





Science for a changing world

Living with a Volcano in your Backyard--Education and Outreach

Eruptions in the Cascade Range During the Past 4,000 Years



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Interpreters are players in a larger collaborative effort that involves emergency managers, scientists, educators, interpreters, and community leaders.

Audiences

Public Officials Educators and Interpreters Media General Public



Mount Rainier Volcano Hazard Work Group has been meeting since 1995—emergency and land use managers, scientists, interpreters, teachers and community leaders.

--Developed a Volcano Response Plan



A coalition of local, state and Federal agencies dedicated to fiving responsibly with volcano hazards







Goals of Outreach Program

- That everyone who needs information will find it available and understandable
- Institute the message at grassroots level, where the hazard is dealt with most effectively.
- Everyone will know whether they live, commute, work or go to school in a volcano hazard zone.
- Everyone in a hazard zone will have a plan...

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Objective...

 To provide consistent messages so that people can make knowledgeable decisions about living with volcanoes in Cascadia.

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Principal Premise of Mount Rainier Outreach...

When people become knowledgeable about natural processes, they can prepare for hazards, then live more comfortably in their corner of paradise!



Mount Rainier is an ACTIVE volcano.

- Last erupted in 19th century. (1820-50's ash eruption; 1894-95 steam activity)
- Seismically active (earthquakes below base of volcano indicate hot rock)
- Active hydrothermal system (hot springs, steam)
- Location on active subduction zone (magma still forming)



With Virtual Certainty...

Mount Rainier will erupt again.

When it does, hot rock will melt snow and ice and cause lahars (volcanic mudflows) that travel down the river valleys to areas distant from the volcano.



Mount Rainier is the highest peak in WA; it holds as much perennial snow and ice as all other Cascade volcanoes combined...(1 cubic mile)







Eruptions and Lahars at Mount St. Helens, Nevado del Ruiz, Mount Pinatubo and elsewhere convinced scientists of the need for increased cooperation between scientists, emergency and land-use managers, and community leaders.



Osceola Landslide and Mudflow 5,600 years ago











Paths of the Electron and Osceola Mudflows



Sediment from the Osceola and other mudflows contributed to the infilling of some Puget Sound inlets



Mount Rainier Lahar hazards







At present, Mount Rainier shows no signs of volcanic unrest.

•When unrest is detected, scientists will increase monitoring efforts.

•Public officials will notify the public via the media.



Volcanoes give us warning signs

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•Volcanoes often show signs that they are getting ready to erupt days to months or more in advance.

•Scientists evaluate signs of unrest and look for:

- Increased emission of volcanic gases
- Increased earthquake activity
- •Swelling of the volcano.

Lahar at Semeru Volcano, Indonesia

Date: 19 January 2002 Front depth : 3.5 m Frontal velocity : 5.3 m/s Franck Lavigne



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What actions should residents take?

- Learn—whether you live, commute, work or go to school in a volcano hazard zone
- Inquire –Ask public officials how they advise you to respond.
- Plan—make a plan for how your family and colleagues will respond during volcanic unrest.

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Available Outreach Materials

- Volcano Awareness Month in May each year—posters, etc.
- Volcano Fact Sheets, websites, posters, preparedness brochures, presentations when possible...
- Videos
- Permanent and temporary exhibits
- Educator guide
- Teacher workshops
- Volcano ash website



Installed Lahar Warning, Notification and Communication systems.



Supports Volcano Evacuation Route Maps—Pierce County and Mount Rainier National Park





Interpretation of the hazard











Installed roadside and interpretive signage, evacuation and escape routes— Pierce County and Mount Rainier National





Park.

Supports community ordinances to keep populations and critical facilities low in hazardous areas.



- Critical Use Ordinance in Pierce County prohibits development of critical facilities.
- Volcanic hazards are addressed in many county's plans for FEMA Disaster Mitigation Act 2000



Supports local citizen efforts.



Bridge for Kids









Supports Practicing of School Evacuation– in Orting, Sumner and Puyallup, Washington







10 am, October 28th, 2002 What · Test of the lahar warning procedures for th Puyallup and Carbon River Valleys. · Outdoor warning sirens will be activated and will run three to five minutes. Local television and radio news stations may run the Emergency Alert Signal (EAS) test. NOAA weather radios will be activated during this test. When 10 a.m., Monday, October 28*, 2002. Where-Orting, Sumner, Puyallup, and Fife Test the alort call-down process. Check the sound coverage throughout the valley. Check the different alerting mechanisms. Remind valley residents of the need for sirens

Lahar Warning Test



Questions? Please contact Plarce County Emergency Management, 253-798-7470.







Supports Teaching about Mount Rainier—teacher workshops, National Park Service education center.







Educator Guide—Living with a Volcano in your Backyard—an Educator's Guide with Emphasis on Mount Rainier

Supports development of Educator Guide —"Living with a Volcano in your Backyard—with Emphasis on Mount Rainier".





Get Involved! Celebrate your local volcano !

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Some Volcano Websites

- Mount Rainier National Park <u>www.nps.gov/mora</u>
- USGS Cascades Volcano Observatory <u>http://vulcan.wr.usgs.gov</u>
- USGS Volcano Hazards Program <u>http://volcanoes.usgs.gov</u>

