

# Delta Geography

## What is the Delta?

The word "delta" in the region of the Mississippi River has come to represent many different ideas. According to the Lower Mississippi Delta Region Initiatives it includes a total of 308 counties and parishes in Illinois, Kentucky, Missouri, and Tennessee as well as the entire states of Arkansas, Louisiana, and Mississippi. In natural resource terms, the Mississippi Delta is the alluvial valley stretching from southern Illinois to central Louisiana at the junction of the Red, Atchafalaya, and Mississippi Rivers. Geologically, this was a deep valley eroded by the Mississippi during the Pleistocene Era when the sea level was 200 feet below its present stand. After the Ice Age, as the sea level rose, the river filled this valley with alluvium. Therefore, at the time of settlement, the Delta was an area of alluvial soils occupying a valley between higher terraces to the east and the west. The soils were subject to the annual overflow of the Mississippi River and its many tributaries. Another common usage of "delta" refers to the "recent delta"-that area of new land built by alluvium after the valley delta was filled. The river occupied seven different deltas (deltaic lobes) and more than 30 main channels in the process of building the "recent delta," all in south-central and southeast Louisiana. The most recent of the deltaic lobes is also referred to as the "delta" or sometimes the "modern" or "bird's foot" delta and is the area below New Orleans at the present mouth of the river where the channel forks into the various passes. The Lower Mississippi Delta is a vast and vital part of the American landscape. The dynamic character of the Delta's ever-changing natural processes are found in a variety of fascinating events-the New Madrid earthquakes of 1811-1812, the devastating flood of 1927 flood, and the geologic curiosity of Crowley's Ridge.

## How was the Delta Formed?

About 18,000 years ago a continental glacier covered North America. Although no glacier reached the lower Mississippi Delta region its influences have forged and transformed the surrounding lands. As the glaciers melted and reformed, the Mississippi and its tributaries carved valleys and created flood plains across the region. The flood plains and river valleys were further altered by changes in sea level over time. These changes created the terraces that mark the region today. High water flow combined with sediment loads of the glacial melt waters created a braided stream pattern along the Mississippi, Ohio, and other streams. As the volume of water discharged into the Mississippi Valley dropped, the Mississippi River flow evolved into its existing meandering pattern. The resulting sediment in the form of loess deposits (wind-transported deposits) and fluvial deposits (water-transported deposits) that were transported from north and west of the region were re-deposited within the Delta in layers tens of meters thick. The Delta's surface topography is a result of these deposits from the glaciers. The land forms created by a meandering river are called meander belts. This type of river loops back and forth across a flood plain in an ever-changing pattern as the stream flows to the sea. Meander belts are a

conglomeration of several land forms, including natural levees, oxbow lakes, tributaries, abandoned channels, point bars, back swamps, crevasse splays, chute cutoffs, and others (Saucier 1994). The meandering of the Mississippi, Red, Yazoo, Arkansas, Black and other study area rivers is constantly changing the course and topography of the regions, rivers, and their associated land forms. These features include the Ouachita Mountains and Crowley's Ridge in Arkansas, the Ozark Plateau in Missouri and Arkansas, the Petrified Forest in Mississippi, and other basins, plateaus, and topographical components.

### Six Natural Regions of Arkansas

Although Arkansas is most easily divided into two distinct geographical regions, the northwestern uplands and the southeastern lowlands, this description does not accurately portray the state's geographical complexity. There are actually six geographic sub-regions, three in both the uplands and the lowlands. The northwestern uplands are made up of three distinctive sub-regions: The Ozark Mountains, the Arkansas River Valley, and the Ouachita Mountains. The southeastern lowlands are comprised of the Gulf Coastal Plain, the Mississippi Alluvial Plain (the Delta), and Crowley's Ridge.

- The Ozark region of Arkansas is located in the extreme northern and western portions of the state. This area is marked by flat-topped mountains, or plateaus, which have been eroded over millions of years.
- The Arkansas River Valley is the area carved by the river long ago. This 40-mile wide trough divides the Ozark and Ouachita Mountains. Most of Arkansas's larger cities can be found in the river valley-Fort Smith, Little Rock, and several others.
- The Ouachita Mountains lie south of the river valley. These mountains run east to west and are largely covered in pine trees. The soil here is even worse than that of the Ozarks. There are many unusual features here including Hot Springs and the diamond crater at Murfreesboro.
- The southern part of Arkansas is part of the Gulf Coastal Plain. This area was once covered by the Gulf of Mexico and emerged from the sea 50 million to 100 million years ago. Today there is much agriculture and timber in this area, as well as oil and natural gas deposits.
- The Delta, or Mississippi Alluvial Plain, covers the eastern portion of Arkansas. Here the Mississippi and numerous other rivers have deposited rich soils over millions of years. This area has swamps, prairies, and rich farmland where the soil is very deep. Today this region is the primary agricultural part of Arkansas.
- Crowley's Ridge divides the eastern part of Arkansas. The ridge is composed of loess (windblown soil) and runs for 150 miles north from Helena. It varies in height from 250 to 500 feet above sea level. Crowley's ridge was originally an island between the Mississippi and Ohio rivers. When these rivers shifted their courses millions of years ago, Crowley's ridge was left behind as a long, low hilly formation. Most of the major cities of the Arkansas Delta can be found on or near Crowley's Ridge.

Because of the diversity of the Arkansas landscape, the state has long been fragmented, or divided. For instance, the hill people of the Ozarks and Ouachitas are much different than the farmers of the Delta. The state is hard to define, and in large part this helps explain the image problems Arkansas has long suffered. By studying the landscape and geography of Arkansas, we can make much progress toward an understanding of the state, its people, and its rich history.

## The Flood of 1927

Life in the Delta is continuously jeopardized by the Mississippi River and its natural tendency to flood. The explorers accompanying Hernando De Soto in 1543 were the first Europeans to witness the flooding of the Mississippi River. For the first permanent European settlers along the Mississippi River, the most feared word was "flood."

Historical records show that great floods occurred frequently on the banks of the Mississippi-nine great floods were recorded between 1782 and 1850.

The year 2002 marked the 75th anniversary of the most devastating flood in history along the Mississippi River. The 1927 flood occurred when the Mississippi River broke through levees in seven states (Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee) forcing over 42 major crevasses and inundating an area of approximately 26,000 square miles.

The nation's most destructive flood began with heavy rains in the summer of 1926 and continued throughout the spring of 1927. Three separate flood waves occurred on the lower Mississippi in 1927-in January, February and April, increasing in magnitude each time. Headlines from the Helena World reported: Broken Levee Floods 20,000 Acres of Land (Jan. 31), One Hundred Thousand Acres Flooded Near Cotton Plant (Feb. 1), and Weather Bureau Reports Greatest Flood Recorded (Apr. 15).

In February, the White and Little Red rivers broke and flooded more than 100,000 acres with ten to fifteen feet of water in Arkansas and left more than 5,000 people homeless. By April 9, more than one million acres of land were covered by flood waters and the rain continued to fall.

In the spring of 1927, the U.S. Army Corps of Engineers assured the public that the levees would hold. However, the levees failed. There were numerous breaks on the levees but the greatest single crevasse ever to occur on the Mississippi River was at Mounds Landing. It flooded an area 50 miles wide and 100 miles long with up to 20 feet of water. It put water over the tops of homes 75 miles away from the original break.

By July 1, the waters finally began to recede but 1.5 million acres of land was still under water.

The disaster left behind more than 500 people dead, over 700,000 people displaced from their homes, buildings and crops destroyed, and industries and transportation paralyzed. The Red Cross supervised 154 relief camps that sheltered and fed over 325,000 refugees.

Ultimately, the Flood of 1927 entered folklore and inspired writers such as William Faulkner and Richard Wright and songwriters such as Bessie Smith, Vernon Dalhart, Sippi Wallace, Ernest Stoneman, and "Blind" Lemon Jefferson.