Internal processes: Battling volcanoes

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

Environmental Geology – Battling volcanoes

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
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 eruption evacuated saving 1000’s lives (~400 died)
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 short-term eruption periodicities: 1000-5000 years or less, or have erupted in the past 300-500 years, or both.
- U.S. volcanoes that appear to have eruption periodicities of 1000 years or greater and last erupted 1000 years or more ago.

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