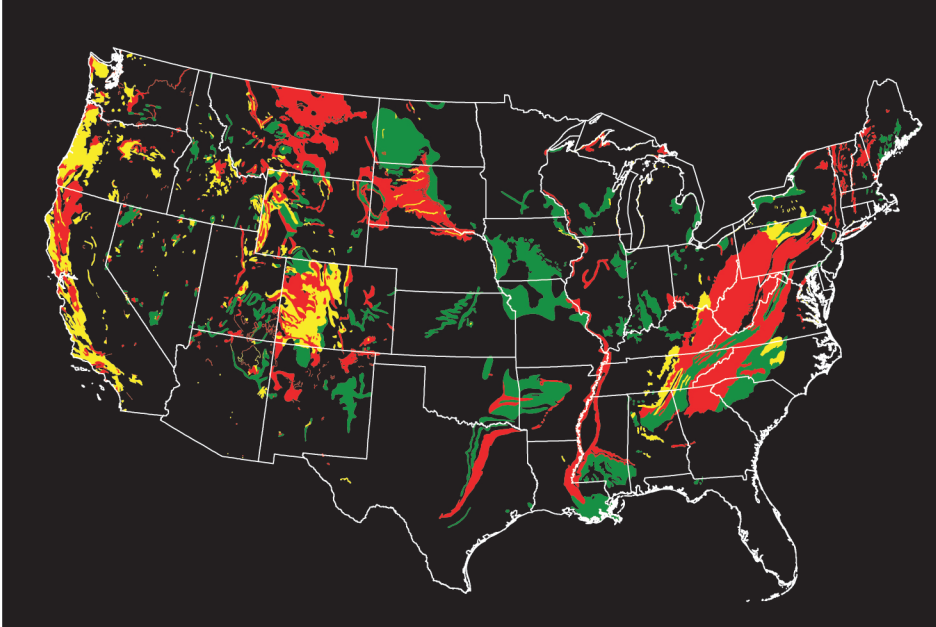


USGS Science Helps Build Safer Communities

Landslide Hazards—A National Threat

Landslide potential of the conterminous United States



Landslide potential of the conterminous United States: Red areas have very high potential, yellow areas have high potential, and green areas have moderate potential. Landslides can and do occur in the black areas, but the potential is low. Map not to scale. Sources: the National Atlas and the USGS

A Nationwide Danger

Landslides occur and can cause damage in all 50 States. Severe storms, earthquakes, volcanic activity, coastal wave attack, and wildfires can cause widespread slope instability. Landslide danger may be high even as emergency personnel are providing rescue and recovery services.

To address landslide hazards, several questions must be considered: Where and when will landslides occur? How big will the landslides be? How fast and how far will they move? What areas will the landslides affect or damage? How frequently do landslides occur in a given area?

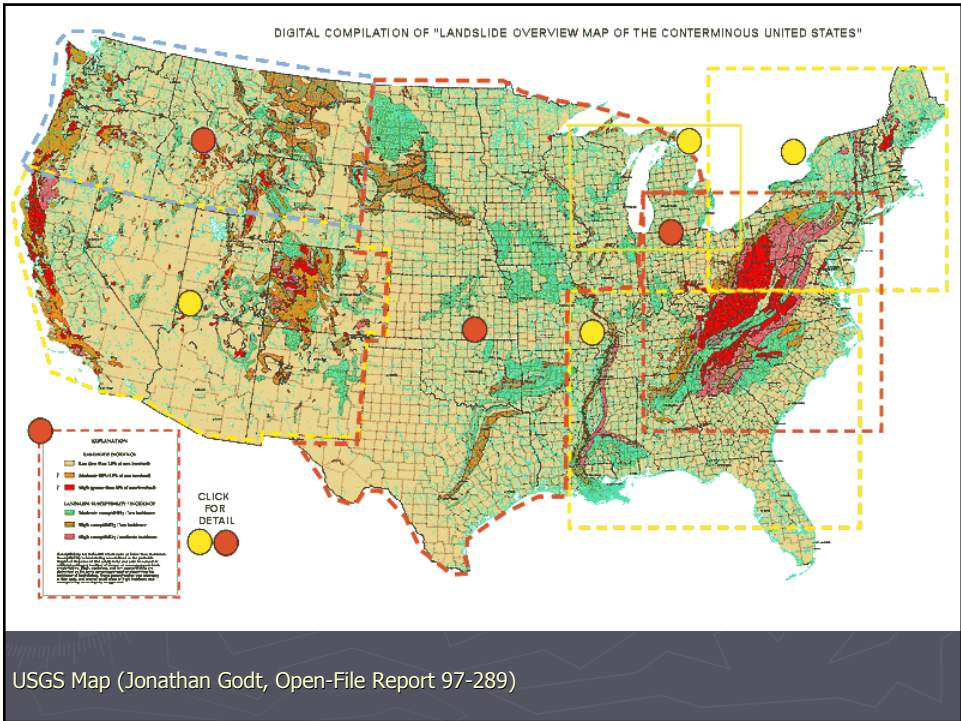
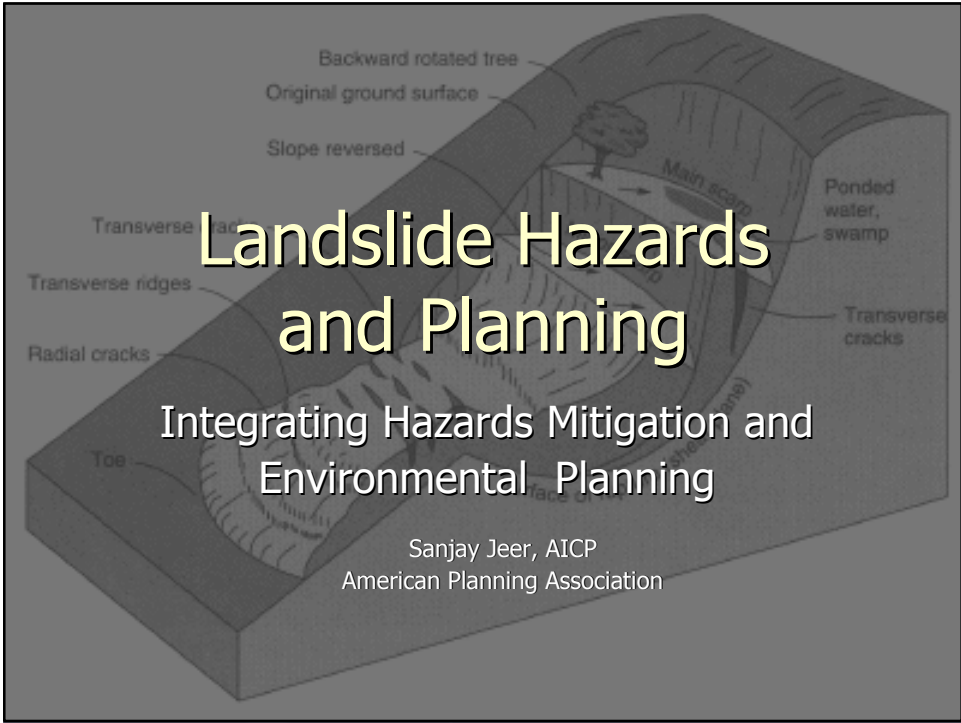
Answers to these questions are needed to make accurate landslide hazard maps and forecasts of landslide occurrence, and to provide information on how to avoid or mitigate landslide impacts.

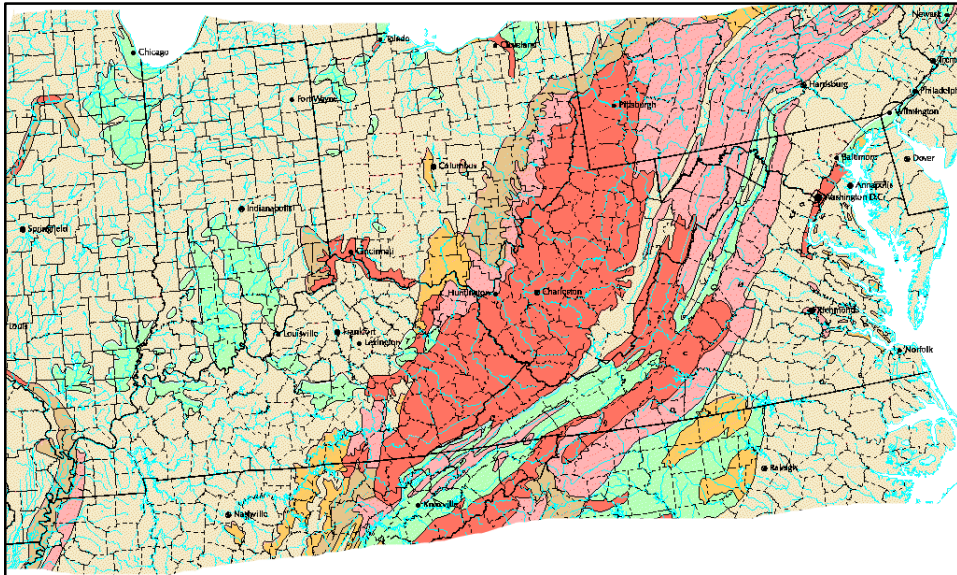
The U.S. Geological Survey (USGS) develops methods to answer these questions to help protect U.S. communities from the dangers of landslides.



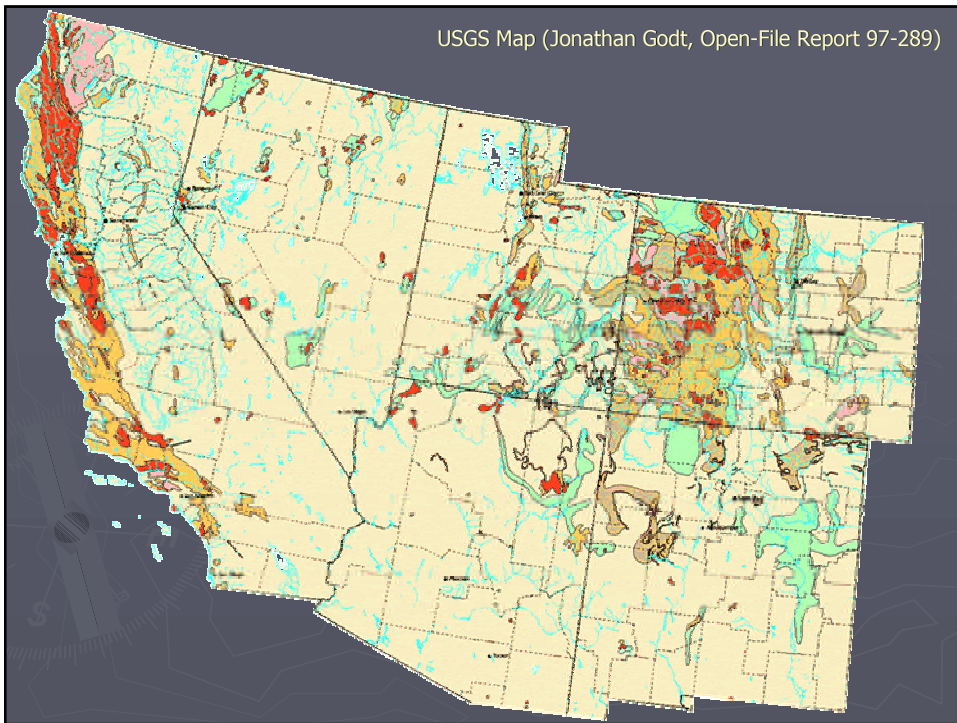
Debris flows, triggered by a rainstorm, move into and above the Arapahoe Basin ski area in central Colorado in 1999. The rain led to debris flows along the Interstate 70 corridor in Colorado, from Georgetown to the Eisenhower Tunnel. (USGS photo/Ed Harp)

Landslide Impacts	USGS Science Priorities
<ul style="list-style-type: none"> • Cause damage in all 50 States, Puerto Rico, and the U.S. Virgin Islands • Cost \$3.5 billion per year, in 2005 dollars, in damage repair • Cause between 25 and 50 deaths in the United States annually • Reduce real estate values and tourist revenue • Lead to lost human, industrial, agricultural, and forest productivity • Cause damage to the natural environment 	<ul style="list-style-type: none"> • Develop predictive models to examine the potential for large, slow-moving landslides • Advance existing models for the occurrence of fast-moving debris flows • Develop tools to predict the characteristics of debris flows generated from recently burned areas • Advance the operation of the joint National Oceanic and Atmospheric Administration-USGS Prototype Debris Flow Warning System





USGS Map (Jonathan Godt, Open-File Report 97-289)



USGS Map (Jonathan Godt, Open-File Report 97-289)