Small quakes beneath Mount St. Helens suggest magma is filling chamber

By Alan Yuhas, The Guardian, adapted by Newsela staff on 05.15.16
Word Count **562**

Mount St. Helens in Washington state emits a plume of steam and ash, Oct. 1, 2004. Photo: REUTERS/U.S. Navy/Scott Taylor HB

More than 130 earthquakes have been felt beneath Mount St. Helens in Washington state over the last eight weeks, according to the U.S. Geological Survey (USGS).

Since March, the rate of earthquakes under the volcano has been “steadily increasing,” the USGS reported. At its peak, nearly 40 earthquakes were found per week.

Most of the quakes occurred about 1 to 4 miles beneath the active volcano. Most have been extremely weak at magnitudes of 0.5 or less, the largest a 1.3-level quake.

The USGS said there had been many more earthquakes that were too small to be felt at the surface or be precisely located. A 0.7-level quake “would not be felt if you were standing on the surface above it,” the seismologists wrote. Seismologists study earthquakes.

The quakes do not mean the volcano is any more likely to erupt in the near future, the USGS said. It described the earthquakes as common and said they are caused by the Earth's plates moving slightly along a fault line.

No Eruption Coming Soon

They do, though, suggest the volcano is building up its stores of magma, the scientists said. Magma is molten rock from deep inside the Earth. As the magma rises to fill the volcano's magma chamber, it presses against the colder rock around it, increasing pressure. This push and pull creates quakes.

The USGS noted that there were minor quakes beneath Mount St. Helens in 2013 and 2014. Earthquakes swarmed in the 1990s with more energy and at much higher rates.

The seismologists said they had detected no signs that the volcano will erupt any time soon. They found no unusual gases and no earthquakes near the Earth's surface. Also, there is no sign that the land above the magma chamber has been deformed, another sign that an eruption may take place.

57 People Died In 1980

Mount St. Helens last erupted in 2008, after a surprise reawakening in 2004 and several years of activity. Swarms of earthquakes before the 2004 eruption averaged between magnitudes of 2 to 4.

On May 18, 1980, the volcano erupted catastrophically. A column of ash reached 80,000 feet in the air and flows of boiling ash, gas and rock cascaded off its slopes. Part of the volcano collapsed, ash fell as far away as New Mexico, and 57 people died as a result of the eruption.

The volcano is now one of the most closely monitored in the world. Researchers at three universities have placed thousands of sensors around the volcano to check what is going on inside.

This Type Of Earthquake Activity Is Normal

"It's telling us (that) years to decades from now, St. Helens will erupt again," said Seth Moran. He is the scientist-in-chief at the Cascades Volcano Observatory. Mount St. Helens is in the Cascade mountain range.

He said their best long-term forecast is that the next eruption will not be as large as the 1980 eruption.

Erik Klemetti is an assistant professor of geosciences at Denison University. He said in Wired magazine that recharging magma can take years.

"It might have been five years between the big recharge event in 1998-99 and the 2004 eruptions," he said.

The swarms are normal volcanic activity, Klemetti wrote. Magma rising up within the sleeping volcano will have a long path to go before it can load up Mount St. Helens for a new eruption.

Quiz

1 Based on the article, which of the following BEST explains why Mount St. Helens is covered with so many sensors?

(A) Some scientists are concerned that another devastating eruption is very likely to happen soon.

(B) Scientists have recently developed new technology that allows them to easily study volcano activity.

(C) Swarms of earthquakes near the surface of the volcano are increasing in both energy and strength.

(D) The volcano has erupted several times in recent years, including one time that killed several people.

2 Which BEST explains how the 1980 eruption of Mount St. Helens influenced researchers' study of the volcano?

(A) The 1980 eruption showed researchers what could happen if earthquakes stop occurring under the volcano.

(B) The 1980 eruption made researchers realize that the volcano will collapse if it erupts again.

(C) The 1980 eruption was so devastating that researchers are watching the volcano closely in case it erupts again, to prevent future disasters.

(D) The 1980 eruption convinced researchers that another eruption is unlikely to happen any time soon, and if it does, it will likely be a small eruption.

3 Which is MOST likely the author's purpose in the section "This Type Of Earthquake Activity Is Normal"?

(A) to reduce fears about Mount St. Helens erupting again soon

(B) to provide various forecasts of the next eruption of Mount St. Helens

(C) to explain how magma will recharge and rise up within Mount St. Helens before the volcano erupts again

(D) to suggest that steps should be taken immediately to prepare for the next eruption of Mount St. Helens

4 How do the viewpoints of the scientists quoted in "This Type Of Earthquake Activity Is Normal" compare with the viewpoint of the U.S. Geological Survey (USGS)?

(A) The scientists have the viewpoint that Mount St. Helens might never erupt again, and the USGS disagrees.

(B) The scientists and the USGS share the viewpoint that the next eruption of Mount St. Helens can now be predicted.

(C) The scientists and the USGS share the viewpoint that Mount St. Helens is unlikely to erupt in the near future.

(D) The scientists have the viewpoint that the next eruption of Mount St. Helens will be insignificant, and the USGS disagrees.