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NEWS

Friday, December 31, 2004

O.C.'s tsunami threat

Catalina fault system has the potential to produce a smaller-scale version of South Asia's disaster.

By GARY ROBBINS

The Orange County Register

Don't be fooled. Santa Catalina Island looks a bit like Shangri-la from the beaches of Orange County. But the island is part of a fault system that scientists say has the potential to produce a tsunami that is similar to, but smaller than, the one that killed more than 116,000 people this week in South Asia.

An 80-mile section of the Catalina fault system could generate a magnitude 7.6 earthquake that would raise and lower portions of the seafloor around the island, triggering a major tsunami, according to a study published in August in the science journal Earthquake Spectra.

Some of the tsunami's swift, surging waves could reach Dana Point and the Palos Verdes Peninsula in as little as 10 minutes, says Mark Legg, the Huntington Beach geophysicist who led the study on behalf of the Earthquake Engineering Research Institute, a nonprofit technical society in Oakland.

The tsunami's subsequent waves would curve inward, hitting beaches between those two points over the next 10 to 15 minutes, says Legg, who has examined Southern California's offshore faults in small research submarines.

Some of the most powerful waves would likely hit the Seal Beach area, a low-lying stretch of coast that has many old, wooden, oceanfront homes and narrow beaches, the report says.

"The tsunami in this scenario would surge like a rapidly rising tide," Legg says. "It would sweep up people, autos and boats. You couldn't outrun it or stand up against it. And the water would be black because it would be filled with debris and with muck stirred up from the seafloor. It could be catastrophic."

Legg, 54, collaborated with University of Southern California researchers Jose Borreo and Costas Synolakis on the study. They make up one of the few groups examining the potential for tsunamis originating on Southern California's patchwork of marine faults.

Their study did not attempt to estimate the death and destruction that might result from such a tsunami. Nor did the



IN-DEPTH LOOK: Mark Legg emerges from a minisubmarine after studying the Catalina fault.

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report predict when a tsunami of this scope might occur, saying only that such events happen every few hundred to few thousand years.

"We need to evaluate the risk of near-shore tsunamis more thoroughly," says Dick McCarthy, executive director of the California Seismic Safety Commission, which advises the governor and the Legislature on seismic issues. "The lesson of the (Asian) tsunami is that all coastal nations face some risk. We need to learn more about the risk and educate the public about how people should respond."

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