

20 Cool Facts about the New Madrid Seismic Zone

Commemorating the Bicentennial of the New Madrid Earthquake Sequence
December 1811–February 1812

General Information Product 134

1 First Mainshock Earthquake

The first in a series of major earthquakes occurred on December 16, 1811, at about 2:15 a.m. near present-day Blytheville, Arkansas. Estimated at magnitude (M) 7.7,¹ this event awakened people across much of what is now the eastern United States, up to about 900 miles away, including President James Madison in Washington, D.C. There were several large aftershocks that day, including the largest “Dawn” aftershock at about 7:15 a.m., estimated at M6.8–7.0.

2 First steamboat voyage interrupted

The maiden voyage of the first steamboat on the Mississippi River, the *New Orleans*, began in September 1811 on the Ohio River at Pittsburgh, Pennsylvania. It reached the Mississippi River the week before the December 16 earthquake. One morning the passengers woke to find that the island they had moored to the night before had disappeared because of liquefaction due to frequent earthquake shaking.²

3 Riverbanks caved, widespread flooding

According to reports of boat captains and others on the Mississippi River in December 1811, the earthquakes caused the river to fill with debris as the tree-covered river banks caved into the river. Other reports said the river flooded large tracks of land, created temporary waterfalls, and even ran backwards in some places. Today, similar bank failure, flooding, and river debris would affect bridge abutments, farm land and industries along the river, and barge traffic.

4 Second Mainshock Earthquake

The second of the three major earthquakes, estimated at M7.5, occurred on January 23, 1812, at about 9:15 a.m. Similar to the December 1811 earthquake, this event was also widely felt throughout the region. Damage occurred in an area of about 232,000 square miles.

5 Only 5,700 people lived in St. Louis in 1811

In 1811, the population of what is now the central United States was very sparse. Still considered to be the western frontier, there were only about 5,700 people in the St. Louis area at the time. Most historical reports (journals, letters, and newspapers) describing the earthquake shaking and its effects were written by people who were located east of the Mississippi River. Today, about 11–12 million people live in the St. Louis–Memphis region.

6 Landslides

The New Madrid earthquakes caused extensive landsliding along about 125 miles of the bluffs on the east side of the Mississippi River north of Memphis. A repeat of these earthquake-triggered landslides today would affect eastern access to the Mississippi River, pipelines, and transmission towers located in this area.

7 Third Mainshock Earthquake

The third and probably the most widely felt of the three major New Madrid earthquakes occurred on February 7, 1812, at about 3:00 a.m. There were several destructive shocks that day, the last and largest estimated at M7.7. As a result, the town of New Madrid, Missouri, was severely damaged.

8 Homemade seismograph records quakes in Cincinnati

Dr. Daniel Drake, a physician in Cincinnati, Ohio, kept a detailed account of the New Madrid earthquake sequence and cataloged thousands of earthquakes. He reportedly used a pendulum-type seismograph that “marked the direction of undulation from south-southwest to north-northeast.”³

