streams: unconsolidated alluvial deposits of minor streams and creeks filling valleys incised into older deposits, with textures varying from gravelly sand to sandy mud.
- Small river meander-belt deposits—point bar deposits underlying the meander belts of small rivers.
- Small river natural levee deposits—deposits forming low natural levees flanking the meander belts of small rivers.
- Backswamp deposits—fine-grained Holocene deposits of rivers, underlying the flood basins between meander belts.
- Ouachita River meander deposits—point bar deposits underlying meander belts of the Ouachita River.
- Ouachita River natural levee deposits—deposits forming low Hol natural levees flanking the meander belts of the Ouachita River. Where observed in the Monroe area the sediments comprise grayish brown silty clay with well developed soil structure.
- Ouachita River distributary deposits—sandy and silty sediments Hod occupying abandoned courses of a relict distributary system of the Ouachita River. In the Monroe area the sediments comprise yellowish to orangish brown silty very fine sand with varying though relatively small proportions of admixed clay.
- Ouachita River crevasse splay deposits—sandy and silty Hocs sediments forming fanlike crevasse splays that originate from the Ouachita River. Where observed in the Monroe area the sediments comprise interlaminated gray-brown silt and organic-rich, dark clayey silt.
- Arkansas River meander-belt deposits-point bar deposits Harm underlying meander belts of the Arkansas River.
- Arkansas River natural levee deposits-deposits forming low Harl natural levees flanking the meander belts of the Arkansas River.
- Arkansas River distributary deposits— sandy and silty Hard sediments occupying abandoned courses of a relict distributary system of the Arkansas River.

QUATERNARY UNDIFFERENTIATED

Quaternary colluvium—undifferentiated colluvial deposits forming lobate to apronlike landforms.

Quaternary alluvial-fan deposits—unnamed alluvial-fan deposits.

PLEISTOCENE



Pleistocene and older strata. Loess is shown where the total thickness is 1 meter or greater.

Sicily Island Loess-Eolian silt veneer, possibly of late Sangamon to early Wisconsin age, mantling Pleistocene and older strata. Loess is shown where the total thickness is 1 meter or greater.

PRAIRIE ALLOGROUP

Prairie Allogroup, undifferentiated—a diverse depositional sequence of late to middle Pleistocene deposits of the Mississippi River, its tributaries, and coastal plain streams; includes terraced fluvial (meander belt, backswamp, and braided stream), colluvial, estuarine, deltaic, and marine units deposited over a considerable interval (Wisconsin to Sangamon) of the late Pleistocene. Multiple levels are recognized along alluvial valleys and coast-parallel trends, and are grouped into two principal temporal phases. The allogroup is undifferentiated where local fluvial terrace remnants flank the more headward portions of stream bottoms.



INTERMEDIATE ALLOGROUP

Bentley alloformation—dissected alluvial deposits of early Pleistocene streams of primarily the Red River in central Louisiana. The unit is blanketed by yellow loam and incises Tertiary formations; it is incised by younger subunits of the Intermediate allogroup, and by the Prairie Allogroup and younger strata. Equivalent to the Natchez Formation of Mississippi.

TERTIARY SYSTEM

MIOCENE-OLIGOCENE

Catahoula Formation—texturally heterogeneous suite of generally poorly sorted sediments comprising primarily silt/siltstone to very fine quartzose sand/sandstone, with and without admixtures of clay. Overall or predominant grain size of sand/sandstone tends to average very fine to fine sand. Coarser grains may comprise quartz, chert, and/or mud clasts. Contains petrified wood and tuffaceous sandstone locally. Weathers locally to produce a thick (up to 2 meters) gray/tan loamy surface unit. Characteristics of the surface Catahoula accord generally with continental, fluvial-dominated deposition (Fisk, 1940; Hinds, 1999), with the large proportion of silt observed in places suggestive of the onset of transition to deltaic facies (McCulloh and Heinrich, 2002). Recent work indicates a palynological age of early late Miocene for the Catahoula in its type area in eastern north Louisiana (Wrenn et al., 2003), in contrast to the Oligocene age suggested by subsurface-to-surface correlation in the Texas Gulf Coast (Galloway, 1977, Galloway et al., 1982).

Open Water, Inundated Area, Wetland

Contact—includes inferred contacts.

Streams

Topographic Contours

References:

Andersen, H. V., 1960, Geology of Sabine Parish: Louisiana Department of Conservation, Louisiana Geological Survey, Geological bulletin no. 34, 164 p. plus plates (includes one 1:62,500-scale geologic map).

Andersen, H. V., 1993, Geology of Natchitoches Parish: Louisiana Geological Survey, Geological bulletin no. 44, 227 p. plus plates (includes one 1:62,500-scale geologic map).

Fisk, H. N., 1940, Geology of Avoyelles and Rapides parishes: Louisiana Department of Conservation, Louisiana Geological Survey, Geological bulletin no. 18, 240 p. plus plates (includes two 1:62,500-scale geologic maps).

Galloway, W. E., 1977, Catahoula Formation of the Texas coastal plain: depositional systems, composition, structural development, ground-water flow history, and uranium distribution: The University of Texas at Austin, Bureau of Economic Geology, Report of investigations no. 87, 59 p.

Galloway, W. E., D. K. Hobday, and K. Magara, 1982, Frio Formation of the Texas Gulf coastal plain: depositional systems, structural framework, and hydrocarbon distribution: American Association of Petroleum Geologists Bulletin, v. 66, no. 6, p. 649–688.

Hinds, D. J., 1999, Neogene stratigraphy and depositional environments of the Fort Polk and Slagle areas of western Louisiana: Louisiana Geological Survey, Report of investigations 99-01, 60 p. plus appendix.

McCulloh, R. P., and P. V. Heinrich, 2002, Geology of the Fort Polk region, Sabine, Natchitoches, and Vernon Parishes, Louisiana: Louisiana Geological

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Roads...

Wetlands.

...U.S. Census Bureau, 2017

..FWS National Wetlands Inventory 2021

Survey, Report of investigations 02–01, 82 p. plus plates and appendices (includes ten 1:24,000-scale geologic maps on one compact disc).

Rittenour, T. M., M. D. Blum, and R. J. Goble, 2007, Fluvial evolution of the lower Mississippi River valley during the last 100 k.y. glacial cycle; response to glaciation and sea-level change: Geological Society of America Bulletin, v. 119, no. 5–6, p. 586–608.

Rittenour, T. M., R. J. Goble, and M. D. Blum, 2005, Development of an OSL chronology for Late Pleistocene channel belts in the lower Mississippi valley, USA: Quaternary Science Reviews, v. 24, p. 2539–2554.

Rukas, J. M., and D. D. Gooch, 1939, Exposures of Vicksburg Oligocene fauna in western Louisiana: American Association of Petroleum Geologists Bulletin, v. 23, р. 246–253.

Wrenn, J. H., W. C. Elsik, and R. P. McCulloh, 2003, Palynologic age determination of the Catahoula Formation, Big Creek, Sicily Island, Louisiana: Gulf Coast Association of Geological Societies Transactions, v. 53, p. 865–875.

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Geologic Map of the Harrisonburg 7.5 minute quadrangle Catahoula Parish, Louisiana