

WHO'S KEEPING WATCH OVER CASCADES VOLCANOES?



**The U.S. Geological Survey
(USGS)**

Open-File Report 97-125

THE USGS OBSERVES, MEASURES, AND STUDIES VOLCANOES IN THE CASCADES

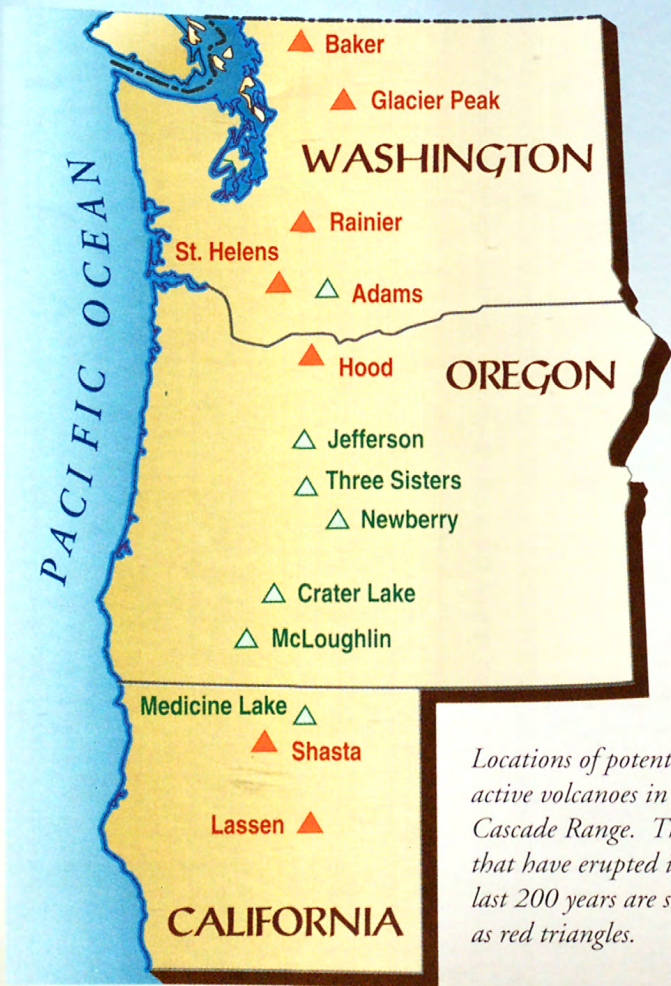
The USGS Cascades Volcano Observatory (CVO) in Vancouver, Washington, was founded in 1980 following the devastating eruption of Mount St. Helens. It is one of three such observatories in the country today (others are in Hawaii and Alaska). Observatory scientists, technicians, and support staff work in partnership with colleagues at other USGS centers, universities, and other agencies to:

- Monitor restless volcanoes and provide timely warning of eruptions
- Assess hazards from volcanoes, including water-related hazards in valleys draining volcanoes
- Share volcano information with emergency-management and planning officials
- Develop new techniques and methods to better monitor and predict behavior of volcanoes
- Study volcanic processes
- Educate public officials, citizens, and the news media about what volcanoes can do



Geologists measuring gas escaping from the lava dome in the crater of Mount St. Helens.

THE USGS WORKS TO PREVENT VOLCANIC DISASTERS



Locations of potentially active volcanoes in the Cascade Range. Those that have erupted in the last 200 years are shown as red triangles.

In the past 200 years, seven volcanoes in the Cascades have erupted, and Cascade eruptions can trigger a variety of hazardous processes. Areas within 10 to 20 miles of erupting volcanoes can be devastated by flows and blasts of hot rock and superheated air, and valleys may be exposed to high concentrations of lethal volcanic gases (also possible during noneruptive periods). Volcanic ash can rise high into the air to drift with the wind, threatening aircraft and disrupting life on the ground hundreds of miles downwind. Eruptions (and sometimes giant landslides not related to eruptions) can also send floods or torrents of mud and rock hundreds of miles down river valleys. The USGS works to prevent loss of life and property from these catastrophic processes here in the Pacific Northwest and elsewhere.

THE USGS SENDS RAPID RESPONSE TEAMS TO AREAS OF VOLCANIC CRISIS

The core of the USGS volcano rapid response team is located at CVO. Team members are capable of responding within 24 hours to threatening volcanic activity anywhere in the US or the rest of the world. USGS staff have the experience that is often needed and requested by the US Agency for International Development (Office of Foreign Disaster Assistance) for crisis situations in many countries. The additional experience gained from work at foreign volcanoes greatly strengthens the USGS program because it provides a training ground where skills are sharpened, experience is broadened, and equipment is tested. USGS scientists then are better prepared to respond to volcano crises at home.



Locations of volcanoes (dots) where USGS scientists have assisted in predicting eruptions and lessening their direct and indirect effects on populations.

*Village buried
by volcanic mud
and rock following
the eruption of
Mount Pinatubo,
Philippines, 1991.*



THE USGS PROVIDES INFORMATION, PRODUCTS, AND SERVICES ABOUT VOLCANO HAZARDS

The USGS at Cascades Volcano Observatory (CVO) offers a range of information about volcano hazards to scientists, planners, emergency-management officials, emergency-response teams, law-enforcement personnel, educators, and citizens.

PRODUCTS

- "Fact Sheets" about hazards and natural processes related to volcanoes
- Exhibits about individual volcanoes and volcanic hazards
- Resource materials for teachers about volcanoes and geology in general (booklets, videos, rock collections, etc.)
- Reports about scientific studies of hazardous processes and geological history of Cascades volcanoes
- Hazard assessment maps and reports for volcanoes in Washington, Oregon, and California (paper copies and digital files)

SERVICES

- World Wide Web Site: <http://vulcan.wr.usgs.gov>

A wealth of information about Northwest volcanoes, real-time conditions at streams and rivers around Mount St. Helens, USGS volcano research activities, and some fact sheets, reports, and maps can be obtained through our Web Site.

- Educational presentations and workshops for schools, teachers, and community groups



Please contact the Public Information Officer at:

U.S. Geological Survey
Cascades Volcano Observatory
5400 MacArthur Boulevard
Vancouver, WA 98661-7095

Phone: 360-696-7693
Fax: 360-696-7866
Email: cvo@usgs.gov

WHERE TO LEARN MORE ABOUT CASCADES REGION GEOLOGY, HYDROLOGY, AND HAZARDS

Maps and Reports

Geologic and topographic maps, and geologic and hydrologic reports for the Pacific Northwest can be purchased from:

U.S. Geological Survey
Earth Science Information Center
West 904 Riverside, Suite 135
Spokane, WA 99201
(509) 353-2524

U.S. Geological Survey
Branch of Distribution
P.O. Box 25286
Denver, CO 80225
(303) 202-4210
URL: <http://www-nmd.usgs.gov>

Books, maps, slides, and videos about Mount St. Helens

Items can be purchased from the Mount St. Helens National Volcanic Monument, either by visiting the Silver Lake Visitors Center, about 5 miles east of I-5 on Hwy 504, near Castle Rock, Washington (360) 274-2100, or by mail through the Northwest Interpretive Association (a nonprofit organization), (360) 274-2125.

Conditions and Hazards

Earthquake (E), Landslide (L), Flood (F), Coastal (C),
Ground water (G), Surface water (S)

National Earthquake Information Center (E)
U.S. Geological Survey, Denver, CO
(303) 273-8500
URL: <http://wwwneic.cr.usgs.gov>

National Landslide Information Center (L)
U.S. Geological Survey, Golden, CO
(303) 273-8588
URL: <http://gldage.cr.usgs.gov>

U.S. Geological Survey (F,S,G)
Washington District Office, Tacoma, WA
(253) 428-3600
URL: <http://wwwdwatcm.wr.usgs.gov>

U.S. Geological Survey (F,S,G)
Oregon District Office, Portland, OR
(503) 251-3200
URL: <http://wwworegon.wr.usgs.gov>

National Weather Service (F)
Columbia River Basin/Oregon
Flood Forecasting, Portland, OR
(503) 326-2340 or (360) 694-6136
URL: <http://nimbo.wrh.noaa.gov/Portland>

Washington Department of Natural
Resources (E,L,C)
Geology & Earth Resources, Olympia, WA
(360) 902-1450
URL: <http://www.wadnr.gov>

Oregon Department of Geology
and Mineral Industries (E,L,C)
Portland, OR
(503) 731-4100
URL: <http://www.naturenw.org>

U.S. Army Corps of Engineers (F)
Flood Plain Management, Portland, OR
(503) 326-6411