

‘It’s only a question of time’: California is overdue for a massive earthquake

San Francisco instantly became a hellscape of rubble and ruin 112 years ago today, thanks to a magnitude-7.9 earthquake and subsequent fire that killed thousands of people.

Seismologists have said California is due — and perhaps overdue — for the “big one,” another massive earthquake that would cause significant damage, but just when such a quake would strike is unpredictable.

“There is a 99.9% chance that there will be a damaging quake (magnitude greater than or equal to 6.7) somewhere in California in the next 30 years,” said Peggy Hellweg, a seismologist at the University of California, Berkeley. “We don’t have any idea exactly where and when such a quake can happen.”

John Vidale of the Southern California Earthquake Center, said California’s fears are legitimate.

A “big one” quake of a magnitude-8.0 near the San Andreas Fault would break several hundred miles along the faultline. Even more crippling, would be a smaller magnitude-7.0 placed in the heart of Los Angeles, he said.

“We have no real due date,” Vidale said.

Jen Andrews, a seismologist at the Caltech Seismo Lab, said when the infamous San Andreas fault is broken up into three sections — top, central and lower — it’s clear the section that’s gone the longest amount of time without a big quake is the southern portion.

In fact, the lower section hasn’t seen a large event for about 300 years.

“They don’t happen like clockwork, nor do they happen with the same frequency on different sections of the fault,” Andrews said. “However, the average time between quakes tends to be on the order of 100 to a few hundred years, and in several places it has been about that interval since the last large quake.”



The 1906 San Francisco earthquake left the city in ruins. (Photo: Mark Klett)

That's why seismologists talk about the southern part of the state being due, or even overdue, for another big earthquake, she said.

"It's reasonable for California to be concerned about earthquake hazard and the 'big one' as it's only a question of time. Earthquakes are unpredictable though, so the when and where are very difficult to say and we can only talk in terms of 'likelihood.'"

Andrews concluded: "Anniversaries of big events, as well as smaller felt earthquakes, are great reminders that we should take measures to be prepared for the next one."

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