Volcanoes

Volcanoes pose many hazards to their surroundings, from ashfall, mudflows, lava flows, landslides, and associated earthquakes. At least 54 of the United States' 169 active volcanoes pose major threats to public health and safety and to major industries such as agriculture, aviation, and transportation.

Basics

An explosive volcano can devastate its local area with mudflows, lava flows, and avalanches of hot rock and gas. Mudflows from ice-clad volcanoes like Mt. Rainier can travel tens of miles from the volcano. Some volcanic hazards, such as ash fall, can even impact areas hundreds of miles away. While it is not possible to forecast the exact time and place of an eruption, volcano monitoring is important in order to detect changes in a volcano's activity and provide warning of potential eruptions.

Frequently Asked Questions

How many active volcanoes are there in the United States?
U.S. Geological Survey

Can volcanoes be dangerous even when they don't erupt?
U.S. Geological Survey

What kinds of hazards are associated with volcanic eruptions?
American Geosciences Institute

Why is monitoring volcanoes important to aviation?
U.S. Geological Survey

Why is it important to monitor volcanoes?
Earthquakes
Since 1900, earthquakes in the United States have resulted in over 1300 deaths and direct damages totaling more than $51 billion. While the West Coast and Alaska have the highest risk, history shows that major earthquakes can also affect the Central and Eastern United States.

Hazards
Natural hazards such as earthquakes, landslides, hurricanes, floods, and wildfires endanger public health and safety, threaten critical infrastructure, and cost our economy billions of dollars each year. Geoscientists study these hazards to provide information and warnings to populations at risk.

Landslides
Landslides affect all 50 states and U.S. territories, where they cause 25 to 50 deaths and more than $1 billion in damages each year. Geoscientists study and monitor landslides to identify at-risk areas, prepare populations, and improve our understanding of why, when, and where landslides happen.

Tsunamis
Tsunamis are destructive waves caused by sudden displacement of ocean water. Tsunamis most often appear on shore as a rapidly receding tide or rapidly rising flood. In the United States, the Pacific coastal states – Oregon, Washington, California, Alaska, and Hawaii – are at greatest risk for destructive tsunamis.

Maps & Visualizations
Interactive map of natural hazards in Nevada
Nevada Bureau of Mines and Geology

The Nevada Bureau of Mines and Geology's MyHAZARDS web app provides information on earthquakes, floods, fires, and other natural hazards in interactive map form. The map covers all of Nevada, as well as portions of surrounding states for certain datasets. The map includes: Recent and...

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Case Studies & Factsheets

Geologic maps identify volcanic hazards in Washington
Surface and subsurface mapping of lahar and lahar runout deposits from Glacier Peak volcano has contributed important geologic information for land-management planning and emergency preparedness in the lower Skagit Valley. Defining the Problem Active volcanoes, such as Glacier Peak (Fig. 1), pose a...

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