

## **The Study and Management of Landslides**

**By Shiva Saravanan**

Landslides are a huge hazard in the United States, causing one to two billion dollars of damage and costing 25 to 50 lives each year. These natural disasters are caused by several interacting systems, such as the atmosphere, the ocean, and geological composition. Many scientists work together to solve the problem of landslides in the U.S. For example, the Landslide Hazards Prevention program, or the LHP, is a program where geologists, hydrologists, and atmospheric scientists work together to help reduce the cost and fatalities of landslides. This USGS (United States Geological Survey) program assesses potential landslide risk, creates models of landslides, and provides landslide information to geological consultants. The LHP works with NOAA (National Oceanic and Atmospheric Administration) to provide a landslide alert system based on satellites. It focuses on landslides that occur in association with other natural disasters, such as undersea landslides that cause tsunamis.

Hydrologists study the way rainfall patterns are associated with hazardous landslides. Atmospheric scientists study the effect of weather patterns and other events in the atmosphere to help determine how these cause landslides. These scientists also create models to help better understand the effects of these weather-related events. Geologists studying volcanoes and earthquakes work to better protect the general public from landslides that are caused by these disasters.

Landslide damage is a problem in our nation, and one that many collaborating scientists help to solve. Lessons have been learned from past U.S. landslide disasters, such as the 1964 Alaskan Earthquake Landslide, which prompted the town of Valdez, Alaska, to move to more stable ground. Geologists, atmospheric scientists, and hydrologists all cooperate to mitigate this problem. They are helping the nation and perhaps the world with their work.