

The learning goals for this activity are to:

1. Use qualitative and quantitative information to assess risk due to geological hazards associated with plate boundaries.
2. Develop strategies to mitigate risk associated with geological hazards.

I. Geologic Monitoring Updates: Experts in each data type (seismology, gas geochemistry, tilt) need to disperse into new teams assigned for several important Geographic Monitoring Sites around Mount Rainier.

1. Give the name of your **Geographic Monitoring Site:** _____
2. In your group, share the observations and interpretations of previous and new geologic monitoring data. Record your observations and interpretations in a report (table below) to provide disaster management officials with information on the current state of volcanic activity. Be sure that everyone in your group understands how to interpret all data types.

Seismic	Gas, Fumaroles, Ash	Tilt
Observations: 	Observations: 	Observations:
Interpretations: 	Interpretations: 	Interpretations:

3. As a group, determine an updated Alert Level for the volcano. Provide evidence for your update (remember an update can be to move the alert level up, down, or to keep it at the same alert level, you just need to justify your decision). The USGS Alert Levels are provided on the last page of new data distributed today.

4. Use the USGS Geologic Hazard Map (in Geologic Data Set 3) to identify the greatest hazard to your geographic site: _____

II. Vulnerability Assessment: Given the activity at Mount Rainier, disaster management officials need to be able to compare the hazards and vulnerability of sites around Mount Rainier. As a geographic monitoring group, you need to use the same criteria to assess your sites, which can be compiled in the table below. Note that you are assessing *vulnerability* to hazards, not *risk* (hazard x vulnerability x value).

5. **Vulnerability Characteristics:** Given the most important hazard at your site, describe the geological, geographic, and topographic characteristics of areas with high, moderate, and low vulnerability for each hazard (see example provided).

6. With input from all site groups, compile a consistent set of criterion to describe the Vulnerability Characteristics for each hazard (your instructor will guide this discussion).

Impacts: Hazards:	Characteristics of <i>high</i> vulnerability locations	Characteristics of <i>moderate</i> vulnerability locations	Characteristics of <i>low</i> vulnerability locations	Vulnerability Score	Reflections
<i>Pyroclastic Flow</i>					
<i>Lahar</i>					
<i>Ash Fall</i>					
<i>Flooding</i>					
<i>Gas Emissions</i>	Within 5 km downwind of volcanic vent	Within 10 km downwind of volcanic vent	N/A		

7. Determine the **Vulnerability Score** at your site for each hazard (3 =High, 2 = Moderate, 1 = Low, 0 = no chance). Total Score: _____

8. Complete the **Reflections** column of this table when instructed to do so.