

# Hazards Caucus Alliance Fact Sheet

[www.hazardscaucus.org](http://www.hazardscaucus.org)

# VOLCANOES



A program of appropriate mitigation measures, including real-time monitoring networks, can help people live wisely with volcanic hazards while also enjoying the recreational and other benefits that volcanoes such as Mt. Hood, pictured above, provide.

[oregonstate.edu](http://oregonstate.edu)

## Is Mitigation Worth the Cost?

### Mt. St. Helens, May 18, 1980

- 57 fatalities
- 27 bridges and 185 miles of highways damaged
- Airports closed, air travel disrupted for 2 weeks
- Columbia River shipping interrupted for weeks
- Ash fall affected 10 states
- \$1.1 billion total economic losses

### Mt. Pinatubo, June 15, 1991

- \$1.5 million for accurate eruption forecast
- \$40 million for large-scale evacuation
- Up to 20,000 lives saved by evacuation
- Commercial and military aircraft protected, saving at least \$375 million

The U.S. is home to 169 active volcanoes of which 55 are considered threatening to life and property. Most of these occur in **Alaska, Washington, Oregon, California, Wyoming** and **Hawaii**.

Sufficient monitoring can predict an eruption weeks to months in advance and aviation authorities can be warned of dangerous plumes within minutes.

The U.S. has 5 volcano observatories and spends about \$20 million per year to monitor and assess volcanic hazards. In 2006, these observatories issued more than 1000 public advisories about current conditions at U.S. volcanoes.

## Quick Facts

In the past 20 years, 8 commercial aircraft have lost engine power in flight and dozens more have been damaged after flying into ash clouds.

Kilauea, Hawaii has been erupting almost constantly since 1983, destroying 181 homes with losses of about \$61 million and causing lung ailments.

Volcanoes have caused 5% of all tsunamis in the past 250 years.

At 1,943 feet deep, Crater Lake in Oregon is the deepest lake in the U.S. and the 7th deepest in the world. It was formed by the eruption and collapse of Mt. Mazama about 7,700 years ago.

Because of its probability of eruption, extensive glaciation and proximity to large populations, Mt. Rainier is often called the most dangerous volcano in the U.S.

## Resources

**USGS:** [volcanoes.usgs.gov](http://volcanoes.usgs.gov)

**RED CROSS:** [www.redcross.org](http://www.redcross.org)

**FEMA:** [www.fema.gov/areyouready/volcanoes.shtm](http://www.fema.gov/areyouready/volcanoes.shtm)

**SMITHSONIAN INSTITUTE,** Global Volcanism Project: [www.volcano.si.edu](http://www.volcano.si.edu)

# VOLCANIC HAZARDS

**ASH:** composed of abrasive bits of glass and minerals. Ash has many deleterious effects, including: respiratory ailments; destruction of crops and livestock; disruption of power-generation systems; and disruption of transportation systems, including roads and cars, railways, and airports and aircraft. In 1989, a 747 passenger jet flew into an ash cloud from Mt. Redoubt, Alaska, causing all four engines to quit. The crew was able to recover, but the plane sustained \$80 million in damages.

**LAHAR:** a mudflow that consists of volcanic debris and water. Lahars may travel up to 50 mph down river channels with enough force to bury or destroy everything in their path. A lahar killed over 23,000 people when it buried the town of Armero, Colombia in 1985. In the U.S., the Cascade Volcanic Range of Washington, Oregon, and California poses the highest lahar risk.

**PYROCLASTIC FLOW:** an incendiary avalanche of hot ash and volcanic gas that rushes downhill as fast as 100-150 mph. A pyroclastic flow killed all but two of the 30,000 inhabitants of St. Pierre, Martinique in the 1902 eruption of Mt. Pelée.

**EARTHQUAKES AND LANDSLIDES:** As volcanoes grow, they can trigger earthquakes and landslides. About 50,000 people died when an earthquake triggered a massive landslide on Mt. Huascarán that crushed several Peruvian villages.

**FIRES, ACID RAIN, POISON GAS EMISSIONS AND TSUNAMIS** may all result from volcanic activity. Non-eruptive carbon dioxide gas emissions have been responsible for nearly 2000 deaths world-wide in the past decade, including 3 fatalities at Mammoth Mountain, California in 2006.

## Preparing for a Disaster

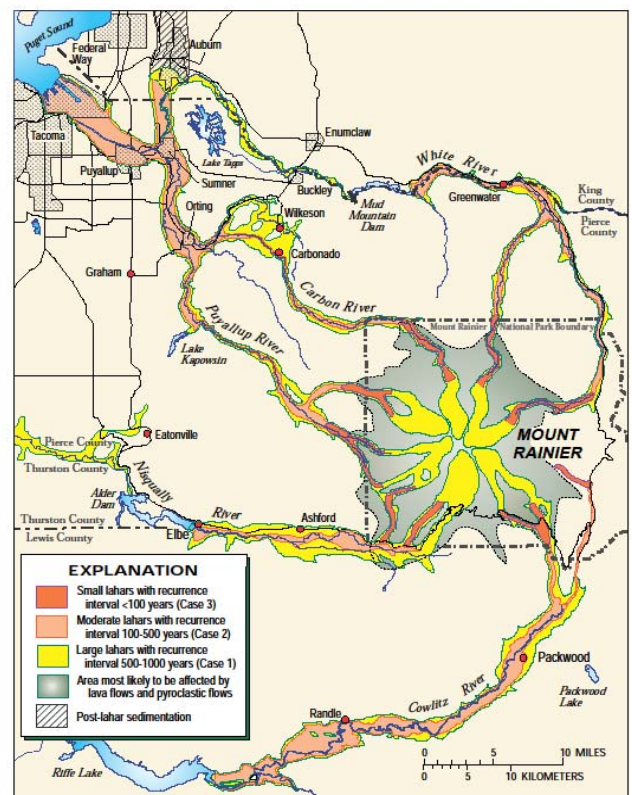
The USGS produces hazard maps like this one for Mt Rainier (at right) depicting the historical paths of lahars to aid state and local officials in planning. More than 100,000 people live in the area.

### Individuals Can Prepare By:

- Knowing their risks
- Learning about community emergency plans
- Developing a family emergency plan
- Having disaster supplies (including dust masks)

### During an Eruption, You Should:

- Listen to a portable, battery-operated radio
- Follow instructions of authorities
- Bring animals and machinery indoors
- Stay away from river channels or low-lying areas



The **Congressional Hazards Caucus** is co-chaired by Senators Mary Landrieu (LA), Ben Nelson (NE), and Lisa Murkowski (AK) and Representatives Dennis Moore (KS), Jo Bonner (AL) and Zoe Lofgren (CA). The Caucus helps individuals, businesses, and communities better prepare for and mitigate the costs of disasters. The Caucus seeks to foster dialogue on steps that government and citizens can take to lessen the severity of these disasters. To learn more about the Caucus, visit [www.hazardscaucus.org](http://www.hazardscaucus.org).