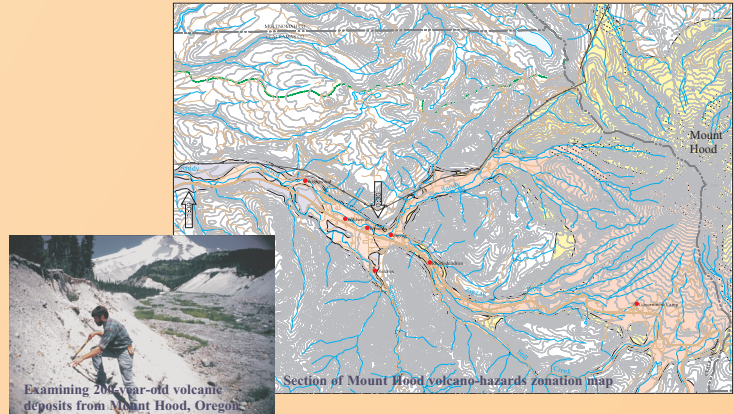


# Strategy for Reducing Volcanic Risk

- **Identify hazardous areas**

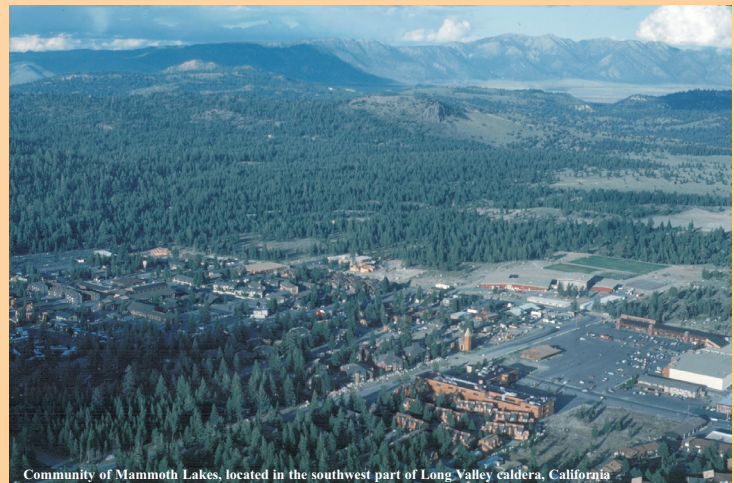
Scientists identify areas likely to be affected during future eruptions through detailed mapping of deposits from past eruptions. An understanding of volcanic processes and knowledge of a volcano's eruptive history provide the basis for preparing emergency-response plans before and during a volcano crisis, and for long-term community planning.



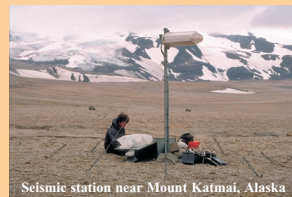
USGS volcano-hazards zonation maps show areas that are likely to be affected during future eruptions and from lahars (volcanic mudflows). The Mount Hood hazards map shows areas at risk according to hazard type, size, and probability. In addition, estimated lahar travel times are indicated for major drainages. This volcano-hazards map is one of many that USGS scientists have recently completed or revised for volcanoes in the Pacific Northwest, Alaska, and Hawaii.

- **Monitor unrest and issue timely warnings**

Scientists issue warnings of future and ongoing eruptions by interpreting real-time data from networks of volcano-monitoring sensors. Volcanoes typically show signs of restlessness days to months to years before an eruption occurs. Since not all unrest leads to an eruption, monitoring data is essential in determining whether the activity poses an immediate hazard to people and property.



Community of Mammoth Lakes, located in the southwest part of Long Valley caldera, California



Seismic station near Mount Katmai, Alaska

Currently the USGS is enhancing its volcano monitoring networks in Alaska, California, Hawaii, Washington, and Wyoming.

Since 1980, scientists have monitored an increase in earthquake activity and inflation of the ground beneath Long Valley caldera in eastern California. In 1997, an especially intense swarm of earthquakes and higher rates of ground uplift in the central part of the caldera renewed concerns over the possibility of an eruption. Many of the earthquakes were felt by people in Mammoth Lakes, further heightening local concern. The long-standing USGS monitoring network allowed scientists to determine that there was no immediate hazard, and to communicate this information to public officials using a color-coded notification plan.