

**The State; Researchers Warn of Tsunami Danger; Offshore earthquakes could unleash the destructive waves, scientists say. They recommend a buoy warning system.:[HOME EDITION]**

*Kenneth Reich. Los Angeles Times. Los Angeles, Calif.: May 3, 2003. pg. B.6*

**Full Text** (519 words)

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Inspections over the last five years off the Southern California coast have shown faults and undersea landslides that in the past probably generated substantial seismic sea waves, often called tsunamis, a USC researcher said this week.

Jose Borrero said: "Our modeling predicts tsunami waves and flooding of up to five feet along the coast of Orange County, with surges of up to eight feet in the ports of Los Angeles and Long Beach."

The study also found that parts of San Diego County's coastline could be at risk.

Borrero, addressing a meeting of the Seismological Society of America in San Juan, Puerto Rico, on Thursday, suggested that installation of a system of buoys could give a 15-minute warning of the approach of a tsunami.

An offshore quake of at least magnitude 6.5, or a major undersea landslide, would probably be required to cause such waves, researchers found.

A tsunami results from a sudden displacement of large quantities of water that starts waves moving.

Borrero also warned that uncertainties in past earthquake data opened the possibility that a tsunami could reach as high as 30 feet, depending on conditions. Such an event could cost many lives.

However, while Southern California has had five or six very small, locally generated tsunamis since 1800, there has not been anything in that time nearly as big as the potential events Borrero described.

Lucy Jones, scientist in charge of the U.S. Geological Survey office in Pasadena, said Friday: "I put tsunamis well down my worry list" about prospective disasters in this area.

In the last 50 years, there has been damage on several occasions from tsunamis arriving from such distant sources as the Chilean earthquake of 1960 and the Alaskan earthquake of 1964.

The Alaskan quake was responsible for a surge of water that did \$575,000 in damage in Marina del Rey and the Port of Los Angeles. In Crescent City on California's north coast, 12 people died in that tsunami.

The National Oceanic and Atmospheric Administration has a Pacific tsunami warning system in effect that gives warnings hours in advance when local tsunamis may result from distant events.

However, Borrero said he and two other researchers, Costas Synolakis, a USC professor of civil engineering, and Mark Legg of the Legg Geophysical firm in Huntington Beach, are concerned that the Papua New Guinea tsunami of 1998, which killed more than 2,000 people there and was generated just offshore, may be a more pertinent example for the Southland.

Borrero identified the Catalina escarpment off the Pacific side of Santa Catalina Island as marking a fault that could produce a quake as large as magnitude 7.6 and generate a local tsunami that would come ashore quickly after a quake.

He also said he and his colleagues found that offshore topography could focus tsunami waves to make them larger and more dangerous.

Other potential tsunami sources he mentioned were the Palos Verdes fault running offshore between Newport Beach and Dana Point in Orange County and the San Mateo Thrust fault offshore of Camp Pendleton, San Onofre and Oceanside Harbor in San Diego County.

Credit: Times Staff Writer

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