

Recent temblors could be the precursor of major quake

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SANTA CRUZ — Recent earthquakes centered in Carmel Valley could be precursors of a major quake along a section of the San Andreas Fault that last tore loose in 1857, unleashing a force equal to that of the 1906 San Francisco earthquake, a UCSC seismologist says.

Karen McNally, a seismologist known worldwide for her research in

RR EARTH QUAKE
earthquake prediction, says experts are "extremely watchful" after the Carmel Valley quakes and temblors last spring in the Coalinga area.

Late Thursday night, another aftershock in the King City and San Gregorio-Palo Colorado fault systems jolted Carmel Valley. Jan. 22, a temblor registering 5.25 on the Richter scale jolted Monterey residents in a quake which was felt as far away as Alaska. No major damage was reported.

McNally stresses that no one presently can predict when an earthquake will strike. But, she says, several factors lead her to believe the Carmel Valley temblors, in previously inactive faults, "an extremely interesting sequence of quakes."

In 1857, a major earthquake buckled and heaved through California, from a point between Coalinga and Carmel Valley along the San Andreas Fault south to San Bernardino.

The area was ranch country then,

and was sparsely populated. Although the quake's destructive power equaled that of the San Francisco quake, no major damage or loss of life was recorded, McNally says.

But a quake in the same area now could devastate the Los Angeles area. Federal, state and local agencies in Los Angeles are preparing for such a quake. Experts say a repeat performance is a virtual certainty. The question is, when?

McNally, who travels throughout

California, Mexico, Central and South America to study earthquakes, their behavior and the events surrounding them, says:

"In general, we are watchful for a repeat of the 1857 earthquake. Geologic studies show an average repeat time is on the order of 150 years, plus or minus 50 years. It may be a little longer on this northern part of the segment; it may break a little less frequently."

There is no history this century of

such strong quakes either in the Coalinga or the Carmel Valley areas, she says.

"Both sides of that rupture point are popping off in earthquakes now that we really haven't seen any precedent for."

In general, she says, "A lot of the major effort in seismology and geology is going into trying to understand what we might expect to see before

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the next major break along that fault.

"So when earthquakes like this happen, we are extremely watchful; that's about all I can say. But we are not predicting an earthquake."

She described a "major" earthquake as one with a magnitude of 7 or above on the Richter scale, developed by seismology pioneer Dr. Charles Richter. McNally worked with Richter at Cal Tech before she came to UCSC two years ago.

An increase of one on the open-ended scale indicates a 30 percent increase in seismic energy released. A magnitude-6 quake can cause considerable damage to buildings. A quake registering 7 is 30 times as powerful, she says, and one registering 8 is 900 times as powerful. The 1906 San Francisco quake has been estimated as having a magnitude of 8.3.

"In general, as far as we know, before major earthquakes there are quakes in the magnitudes of 5 and 6 that start to pick up near the end of the rupture zone, and around the edges of a future earthquake before it occurs. We know that happened before 1906.

"Another thing we know is just prior to the great 1857 earthquake, there was a magnitude 6.5 in the general area of Parkfield (halfway between Paso Robles and Coalinga).

"Our analyses at this time show the highest probability for an earthquake of say, magnitude 6 or 6.5, ... is in the Parkfield area. But whether that would trigger an 1857-size quake, the opinions have varied."

If these are foreshocks, she says, the activity could go on for many years before a major quake. Or, "it may also occur within hours."

If the Parkfield-to-San Bernardino section should break loose in a magnitude-8 quake, Santa Cruz could suffer some damage, McNally says. The 1857 quake destroyed the Santa Cruz Mission.

"(The) Coalinga (quake) was felt quite strongly here," she says, "and a magnitude-8 would be about a hundred times larger. But I would not expect a big disaster in Santa Cruz."

In Coalinga, where she was on the scene with a crew of students within hours after the quake to study the aftershocks, much of the destruction was to unreinforced brick buildings, she says. "Most of the construction here is wood, which performs quite well in earthquake."

How serious is the danger to Santa Cruz in such a quake?

Well, one indication is that McNally doesn't carry earthquake insurance on her house.

"I have a nice wooden house," she says. "I have fire insurance."