

Not My Fault: Fake news, fear won't save us from quakes

Lori Dengler/For the Times-Standard
Posted: Sep. 28, 2017

A friend sent a worried message – Lori, what does this mean? The link screamed: MAJOR EARTHQUAKE WARNING: US West Coast Earthquake Warning as Cascadia Subduction Zone Surges. It nothing new - first surfacing in January 2016. It was based on an erroneous interpretation of data that reputable scientists and organizations quickly explained and dismissed. But like the hydra, every time you chop off a head, new ones sprout in unexpected places.

Fake news and rumors find particularly fruitful soil when earthquakes are in the news. And earthquakes have made a big splash this September. Herein lies a dilemma. When earthquakes aren't in the news, it's difficult to motivate people to prepare because they have little interest. And when they are in the news, especially the salacious or fake – it sells newspapers and gets attention, but generates fear. Frightened people are unlikely to take actions to prepare. Fear is uncomfortable and something to avoid. If I equate earthquake with fear, I am going to try my best to push it out of my mind.

The spurt of North Coast earthquake activity last Friday heightened concerns and made people more vulnerable to fake stories. Last Friday was a busy day. It began with a magnitude 3.1 at 9:14 am local time about 150 miles west of Cape Mendocino, followed by a M 3 40 minutes later (50 miles W of the Cape), a 5.7 at 12:50 pm (128 miles W of the Cape), a magnitude 3.1 at 1:33 pm (140 miles W of the Cape), a 2.9 at 2:53 pm (137 miles west of the cape), a 3.9 at 4:17 pm (3 miles NNW of the Cape) and a mag 2, 11 minutes later in about the same location as the 3.9.

The good news is that these earthquakes were too small and/or too far away to be felt by many and none caused damage. What do they mean and are they a likely precursor of future activity?

These earthquakes were on or near the Mendocino fault, a 170 mile-long E-W cleft that extends due west from Cape Mendocino. It exhibits horizontal or strike-slip motion similar to the San Andreas and is one of the most active faults in the contiguous 48 states, producing about

40 earthquakes of magnitude 3 or larger each year. This year has been a slightly below average year so far with only twelve M 3 or larger earthquakes. Put in this perspective, last Friday was not all that unusual and there is nothing about the sequence that forebodes a larger quake soon.

The disclaimer – we are always at risk of a strong earthquake, either on the Mendocino fault or on a fault closer to populated areas. So while you are thinking earthquakes, this is the perfect time to remind you that there are things individuals, communities and societies can do to reduce earthquake impacts and protect you and your loved ones.

First step to preparedness is identifying what is the biggest problem with earthquakes. Earthquakes can impact us in a number of ways – landslides, fires, tsunamis. But the number one cause of death and injuries is the collapse of human-built structures. This story was tragically demonstrated by the two recent strong earthquakes in Mexico. Seven Mexican states in addition to Mexico City suffered significant damage and casualties and the death toll has topped 400.

As I write, international teams of engineers and geoscientists are studying the performance of structures in these earthquakes and it is too early for a definitive assessment of what went wrong. But there are several preliminary conclusions. First, the overwhelming majority of buildings in the urban areas of Mexico City and Puebla performed very well. The media has concentrated on the exceptions and don't show photos of the vast areas where structures survived with little or no damage.

Of the damaged buildings, one category was no surprise – the unreinforced masonry and adobe structures that have little resistance to shaking. Two older churches collapsed in Puebla, unfortunately while masses were in progress. A second category of damaged buildings is more perplexing – structures built that supposedly met current building standards. One particularly tragic example was the private Enrique Rébsamen school. Reportedly inspected only three months ago, one wing collapsed killing 19 students and five teachers. In Mexico, enforcement of building codes outsourced to private companies, a practice that is being scrutinized.

We know weak buildings kill and injure in earthquakes. They failed in Mexico and will fail when the next strong earthquake strikes California. Fortunately we don't have many unreinforced brick buildings on the North Coast.

But we have some. Note the Earthquake Warning signs as you enter some of our most attractive historic buildings in Old Town. Posting a warning sign may satisfy current legal requirements but won't keep the building from collapsing. We also know that the best engineering design and building codes in the world are worthless without enforcement.

Without enforcement, we end up with nothing better than a house of cards.

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