



Landslide Evaluation and Mitigation

Description

Team members of the Geotechnical and Structures Laboratory (GSL) have worldwide experience in reconnaissance and evaluation of landslides, specializing in expedient field judgment and the mitigation of hazard to the public.

Small landslides can trigger larger, more destructive debris flows. In December 2003, rainfall following the disastrous fires in California's San Bernardino Mountains triggered a landslide that killed more than a dozen campers. Nearly 3 years earlier, a major landslide in El Salvador resulted in several deaths and closed the Pan American highway for 1 week.

One of the most important lessons learned to date is that each ground failure is unique. That is, landslides are always triggered by a site-specific phenomenon. The key to understanding slide behavior and developing appropriate mitigation is identifying the triggering mechanism.

Capabilities

On short notice, GSL has successfully fielded small, bilingual (English and Spanish) teams—typically, one geotechnical engineer and one geologist—to provide on-the-spot assessments and recommendations for follow-on action to minimize the likelihood of renewed slope failure and to increase public safety. In each of these cases, the team rapidly generated summary briefings for high-level officials and technical personnel.

Members of this GSL team are currently conducting cutting-edge research to provide innovative tools for rapidly assessing natural and man-made geologic hazards.

Benefits

The ERDC team has experience and expertise to assess continuing site failure potential and to quickly develop mitigation concepts based on triggering event discoveries. The ERDC team members also have experience explaining complex situations with graphics designed to simplify interpretation. This expert team, and much of the related emergent technology, is ready for immediate deployment.

Supporting Technology

Additional details of this research are summarized in an [online lecture](#) entitled “The Uniqueness of Large Landslides.”

Success Stories

Within the last 10 years, team members have been instrumental in designing engineering solutions for high-hazard ground failures on rapid-response missions in Bolivia, Colombia, El Salvador, Honduras, Japan, Korea, Kuwait/Iraq, Mexico, Panama Canal, Taiwan, Venezuela, and many locations in the United States.

Points of Contact

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