

Mississippi Delta earthquake: America's Haiti waiting to happen?

By Suzi Parker Correspondent / January 17, 2010

Scientists predict a Haiti-magnitude earthquake along the New Madrid fault during the next 50 years. The fault runs under the Mississippi Delta, one of the poorest parts of the US.

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The city of Memphis has grown into a densely populated metropolis since the series of massive earthquakes struck it last in 1811 and 1812. Scientists say a quake on the scale of that seen in Haiti should be expected in the region within the next 50 years.

Little Rock, Ark.

One of the strongest series of earthquakes ever to hit the United States happened not in Alaska or along California's San Andreas fault, but in southeast Missouri along the Mississippi River.

In 1811 and 1812, the New Madrid fault zone that zig zags through five states shook so violently that it shifted furniture in Washington, D.C., and rang church bells in Boston. The series of temblors changed the course of the Mississippi River near Memphis, and historical accounts claim the river even flowed backward briefly.

Geologists consider the New Madrid fault line a major seismic zone and predict that an earthquake roughly the magnitude of the Haiti earthquake (7.0 on the Richter scale) could occur in the area during the next 50 years.

That forecast is of particular concern because the New Madrid zone sits beneath one of the country's most economically distressed areas – the Delta. In many counties in the Mississippi Delta, the poverty level is triple the national average.

Moreover, the area is comparatively less prepared to deal with a huge earthquake than are other seismically active areas in the US, says Mark Ghilarducci, vice president of James Lee Witt Associates, a crisis and emergency management consulting company in Washington.

"There have not been enough resources applied for retrofitting that there could be," Mr. Ghilarducci says. "I would like to see far more retrofit programs, strengthening of buildings, especially masonry buildings, tying down bridges. That builds resiliency in a community."

Efforts to prepare

Neither the federal government nor local governments are unaware of the threat.

Numerous interstate task forces and coalitions have organized over the last decade to prepare for a catastrophic earthquake. Education programs focused on survival kits and family disaster planning occur yearly in states. Yet, experts say, few families have kits in their homes.

Last November, the Obama administration's Long Term Disaster Recovery Working Group held five stakeholder meetings around the country, including Memphis. They solicited input on how "to improve long-term disaster recovery with a particular focus on catastrophic disasters."

The meetings were co-chaired by Homeland Security Secretary Janet Napolitano and Housing and Urban Development Secretary Shaun Donovan.

The New Madrid fault zone crosses five state lines and the Mississippi River in at least three places. It extends from northeast Arkansas through southeast Missouri and into western Tennessee, western Kentucky, and southern Illinois.

In the 1800s, few people lived in the region. Today, it is densely populated and includes Memphis and St. Louis.

"All the faults are active," says Haydar Al-Shukri, director of Arkansas Earthquake Center. "We would see an earthquake 10 times larger than the Haitian earthquake or even those in California because of the amount of distance the seismic waves of the earthquake would travel."

Delta rife with poverty

Even with government efforts at preparation, much remains to be done, says Ghilarducci, the emergency management consultant.

In many areas, people still live in shanties. Healthcare is sparse. Even clean water is scarce in some places. Often, public and private buildings, are decades-old and fragile. They have yet to be retrofitted or strengthened. Hundreds of towns could see severe structural damage, and large segments of the population displaced, Dr. Al-Shukri says.

"You still have a lot of places with cinderblock structures," he adds. "That is the worst kind of structure you can build in a place with earthquakes. These concrete blocks are very stiff, and they do not have flexibility, so they can't yield to seismic vibrations."

The challenges are particularly daunting in rural areas. Given that federal dollars most often target metropolitan areas, people could be cut off from supplies for days. To help mitigate this threat, Memphis Light, Gas & Water was given a grant of \$2.6 million to reduce the risk to its electrical grid from earthquakes.

"Disasters aren't entirely a government issue," Ghilarducci says. "If people live further out, they need to have something to be self-sufficient for a couple of days until help can reach them."

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