



**Life & Times Transcript**

01/05/05

**Val Zavala**—Tonight on Life and Times –

... A look at the history of tsunamis and evidence that California has already experienced this terrible phenomenon more than once. ....

**Val**—The massive devastation from the tsunami in Asia has caused experts around the world to re-evaluate the potential for tsunamis. So could one happen here? Well, one expert says absolutely. We thought it would be a good time to open up the Life and Times Vault and revisit this story by Saul Gonzalez.

**Saul Gonzalez**—The Pacific Ocean. Its beauty and rhythms help define California life. On or near its shores, over twenty million Californians live, work and play. Yet the Pacific is also a spawning ground for one of nature's most destructive forces: tsunamis.

**Costas Synolakis**—If you think about it really as a mountain of water, as a huge hill that's moving inland.

**Saul Gonzalez**—Meet Professor Costas Synolakis. He is one of the world's foremost experts on tsunamis and director of USC's Tsunami Study Center.

**Costas Synolakis**—Nobody has ever really seen one. Nobody has seen how it is generated. It's almost like an unknown enemy. People have seen hurricanes, tornadoes, people can feel earthquakes, but tsunamis, usually we only find out what happens after a tsunami hits.

**Saul Gonzalez**—Unlike conventional wind-generated waves, a tsunami is a massive wave front caused when an earthquake, landslide or volcanic eruption violently jolts the ocean floor.

**Costas Synolakis**—The sea floor moves up or down because of an earthquake, which generates this giant wave that can propagate over tens of thousands of miles at speeds of a jet aircraft, so this is the part that's really fascinating. You have this huge wave that can move across the world's oceans as fast as a jetliner.

**Saul Gonzalez**—When they come ashore, tsunamis have been known to grow to heights of a hundred feet or more, bringing devastation and death when they come crashing down. Tsunamis were once thought of as phenomena that other places in the world had to worry about like Alaska or Japan, not Southern California. Then scientists started to ask themselves this question: do conditions exist here in local waters to create one of these monster waves?

**Costas Synolakis**—We used to think that Southern California was a fairly quiet area in terms of tsunamis, but after Papua, New Guinea did we realize that there is this landslide potential. Now even this beautiful area is a candidate for tsunami attack.

**Saul Gonzalez**—That attack might come because of what exists below the ocean waters of Southern California, a rugged landscape of steeply sloping ravines and valleys.

**Jose Borrero**—There are a lot of steep slopes with a lot of sediment on them and there is the potential for slope failures. These slope failures, if they're large enough, can produce waves.

**Saul Gonzalez**—Jose Borrero is a tsunami researcher with USC.

**Jose Borrero**—A tsunami that would be caused by a slope failure very close to us, we're talking in between San Pedro and Catalina.

**Saul Gonzalez**—A tsunami created so close to our coast would dramatically diminish warning times for people on the beach.

**Costas Synolakis**—If the tsunami takes place and happens ten miles offshore, it will take it less than ten minutes to come on land and there will be no time to issue a warning.

**Saul Gonzalez**—In order to understand the kind of punch a tsunami could give Southern California, Synolakis says to imagine the force of ten El Nino storms all rolled into one single wave. Responding to growing evidence that tsunamis are possible in local waters, the state of California's Office of Emergency Services has commissioned Professor Synolakis and his team to determine through computer modeling which sections of California's coastline are most in jeopardy if a tsunami wave forms. They will then draft inundation maps to determine where tsunami-related flooding could be heaviest. Using a map of the Southern California coast, Professor Synolakis showed Life and Times which neighborhoods might be threatened.

**Costas Synolakis**—For a fairly moderate tsunami, we're talking about the first, in this particular case, the first line of houses. For example, in Venice up to Ocean Avenue, going around Marina del Rey, the entire area around the canals is at risk, and then Playa del Rey. Everything basically that is low-lying and around the channel because tsunamis have a habit of going in and penetrating. They can use this as what we call the wave guide and they can go in and penetrate inland flooding of both sides of the channel.

**Saul Gonzalez**—It's an entryway to further inland?

**Costas Synolakis**—Oh, yes.

**Saul Gonzalez**—State authorities will use the tsunami inundation maps to help plan evacuation routes and determine where tsunami warning signs should be posted, signs that could start appearing on California's beaches within a year. Oregon already has such a system in place.

—"And you want to know about evacuation signs. You want to know about warning signals. You want to know where the evacuation routes are. You also want to know where your designated shelters are in your community and where high ground is."

**Saul Gonzalez**—Until such programs are in place here in California, Professor Synolakis offers this advice.

**Costas Synolakis**—If you ever have any suspicion of an unusual water motion, one has to move as far away from the water as possible.

**Saul Gonzalez**—It pays to remember that, when we're on the shores of the Pacific, we're standing at the edge of a vast and sometimes dangerous wilderness.

**Val**—Those warning signs on our beaches have not yet been posted and, as for an early warning system, well, we don't have one. But some Los Angeles City Council members are calling for a network of underwater microphones that would detect a tsunami before it hits land. Still, overall, emergency officials say that tsunamis are not a major threat in Los Angeles County. And that's our program. I'm Val Zavala. For everyone at Life and Times, thanks for watching. We'll see you next time.

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