Internal processes: Battling volcanoes

Volcano classification

Reading:
This week: Ch 5
Next week: Ch 6

Volcano precursors

Symptoms of magma flow:
• Small earthquakes
• Volcano surface deformation
• Change in gas composition

Eruption predictions:
Successes

Mount St Helens, 1980:
• Initial signs of activity March 1980, erupted May 18, 1980
• People were evacuated from the area, and the park closed
• Park usually has 2000 + curious, only 54 deaths

Mount Pinatubo, Philippines, 1991:
• June 15 eruption preceded by 2 month of activity
• 60,000 people evacuated saving 1000’s lives (~400 died)

Volcano classification

Active erupted in recent history
Dormant (sleeping) fresh looking, not too eroded
Extinct (dead) no record of eruption, eroded

But, the volcanic cycle timescale can be very long:
• typical eruption interval for 'active' volcano is ~220 yrs
• 20% of volcanoes erupt less than once every 1000 yrs
• 2% ...less than every 10,000 yrs
Heimaey, Iceland

Fire on Heimaey
The story of the 1973 eruption
Osvaldur Knudsen

Success?
Was this a successful battle against a volcano?

Volcanic hazard in the US

- U.S. volcanoes that have experienced eruptions recently
- U.S. volcanoes that have erupted more than 10,000 years ago
- U.S. volcanoes that are capable of producing devastating eruptions

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Environmental Geology – Battling volcanoes
Mount Rainier Lahar hazard

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