

Pework for Unit 4: Risk at Divergent Plate Boundaries

Although in everyday speech the terms “hazard” and “risk” are often used interchangeably, in formal risk assessment, we have seen that “hazard” is only one component of the risk equation:

$$\text{Risk} = \text{Hazard} \times \text{Value} \times \text{Vulnerability}$$

Overall risk can be reduced by reducing any one of the components of the risk equation. At divergent plate boundaries where volcanism is an existing hazard, reducing the *vulnerability* of people and property already there is an important strategy for reducing risk.

Unlike earthquakes for which no reliable precursors have been identified, a variety of phenomena are associated with active volcanoes, and can give indications that eruptive activity is imminent.

1. Fill out the attached spreadsheet about techniques used to monitor volcanoes, using information from IRIS (Incorporated Research Institutions for Seismology); this consists of animations and accompanying “background” document available at: http://www.iris.edu/hq/programs/education_and_outreach/animations/16

The animations are also available on YouTube:

Seismic Monitoring	http://www.youtube.com/watch?v=nlo-2JoNHrw
Gas Monitoring	http://www.youtube.com/watch?v=owk4fWbw4qM
Monitoring Deformation and Tilt	http://www.youtube.com/watch?v=sNYQkxxd_0Q

2. In class, you will be following the events associated with the 2010 eruption of the Icelandic volcano Eyjafjallajokull. In order to do so, you should know how to pronounce it! Go to the following website and get a brief tutorial in Icelandic pronunciation.

View this video to get an overview of the eruption and tutorial on the pronunciation:
http://content.time.com/time/video/player/0,32068,79889722001_1984383,00.html

If the Flash video no longer works, you can use this video to get a tutorial on the pronunciation:
https://www.youtube.com/watch?v=hSo_ND41-6g

MONITORING VOLCANOES			
	Technique/ equipment needed	Data collected	Eruption "signature" and what mechanism is responsible
Seismic monitoring			
Gas Monitoring			
Measuring Deformation and Tilt			