

Swarm of Yellowstone earthquakes doesn't pose risk, scientists say

January 7 2009, By Rocky Barker

When you have 400 earthquakes on top of one of the largest supervolcanoes on Earth, people pay attention.

And since the day after Christmas, that's what has happened at Yellowstone National Park. Scientists are seeing what they call a "swarm" of low-intensity earthquakes - the largest since the 1980s. The biggest quake had a magnitude of 3.9, below the level that can cause damage.

But the earthquakes have made worldwide news because the park lies on a giant caldera, the crater of a volcano that scientists say could one day explode and destroy most of North America and freeze the rest of the world under a shroud of ash for up to two years.

Still, the latest earthquakes are nothing to fear, said park geologist Hank Heasler.

Heasler and his colleagues at the University of Utah and the U.S. Geological Survey spent several hours Friday on a conference call comparing notes and sharing their views on the latest geological event atop the largest known volcano in the world.

Yellowstone has several thousand tiny earthquakes a year but this recent swarm is unusual - and geologically speaking, maybe even timely.

The last time Yellowstone erupted 640,000 years ago it spewed 8,000

times the ash and lava that came from Mount St. Helens in 1980. The past two explosive eruptions have come at 600,000-year intervals, so some geologists say the next one is overdue. But there have been 30 relatively minor eruptions since then.

"Looking at the data, currently we don't see any indication of volcanic activity," Heasler said.

Most of the recent earthquakes have centered around Yellowstone Lake, an especially hot and active geothermal region. Five miles below the lake lies a giant magma chamber, which scientists say has bulged upward about 60 feet over the past 50 years.

But the latest earthquakes have not changed things noticeably, Heasler said.

"Scientists don't currently see any indication of uplift," Heasler said.

"We're not seeing a bulge at this time." Based on the observations of Heasler and his colleagues, authorities have kept Yellowstone's volcanic alert level at green, which means they aren't worried yet. The earthquakes hadn't stopped as of Monday.

Yellowstone's volcano sits atop a "hot spot" of molten rock that rises from deep within the Earth. For more than 17 million years, the North American Plate has moved west-southwest over this largely stationary spot, causing volcanic eruptions, including those that formed the Eastern Snake River Plain in Idaho.

Scientists aren't sure what the connection is between earthquake clusters like this and the volcanic activity responsible for Yellowstone's signature features, such as Old Faithful, Mammoth Hot Springs and many of the mud pots and geysers that most visitors associate with the park.

And though the chances of a major eruption at Yellowstone make the headlines, scientists expect the next volcanic eruptions in the park to be non-explosive lava flows. Though these would still be destructive, they likely would be limited to the park and perhaps surrounding areas.

The last earthquake swarm in Yellowstone came in 1985. It lasted several months and the biggest earthquake was magnitude 4.5, Heasler said. So Yellowstone may be due for some modest action before this one is over.

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