



Recommended Teaching Messages about Cascade Range Volcanoes

Cascade Volcanoes—active with potential to erupt again

- Active volcanoes dominate the skyline of the Pacific Northwest. These peaks are part of a 1,200-mile long chain of volcanoes that extends from northern California to southern British Columbia.
- Eruptions in Cascades have occurred at an average rate of a few per century during the past 4,000 years. Since our nation was founded, an eruption has occurred during the lifespan of almost every generation.
- Seven volcanoes in Cascade Range erupted since the first Independence Day; four of these eruptions caused substantial impact to landscapes now densely populated.
- As populations increase in the Pacific Northwest, areas near volcanoes are being developed and recreational usage is expanding, more people and property are at risk. The next eruption in the Cascades could affect hundreds of thousands of people.
- With virtual certainty, Cascade volcanoes will erupt again. When they do, melting of snow and ice will cause lahars (volcanic mudflows) that travel down the rivers to areas distant from the volcano.
- Geological processes cause change constantly. Volcanic landscapes observed today are in some ways different from the landscapes observed by our grandparents, and the views to be seen by our grandchildren.

Hazards at Cascade Volcanoes

- Snow and ice on volcanoes pose a special hazard during volcanic eruptions. Even small eruptions can melt a large amount of snow and ice, triggering lahars that travel tens of miles beyond the flanks of a volcano into populated valleys.
- Lahars are the most costly effects of eruptions at snow-clad volcanoes.
- Sediment is the lasting legacy of lahars. Years after eruptions have ended, sediment clogs waterways and disrupts aquatic ecosystems, and promotes flooding.
- Volcanic ash consists of tiny fragments of broken rock. Wind direction and speed, as well as the amount of ash erupted, will determine where ash will fall.
- Like airborne particles from dust storms, fires and pollution, sustained volcanic ash fall can pose a health risk, especially to children, the elderly, and people with cardiac or respiratory conditions. Ash can cause severe impact to infrastructure systems—ground and air transportation, communications, and water treatment.

Preparing for Future Eruptions

- Scientists evaluate hazards by examining evidence of previous eruptions and identifying areas likely to be affected by future eruptions. This provides a basis for mitigating effects of future eruptions.
- Volcanoes show signs that they are going to erupt days to months or more in advance. Rising magma shakes and deforms the Earth, and emits volcanic gases. Scientists measure earthquakes, ground surface deformation, changes in gas flux from vents and cracks, and other physical changes.
- Scientists study volcanoes to develop and test new ideas about how volcanoes work; to develop new instrumentation; and to improve eruption-forecasting models so that they can provide timely warning to officials and residents in areas at risk.
- Science isn't done until it's shared. Scientists provide information about volcanoes and hazards to public officials and the media so that they can inform land use and emergency planners, the Federal Aviation Administration and other federal agencies, the news media, schools, and the public.

What you can do now <http://volcanoes.usgs.gov/>:

- People who are knowledgeable and prepared can survive in greater safety and comfort and with confidence during the next volcanic eruption. Your family or business will rely on you to follow with these important measures.
 - **Learn**—Your family, school and business will have a better opportunity to survive safely or recover quickly if they learn now about the location of volcano hazard zones.
 - **Inquire**—Inquiring about current volcano conditions, community evacuation plans, and then obeying officials can help your family or business survive with less disruption during an eruption.
 - **Prepare**—Preparing your home with extra supplies and an emergency communication plan may reduce losses and help your family live with greater peace of mind through the next volcanic eruption.

When volcanic eruption is underway:

If you are in a lahar hazard zone, get to high ground and to shelter. If you are above a lahar hazard zone, shelter in place.

It is a Long Journey from Education to Preparation. Educate and Prepare Now. <http://volcanoes.usgs.gov/>