

Local & State

MOUNT HOOD, THREE SISTERS, NEWBERRY VOLCANO AND CRATER LAKE

Four of nation's bigger volcanic threats are in Oregon Cascades

■ U.S. Geological Survey study of hazardous volcanoes includes Oregon landmarks

By Stephen Hamway
WesCom News Service

Four of the 18 volcanoes U.S. geologists consider the nation's most threatening are in Oregon, and a couple are in Bend's backyard.

Earlier this week, the U.S. Geological Survey released a study evaluating the threats posed by the 161 active volcanoes across the country according to 24 different factors. The study, which updates a report published in 2005, notes that four Oregon volcanoes — Mount Hood, the Three Sisters (listed as one volcanic system), Newberry Volcano and Crater Lake — rank among the 18 listed by the government agency as posing a "very high threat" of a dangerous eruption.

While none of the volcanoes are in imminent danger of erupting, Seth Moran, scientist-in-charge at the U.S. Geological Survey's Cascades Volcano Observatory in Vancouver, Washington, said the size of Central Oregon's volcanic fields makes them a challenge to monitor, particularly with limited equipment.

"That's a different kind of hazard, a different kind of monitoring challenge," Moran said.

Moran said the report measures the threat posed by a volcano by its proximity to large population centers as well as the amount of volcanic activity present in the area. Kilauea, which sent destructive lava flows across Hawaii's Big Island earlier this year, was named the most-threatening volcano, followed by Mount St. Helens and Mount Rainier in Washington. Mount Hood was Oregon's most-threatening volcano, followed by the Three Sisters, Newberry and Crater Lake.

With the exception of Kilauea, Moran said, most of the changes on the list weren't in response to changes in volcanic activity. Instead, the changes reflect an evolving understanding of how certain volcanoes behave.

One example is Newberry Volcano, a massive shield volcano with a caldera located about 20 miles southeast of Bend. The new report deemed Newberry the 13th-most-threatening volcano in the country, jumping past Crater Lake and other active volcanoes thanks to monitoring work done since the 2005 report. Moran said the additional monitoring revealed many shallow earthquakes that previously hadn't been recorded, suggesting there is activity not far below the surface.

"It's just an example that our scientific understanding of these systems is evolving," Moran said.

While Oregon hasn't seen any recent massive eruptions on a scale of the 1980 eruption of Mount St. Helens in southern Washington, this state has a rich volcanic history, and Central Oregon in particular has seen its landscape shaped by massive volcanic eruptions. Adam Kent, professor at Oregon State University's College of Earth, Ocean, and Atmospheric Sciences, said the convergence of two tectonic plates created the Cascade Mountains and has caused a lot of the volcanic activity in the



U.S. Forest Service photo

An area on the west flank of the Newberry Volcano, outside the national volcanic monument seen here, is no longer in the running to become the site of a federal lab for enhanced geothermal research.

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— Seth Moran, Cascades Volcano Observatory

Pacific Northwest, possibly even accounting for activity at Newberry Volcano.

Black lava flows to the south and west of Bend are a stark reminder of Central Oregon's volcanic history, and parts of the city were built on ancient flows from Newberry Caldera, according to John Ewert, USGS volcanologist and one of the authors of the report. Ewert said ancient flows have been found as far north as the Crooked River.

While Bend is flanked by active and dangerous volcanoes, their geology and their potential impact on the community varies dramatically.

The Three Sisters volcano complex, a group of volcanoes that includes each of the Three Sisters, has several steep, distinct cinder cones. Moran said the complex, which was rated as the seventh-most-threatening in the country, has the potential for an eruption that resembles the one seen at Mount St. Helens, albeit on a more limited basis.

He added that an eruption could blanket Central Oregon with ash, and could send lahars — mixes of snowmelt, lava and other debris that cascade down mountainsides during eruptions — toward Sisters.

Newberry, on the other hand, lacks the steep cinder cones and would likely bring large but slow-traveling lava flows to the surrounding area, similar to those seen during the Kilauea eruption. Moran said these flows move too slowly to harm most people and can damage structures and level forests. However, Kent added the caldera has shown signs of more explosive eruptions in the distant past.

"Newberry is a dual-threat volcano in a way," Kent said.

Volcanoes typically give some sign of an eruption, whether it's through small, localized earthquakes or the ground buckling near a volcano. While Moran said the U.S. Geological Survey has basic monitoring equipment at both volcanoes, the sites could use more instruments. He said the equipment now

at the Three Sisters can tell there's a collection of small earthquakes and may not be able to quickly locate ground deformations, a telltale sign of volcanic activity.

He said Newberry has more equipment. The sheer size of the volcano,

which stretches up toward Smith Rock, makes locating abnormalities a challenge. This hinders scientists, and communities by extension, in responding to possible eruptions.

"Although we have a pretty good reason for believing that we would get some warning, we don't know how much it's going to be," Moran said.



Cherise Kaechele/The (La Grande) Observer

Glenn Casamassa, second from right, the Forest Service's Northwest region forester, visited La Grande on Thursday.

Regional forester hears concerns about forest plan

By Cherise Kaechele
The (La Grande) Observer

A roomful of people surrounded Glenn Casamassa, the new U.S. Forest Service regional forester for Region 6, on Thursday as representatives from multiple Eastern Oregon counties talked about their concerns with the newest Blue Mountain Forest Plan revision.

Casamassa — a longtime Forest Service employee and former supervisor of the Arapaho and Roosevelt national forests and the Pawnee National Grassland in Colorado — works out of Portland.

The Forest Service's Region 6 includes national forests in Oregon and Washington.

A 30-year veteran of the Forest Service, Casamassa will oversee 16 national forests, two national scenic areas, the Crooked River National Grassland in Oregon and two national volcanic monuments, according to the article.

On Thursday, though, he was listening to county commissioners, Rep. Greg Barreto, Sen. Bill Hansell, staff from Boise Cascade and other representatives who raised objections to the Blue Mountain plan.

Also in attendance was Oregon Congressman Greg Walden, who said when the newest revised plan came out, the process came to a halt.

"People didn't feel like they were listened to," Walden said of the revision.

Union County Commissioner Steve McClure said he was frustrated that the plan didn't fix the basic problem — which is the threat of wildfires.

"It doesn't need to be the communities against the Forest Service, but we need to recognize there is a problem," McClure said. "We need to address the issues so we don't spend all our money on forest fires."

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