

New California quakes stir fears of ‘the Big One,’ which is decades overdue



Significant seismic activity this month in Southern California has renewed fears of “the Big One.” File Photo by 12019/Pixabay/UPI

July 23 (UPI) — Dr. Lucy Jones is certain “the Big One” — the devastating, long-predicted, long overdue earthquake in Southern California along one of the United States’ most dangerous fault lines — is on its way.

For decades, and centuries, the San Andreas fault has rumbled and shifted and shaken the Golden State relatively often and without warning. Two sizable quakes near Los Angeles this month has reignited some fear they may have awakened a sleepy San Andreas, which hasn’t produced a significant human-toll quake in 25 years. The fault line runs up the entire length of California, near the coastline.

Experts almost universally agree the fault will rock Greater Los Angeles at some point in the foreseeable future — but when? The Uniform California Earthquake Rupture Forecast projects a major quake along the San Andreas by 2045.

“I’m certain,” Jones, a research associate at the Seismologist Laboratory at the California Institute of Technology, said on Twitter last week, “the probability of a big San Andreas event is 100 percent if you give me enough time. In other words, plate tectonics isn’t stopping.”

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A time frame?

“It’s possible the big one is still 100 years away.”

Or it’s a year, or a month, or a week away. That’s the thing with seismology — it’s as inexact a science as inexact gets.

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It didn’t feel like that for those in the Mojave Desert this month, where a 6.4-magnitude quake struck July 4 and a major 7.1-magnitude shaker hit the very next day. They were two powerful quakes to be sure, but not close enough to populated areas to cause the kind of harm inflicted by the Northridge earthquake in 1994 — the last major temblor to hit the seismically active region.

While the back-to-back quakes led some to sleep outside for at least a night, experts like Jason Ballman of the Southern California Earthquake Center said it was business as usual.

“The good news is nothing was unusual about this earthquake sequence,” he said. “I know after big earthquakes, people want to feel there was something special, unique about their experience because it makes them feel that what they experienced was something special.”

While the recent earthquakes happened in the southern portion of the state — the second was felt as far away as Las Vegas — geophysicist John Bellini of the United States Geological Society’s National Earthquake Center said it actually has no bearing on the San Andreas fault because it occurred along the little-known Eastern California Shear Zone, a part of a geological trough called Walker Lane.

“It was about 100 miles away from the San Andreas fault,” he said. “There was no

direct connection between the most recent earthquakes and the San Andreas fault. Other than having a foreshock, there was nothing else common about it. In fact, it's not totally uncommon to have a foreshock by any means."

Although the quakes didn't affect the San Andreas, to say it left absolutely no influence on the susceptible region would be false — particularly because most scientists agree a major quake on the fault is about 160 years overdue. Californians, Bellini said, were fortunate this month's epicenters were closer to the desert than a large urban center like Los Angeles or San Francisco.

"First, it happened in a smaller residential area that didn't have a lot of buildings," he noted. "In a larger city where you have a great range in buildings and their ages, you would have probably had a lot more damage.

"It's structures that result in human injuries and casualties during an earthquake. If you're in the middle of the field during an earthquake, you'll feel the shaking, but nothing's going to fall on you."

What the quakes did show, Ballman said, was that keeping structures compliant with California's strict building code makes a significant difference.

"I know it's not sexy [to say] stronger building codes worked," Ballmann said. "California has spent years building to stronger codes and that proved critical. We can do that elsewhere. Yes, it's more costly upfront but even older buildings can be retrofitted."

So, the answer to the question — did the quakes wake a sleeping giant? As best as these experts can tell, not really.

"There was nothing in the earthquakes that would predict something else is coming," Bellini said. "You just can't predict earthquakes like that. We didn't know the 6.4 earthquake was a foreshock until the second earthquake happens because it's impossible to tell until it happens."

Ballmann said one thing of note to take from this month's activity is Californians should always be aware of potential earthquakes and be prepared if one occurs.

"One day the Eastern California Shear Zone will potentially overtake San Andreas," he said. "One day could be a million years from now. We fared well this time around."

Most seismologists have said the quakes this month have elevated danger of a new quake by between zero and 10 percent.

Jones said one potential pattern to watch for is continued seismic movement over a period of years, as large quakes are often preceded by this type of period. And right now, the state is actually experiencing “an extremely quiet time.”

She pointed out, however, there’s a 2 percent chance each year “the Big One” will strike — or, the odds are 1 in 20,000. By contrast, experts say, you have a 1-in-7,000 chance of getting into a car accident.

“I still wear my seat belt every day,” Jones said.

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