

# Mid-Continent Geographic Science Center Natural Hazards Research — *Landslides*

## Introduction

Every year, natural hazards cause thousands of deaths and injuries and billions of dollars of property damage in the United States. Precipitation from hurricanes causes widespread regional flooding; ground shaking from earthquakes can topple buildings and bridges; floods can displace hundreds to thousands of people, ruin crops and disrupt transportation and commerce; and wildfires can destroy whole communities and leave steep mountainous areas susceptible to landslides and debris flows. Any of these hazards can have a devastating effect on individual lives and livelihoods, and local, State, Federal, and global economies.

The USGS is presently developing a Natural Hazards Initiative called Reducing America's Risks. While natural hazards are inevitable occurrences, the goal of this initiative is to limit losses of life and property. The research activities supported by the initiative can be broadly characterized in three areas: (1) activities related to prediction and assessment of natural hazards; (2) activities that support response to natural hazard events; and (3) activities that support recovery efforts after events. Researchers at the Mid-Continent Geographic Science Center in Rolla, Missouri have focused their attention on understanding the processes, predicting the occurrence, and mitigating the consequences of landslides.

## Landslides

Landslides are one of the most common natural hazards. They threaten lives and property in every State in the Nation. Each year, they cause an estimated 25 to 50 deaths and \$2 billion in property damage. A landslide occurs when rock, soil, artificial fill or some combination of these materials moves down a slope. The material can move by falling, flowing, sliding, spreading or toppling. Landslides are triggered by a variety of natural processes such as localized intense rainfall or seismic activity, or as a result of human activities such as highway or building construction, mining or deforestation.

## USGS / University of Missouri – Rolla Research Partnership

The Mid-Continent Geographic Science Center has established a partnership with the University of Missouri Natural Hazards Mitigation Institute to cooperate on research, to exchange information, and to develop applied solutions in areas of mutual interest regarding natural hazards risk and mitigation.

Scientists at the Mid-Continent Geographic Science Center are working closely with scientists and engineers at the University of Missouri Natural Hazards Mitigation Institute to identify small landslides, to characterize topographic expression of dormant landslides, and to refine predictive models of potential landslides. They are also investigating ways to communicate landslide risks and techniques to visualize the existence and extent of landslide hazards.

## Additional Information

For more information about landslide and other research at the Mid-Continent Geographic Science Center please write or call:

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This image shows a landslide that occurred in a remote area of the San Juan Mountains of Colorado. It was generated by superimposing a recent aerial photograph of the slide on a digital terrain model of the area.