

# **PREHISTORIC LANDSLIDES IN THE LANDSCAPE AND THE HAZARDS THEY PRESENT: LA CONCHITA, CALIFORNIA**

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Prehistoric landslides in the modern landscape, if reactivated, present hazards to our personal safety, infrastructure and homes. Examples in Southern California include the Bluebird Canyon, Portuguese Bend, and the Big Rock landslides. Some of these slides move with upper slower moving components and lower faster moving debris flows such as the winter of 2004-2005 slide. To this list of complex landslides, we add La Conchita landslide.

The 2005 landslide and debris flows, which killed 10 people and destroyed about 30 homes at the community of La Conchita was a reactivation of about one-half of the landslide mass that occurred in 1995. Examination of a 30m DEM suggests the 1995 and 2005 landslides are at the leading edge of a much larger slower moving landslide we call the La Conchita landslide complex. The small recent events at the community of La Conchita are only a small percent of the much larger slide area. The La Conchita landslide was initiated at least a few thousand years ago, but is younger than the 45 ky age of the marine terrace. The slide is delineated by an active, arcuate southwest facing 50 – 65 m high head scarp, bounded laterally by deeply incised drainages. Many smaller active slides are present in the slide mass and in deeply incised drainages. The 45 ky marine platform is vertically displaced approximately 50 - 60 m. The top ~50m of the ~200 m high steep slope above the community of La Conchita is composed of prehistoric slide debris, which overlies the 45ky surface. This slope is the seaward edge of an ancient landslide and also forms a Holocene sea cliff. The sea cliff has repeatedly failed from prehistoric and historic times to the present, producing slides, slumps, debris and mud flows including the 1995 and 2005 events at La Conchita.

The combination of, active faulting and folding, rapid tectonic uplift, very weak rocks, steep topography, and presence of springs render the La Conchita area particularly vulnerable to landslides. It is not a question of if the next slide will occur, but when the next slide will impact the community.