



DEPARTMENT OF CONSERVATION

News Release

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CALIFORNIA GEOLOGICAL SURVEY ADVISES PUBLIC TO GET READY FOR LANDSLIDES

SACRAMENTO – Entering what could be a significant rainy season due to El Niño conditions, Californians need to be aware of the dangers of landslides and how to best prepare for them.

“A day or two of steady rainfall clearly can do the trick,” said California’s State Geologist, Dr. John Parrish. “And that’s particularly true in the several areas around the state in which wildfires have occurred.”

A landslide is any mass of earth and rock that moves downhill by sliding, flowing or falling. Large, slow-moving landslides composed of bedrock can cause extensive property damage, while debris flows, often called mudslides, can move very quickly. The California Geological Survey (CGS) notes that although landslides may occur at any time of year, their occurrence is far more likely when the weather turns rainy.

“Landslides often reoccur in the same unstable locations, or in areas where the vegetation has been burned away, but they can happen on any sloped surface,” Parrish said. “As a seismically active state, we do everything we can to prepare for earthquakes and tsunamis—the geologic phenomenon that can cause widespread damage. But landslides are much more common, and while not on the same scale as earthquakes or tsunamis, they can cause very significant localized damage. Furthermore, while there’s often some warning and time to get out of the path of the larger slides, the speed and force of some smaller ones can be compared to a speeding train.”

On October 16, mudslides engulfed nearly 200 vehicles on Highway 58 in Kern County and shut down Interstate 5 over the Grapevine. The next day, nearly 2 inches of rain in the foothills caused mudslides that blocked rural roads in parts of Amador and Calaveras counties impacted by the Butte Fire. The damage is not limited to roadways. Homes and other structures are just as vulnerable as roads to the threat of slides.

“People who own homes that survived the summer’s large fires have another reason to be concerned and alert now that the rainy season has begun,” said Chris Wills, who heads CGS’ landslide mapping program. “If your residence is on a slope or at the foot of one, it’s a good idea to hire a consulting geologist to do a site-specific assessment of the landslide potential.”

The Department of Conservation’s mission is to balance today’s needs with tomorrow’s challenges and foster intelligent, sustainable, and efficient use of California’s energy, land, and mineral resources.

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Another safety tip: check for fresh cracks in the soil, areas of bare soil (the root systems of plants and trees hold soil together), and water or mud streaming downhill.

Three or more inches of rain a day or a quarter-inch an hour also increases the likelihood of a landslide, as soil quickly becomes waterlogged.

“Use your ears as well as your eyes,” Wills advised. “If you hear a rumbling sound, it could be soil giving away, signaling the start of a debris flow.”

CGS works with the Governor’s Office of Emergency Services, Caltrans and CAL FIRE to identify areas impacted by wildfires that are [more likely to be impacted by landslides](#). Fire causes soil to become less absorbent; some burning plants give off a waxy residue and when coupled with ash, can clog pores in the soil, thereby causing rainwater to run off faster and increasing erosion and flooding.

In the last quarter-century, landslides have killed more than one hundred people and caused millions of dollars’ worth of damage to roadways and homes in California.

“The good news is that if residents take some simple precautions and pay attention to the warning signs, they can minimize property damage and possibly save lives—including their own,” Parrish said.

Visit the CGS [web site](#) for more information about landslides, including maps, tips for residents, and mitigation steps.

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