

# Not more quakes, just more people in quake zones

Seth Borenstein, Associated Press, 3-8-10

First the ground shook in Haiti, then Chile and now Turkey. The earthquakes keep coming hard and fast this year, causing people to wonder if something sinister is happening underfoot.

It's not.

While it may seem as if there are more earthquakes occurring, there really aren't. The problem is what's happening above ground, not underground, experts say.

More people are moving into megacities that happen to be built on fault lines, and they're rapidly putting up substandard buildings that can't withstand earthquakes, scientists say.

And around-the-clock news coverage and better seismic monitoring make it seem as if earthquakes are ever-present.

"I can definitely tell you that the world is not coming to an end," said Bob Holdsworth, an expert in tectonics at Durham University in northern England, referring to the number of quakes.

A 7.0 magnitude quake last month killed more than 230,000 people in Haiti. Less than two weeks ago, an 8.8 magnitude quake - the fifth-strongest since 1900 - killed more than 900 people in Chile. And on Monday, a strong pre-dawn 6.0 magnitude quake struck rural eastern Turkey, killing at least 51 people.

On average, there are 134 earthquakes a year that have a magnitude between a 6.0 and 6.9, according to the U.S. Geological Survey. This year is off to a fast start with 40 so far - more than in most years for that time period.

But that's because the 8.8 quake in Chile generated a large number of strong aftershocks, and so many occurring this early in the year skews the picture, said Paul Earle, a seismologist at the U.S. Geological Survey.

Also, it's not the number of quakes, but their devastating impacts that gain attention with the death tolls largely due to construction standards and crowding, Earle said.

"The standard mantra is earthquakes don't kill people, buildings do," he said.

There have been more deaths over the past decade from earthquakes, said University of Colorado geologist Roger Bilham, who just returned from Haiti. In an opinion column last month in the journal *Nature*, Bilham called for better construction standards in the world's megacities. Last year his study of earthquake deaths, population, quake size and other factors produced disturbing results. And that was before Haiti, Chile and Turkey.

"We found four times as many deaths in the last 10 years than in the previous 10 years," Bilham told *The*

*Associated Press* Monday. "That's definitely up and scary."

Other experts said they too have noticed a general increase in earthquake deaths. The World Health Organization tallied than 453,000 deaths from earthquakes from 2000 to 2009, up markedly from the previous two decades. In the 1970s, however, a massive quake in China killed about 440,000 people.

But those numbers fluctuate every year. Statisticians say the hit-or-miss nature of earthquake fatalities makes it hard to see a trend in deaths.

A quick analysis by two statistics experts found no statistically significant upward trend since the 1970s because of the variability - despite the earthquake experts' perceptions that deaths have been rising, at least since the 1980s.

The Haiti quake likely set a modern record for deaths per magnitude of earthquake "solely as a function of too many people crammed into a city that wasn't meant to have that many people and have an earthquake," said University of Miami geologist Tim Dixon.

Disaster experts say they've seen more deaths especially from quakes that wouldn't have been as bad decades ago. They point to two in Turkey and India - a 1999 earthquake in Izmit that killed 18,000 and the 2001 disaster that killed 20,000 in Bhuj.

"Look at some of the big ones recently," said Debarati Guha-Sapir, director of the WHO's disaster epidemiology research center. "Had the Izmit or Bhuj quakes happened 30 years ago, the events would have been relatively insignificant as the population of these cities were a third of what it was when it did happen. Increasing population density makes a small event into a big one."

Disaster and earthquake experts say the problem will only worsen. Of the 130 cities worldwide with more than 1 million population, more than half are on fault lines, making them more prone to earthquakes, Bilham said.

"I've calculated more than 400 million people at risk just from those," he said.

Developing nations, where the population is booming, also don't pay attention to earthquake preparedness, Bilham said. "If you have a problem feeding yourself, you're not really going to worry about earthquakes."

He said he when he went to Haiti after the January quake, he had hope that construction would be quake-proof because of the emphasis on it. Instead, people rebuilt their houses their old unsafe ways.

Another reason quakes seems worse is that we're paying attention more. The phenomenon of Haiti quickly followed by the 8.8 in Chile got everyone's attention.

But it won't last, said disaster researcher Dennis Mileti, a former seismic safety commissioner for the state of California.

"People are paying attention to the violent planet we've always lived in," Mileti said. "Come back in another six months if there has been no earthquakes, most people will have forgotten it again."