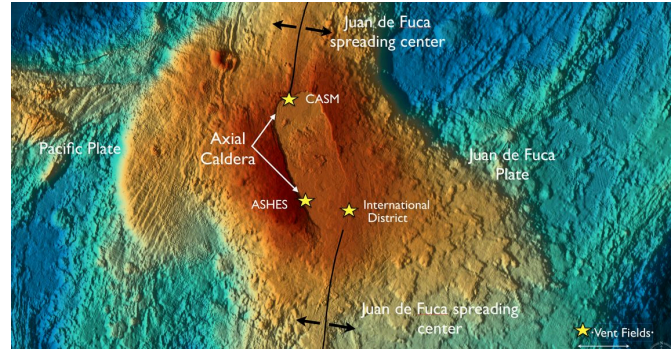


Undersea volcano eruption likely off Oregon coast

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One of the Pacific Ocean’s most active undersea volcanos could erupt before the end of this year, according to a new report from researchers at the University of Washington (UW).

The volcano is known as Axial Seamount. It is 4,900 feet below the surface, centered 300 miles off the Oregon coast and last erupted in 2015.

The report states that scientists are excited about the latest signs from the volcano “because it is giving us a window into some of the most important geological and biological processes on Earth.”

According to Maya Tolstoy, a marine geophysicist and Maggie Walker Dean of the UW College of the Environment, over two-thirds of the Earth’s surface was formed by volcanic eruptions at these mid-ocean ridges.

“So, the volcano is formed by these really fundamental processes that shape our planet,” she said.

The UW College of the Environment is home to one of the world’s largest underwater observatories hosting networks of sensors on the seafloor and throughout the ocean waters. The Ocean Observatories Initiative Regional Cabled Array, which sends real-time data from 150 instruments to shore at the speed of light, spans the Juan de Fuca plate, from the Oregon coast to the summit of Axial Seamount 300 miles offshore.

“This facility has provided unique insights into the dynamics of the ocean and underlying seafloor since 2014 — including high-resolution images and even a live video feed — and when the volcano finally erupts, it will give scientists a front-row seat,” the report states.

The report states that first sign of an eruption at Axial Seamount is a sharp increase in the number of earthquakes around the volcano, caused by magma moving toward the surface.

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Axial Seamount is much too deep and far from shore for people on land to even notice when it erupts,” the report states. “An eruption at Axial Seamount also has nothing to do with seismic activity on land, so Pacific Northwesterners don’t need to worry about this event triggering a major earthquake or tsunami.”

While Axial Seamount does not produce particularly violent eruptions by most standards, the report states that the interaction of hot, molten rock with the frigid waters of the deep ocean inevitably leads to some startling noises on the seafloor.

“When a pocket of seawater gets trapped beneath a lava flow, it heats up and turns to steam,” UW School of Oceanography Marine Geophysicist William Wilcock said. “When that steam finally escapes, it forms a bubble which cools very quickly and collapses, causing a loud implosion that we can pick up with our hydrophones.”

There are two primary factors that scientists look at to determine whether Axial Seamount is ready to erupt: how much the volcano is inflating due to a buildup of magma beneath the surface, and the frequency of earthquakes coming from beneath the seafloor, according to the UW report.

“Scientists know that Axial Seamount erupted in 1998, 2011 and 2015. And thanks to the instruments in the Regional Cabled Array, in 2015 they were able to monitor the eruption live from start to finish for the first time,” the report states. “Now, after more than a decade of observations, they’re ready to refine their methods of predicting eruptions.”

See the full report at:

<https://environment.uw.edu/news/2025/04/the-pacific-northwests-most-active-underwater-volcano-is-getting-ready-to-erupt/>