Scientists Keep Their Eyes and Ears on the Ring of Fire Earthquake Zone

David E. Hubler, EDM Digest, 1-5-17

While climatologists and environmentalists watch for signs of further global warming, volcanologists and other scientists are looking for seismic activity beneath the earth that could indicate the coming of a more immediate danger, a major U.S. earthquake.

Indeed, a new report forecasts that California could experience a 8.0 or greater magnitude earthquake during the next 30 years.

The new warning comes in a report by the Uniform California Earthquake Rupture Forecast (Version3) known as UCERF3. The study was the joint work of the U.S. Geological Survey, the Southern California Earthquake Center, the California Geological Survey and the California Earthquake Authority.

Forecast: California Likely to see at least 6.7 Magnitude Quake

San Francisco and Los Angeles fall into the areas designated as most likely to experience a magnitude 6.7 or larger within the next three decades. It would likely surpass the 6.7 magnitude quake that struck southern California in January 1994, which resulted in 57 deaths and damages estimated at more than $20 billion.

According to UCERF3, the odds of that 8.0 or greater magnitude quake occurring have increased from 4.7 percent to about 7 percent since the UCERF's last forecast in 2008.

"The new likelihoods are due to the inclusion of possible multi-fault ruptures, where earthquakes are no longer confined to separate, individual faults, but can occasionally rupture multiple faults simultaneously," UCERF3 lead author and USGS scientist Ned Field explained in a news release.

The Ring of Fire

The West Coast states, especially California, are especially prone to earthquakes because they are located on the Pacific Ring of Fire. The ring is a long chain of tectonically active structures with more than 450 active and dormant volcanoes. The 25,000-mile inverted U area runs up from Chile and the Americas, across the Aleutian Islands and down Asia's east coast past New Zealand to the northern coast of Antarctica.

It is one of the most geologically active areas on Earth and is the site of frequent earthquakes and powerful volcanic eruptions. On April 1, 2014, an 8.2 earthquake shook northern Chile and surrounding countries. Some 13,000 homes were damaged and utility services were interrupted for up to a week in some areas. More than 1 million people felt the ground shake. But loss of life was minimized due to Chilean authorities' quick response.

If it seems like earthquakes and erupting volcanoes are occurring more frequently these days, you're right. They are, says The Costa Rica News (TCRN). Between 1980 and 1989, there was an average of 108.5 earthquakes per year with a global magnitude of six (M6) or greater, TCRN reported. From 2000 to 2009 the yearly average of M6 or greater quakes rose to 160.9. That's a 38.9 percent increase of M6+ earthquakes in just three decades.

There has also been a growing number of earthquakes in the U.S. heartland. Since 2001, the average number of earthquakes occurring per year of magnitude 3 or greater increased significantly, culminating in a six-fold increase in 2011 over 20th century levels, the U.S. Geological Survey (USGS) reports.