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Recent Landslides in La Conchita, California Belong to a Much Larger Prehistoric Slide, Report Geologists

(Salt Lake City, Utah) -- The deadly landslide that killed 10 people and destroyed approximately 30 homes in La Conchita, California last January is but a tiny part of a much larger slide, called the Rincon Mountain slide, discovered by Larry D. Gurrola, geologist and graduate student at the University of California, Santa Barbara. The slide started many thousands of years ago and will continue generating slides in the future, reported Gurrola at the national meeting of the Geological Society of America today in Salt Lake City.

Prehistoric slides present at Rincon Mountain cover an area of about 1,300 acres with a minimum volume of about 600 million cubic yards, said Edward A. Keller, professor of earth science at UC Santa Barbara. Keller analyzed the landslide complex with Gurrola and Tim Tierney, UCSB research scientist. Geological consultant Ted Powers also contributed. The La Conchita landslides that occurred in 1995 and 2005 form only a small percent of a much larger landslide complex, according to the geologists. These recent landslides spilled over U.S. Highway 101 in the Ventura County community that is located 25 miles south of Santa Barbara.

"The slope that failed in 1995 and 2005 is a holocene paleosea cliff and is near the seaward edge of an ancient landslide that has produced prehistoric and historic slides, slumps, debris and mud flows," said Gurrola. "The question is not if but when

the next landslide will impact the community of La Conchita. A combination of factors makes future landslides inevitable. These are: active faulting and folding; rapid tectonic uplift; very weak rocks; steep topography; and, the presence of springs."

Keller and Gurrola explained that the triggering mechanism for debris flows and mud flows appears to be prolonged, intense precipitation. The larger, complex slides may increase in activity months or even years after wet years and infiltration of rainwater to the subsurface environment. An earthquake could also trigger a slide.

"Landslides similar or larger than the 1995 and 2005 events may occur next year or in coming decades, during or shortly after intense rain," said Gurrola. "People tend to have short memories when it comes to geologic hazards such as landslides. If people continue to live in La Conchita, more lives will be lost in the future and this is unacceptable."

Keller and Gurrola urged that property owners be fairly compensated for their property, and proposed that the site of La Conchita be made into a beach park. "For this to happen will take a significant community fund-raising effort with assistance at local, state and national levels in cooperation with organizations such as the Land Trust Alliance," said Keller.

He mentioned that a warning system of sensors to detect slope movement was installed in the slope following the slide of 1995. "However, the 2005 slide evidently started above these sensors or the slide was too fast for a warning," said Keller. "In hindsight, notice of the duration and intensity of rainfall might have been helpful in providing a warning, but additional research would be necessary to test this hypothesis. We do have 'Red Flag' day warnings in Southern California for wildfire, based on air temperature and wind pattern. Perhaps the same could be done for La Conchita, if people insist on living there. A combination of instruments to detect movement with assessment of rainfall might be the best approach."

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