

## San Andreas Fault in Santa Cruz Mountains -- large quakes more frequent than previously thought

## May 30 2012

Recent paleoseismic work has documented four surface-rupturing earthquakes that occurred across the Santa Cruz Mountains section of the San Andreas Fault (SAF) in the past 500 years. The research, conducted by the U.S. Geological Survey, with assistance from the California Geological Survey, suggests an average recurrence rate of 125 years, indicating the seismic hazard for the area may be significantly higher than currently recognized. The observations help fill a gap in data on the seismic activity of the SAF in northern California, particularly south of San Francisco.

Geologists Thomas Fumal and Tim Dawson conducted paleoseismic studies at Mill Canyon, near Watsonville, California. They documented evidence for four earthquakes, the most recent being the 1906 M 7.8 San Francisco event. They conclude that each of the three earthquakes prior to the 1906 quake was a large magnitude event that likely ruptured most, or all, of the Santa Cruz Mountains segment, producing similar physical deformation as the 1906 quake.

In addition to filling in a data gap about the SAF in this region, this research adds to the understanding of how the SAF behaves, in particular whether individual segments of the <u>fault system</u> can produce destructive earthquakes and how often. This study joins to a growing body of work that suggests the SAF produces a wider array of magnitudes than previously appreciated in the current <u>seismic hazard</u> models.



**More information:** "Timing of Large Earthquakes during the past 500 years along the Santa Cruz Mountains Segment of the San Andreas Fault at Mill Canyon, near Watsonville, California," published by *BSSA*, Vol. 102:3.

## Provided by Seismological Society of America

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