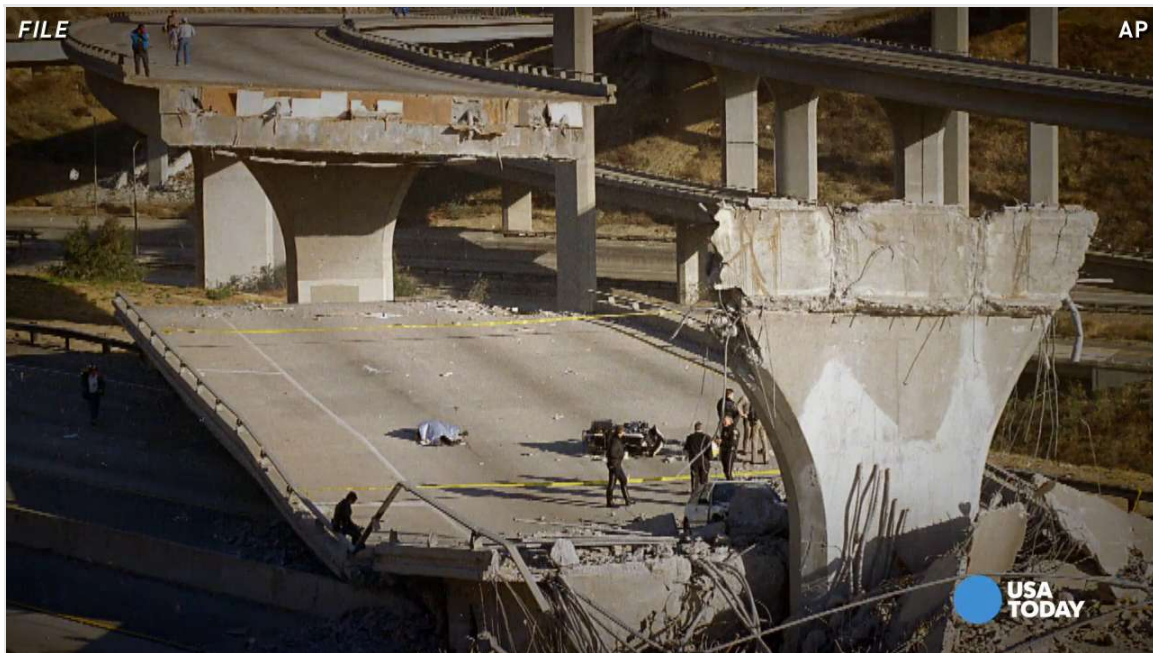


The Big One more likely, earthquake forecast indicates



The United States Geological Survey increased the probability for a 8.0 magnitude earthquake to hit California within our lifetimes. VPC

PALM SPRINGS, Calif. — Scientists have come up with a new forecast estimating the chances of earthquakes in California, and they say the **probability of a strong magnitude-8 quake has grown** since the last assessment seven years ago.

Researchers with the U.S. Geological Survey and other organizations said in a study released this week the estimated risk of a magnitude-8 or larger earthquake in the next 30 years has increased to 7%, up from 4.7% in the previous assessment in 2008.

Meanwhile, they said they now expect moderate-sized earthquakes of magnitudes from 6.5 to 7.5 to be somewhat less frequent than they had previously forecast. Earthquakes of magnitude 6.7 or larger — the size of the 1994 Northridge quake — are projected to strike once every 6.3 years, they said, down from once every 4.8 years.

Ned Field, a USGS geophysicist and lead author of the study, said the new forecast was created using a model that incorporates the latest research and seismological data.

"What the model really does provide is a significant refinement in our estimates of where and how often earthquakes will occur throughout the state," Field said in an interview on Tuesday.



A section of San Fernando Boulevard in Sylmar, Calif., had a transversing thrust crack in 1994, after a major earthquake rocked Southern California. (Photo: William Wilson Lewis, AP)

"As we filled in the fault inventory over the years, we've just realized that we're dealing not with separate, isolated faults but a vast, interconnected system of faults," Field said. "The fact that we're now dealing with an interconnected fault system effectively has allowed larger earthquakes to occur in the model, and that has increased the rate of magnitude-8 and above events by about 20%."

The estimates are laid out in the third version of the Uniform California Earthquake Rupture Forecast, which enables people to view the projected chances of quakes along different faults using Google Earth.

The findings, Field said, will help update building codes and earthquake insurance policies, and will affect how engineers design skyscrapers, hospitals, bridges, schools and water infrastructure.

"This will help all those people working to make society resilient," Field said. "It will help them do a better job of that."

David Oglesby, a seismologist at UC Riverside who wasn't involved in preparing the forecast, said the study will also contribute to emergency preparedness.

"It allows us to focus our efforts in places that can do the most good," Oglesby said. "It's a snapshot of our current understanding of seismic hazard in California based on the best available science that we can incorporate into such a model."

Tom Jordan, director of the Southern California Earthquake Center and a co-author of the study, said in a statement that while seismic activity in California has been relatively low over the past century, "we know that tectonic forces are continually tightening the springs of the San Andreas fault system, making big quakes inevitable."

Scientists have long warned that the southern portion of the San Andreas Fault is overdue for a strong earthquake — in part because the last time a big quake hit the area was around 1690.

"The southern San Andreas, going through the Coachella Valley and up through the Mojave, is the most likely place in the state to host a large earthquake," Field said.

In the area of Coachella, for instance, the model predicts the likelihood of magnitude-7.0 or larger quake

on the southern San Andreas Fault to be 21% during the next 30 years. The chances of a magnitude-7.5 or larger quake are estimated at 11%.

"Plate tectonic stresses have really built up beyond where they do on average," Field said. "And so we think that those areas are particularly high in terms of the likelihood of having a large earthquake."



Dr. Lucy Jones, senior advisor for risk reduction for the U.S. Geological Survey, describes how an early warning system would provide advance warning of an earthquake, Jan. 28, 2014. (Photo: Reed Saxon, AP)