

Bali Volcano: Contributing to Global Warming, or Global Cooling?

Mount Agung, the active volcano on the island of Bali that has been capturing headlines for the past week, continues to spew huge plumes of ash and gas tens of thousands of feet into the air. The Bali International Airport opened on Wednesday, after being closed on Monday and Tuesday, leaving 60,000 travelers stranded. Various volcano experts are warning that the eruption could become much more explosive.



Professor David Rothery, a volcanologist at the Open University in England, has warned that gas trapped in and under the volcano could cause a huge explosion and pyroclastic (lava) flows if it cannot escape. "It's a matter of whether that gas can escape passively, just by bubbling through the magma and cracks in the volcano," Rothery said, In a television interview with Sky News, "or whether it builds up to such a volume of gas that it blows out explosively and drives a very high column of fragmented ash high into the sky. A big heavy column being driven upwards, that can then collapse down and produce these horrible pyroclastic flows which sweep across the terrain."

Bali, an Indonesian island encompassing a little more than 2,000 square miles and a population of 4.2 million, is located in the Java Sea, where the Indian Ocean, the Pacific Ocean and the South China Sea meet. The island, long a tourist attraction noted for its beautiful beaches and ocean views, has become a celebrity mecca where many of the world's rich and famous have built palatial estates as vacation getaways. The continuous eruption, which began this past Saturday (November 25), has already caused the evacuation of 30,000 residents from the area surrounding Mount Agung, and Indonesia's National Board for Disaster Management is urging another 100,000 locals living in the danger zone to evacuate.

A spokesman for the agency, Sutopo Purwo Nugroho, said on Tuesday there was increasing seismic activity around Mount Agung, indicating another eruption could occur soon. During the night on Monday, "rays of fire" were increasingly observed in the volcano's crater, according to a Facebook post by the disaster agency, and another posting on Tuesday warned of "increasing volcanic activity."

"Mount Agung eruption keeps going.... The possibility that the bigger eruption might happen (is getting) closer. However there is no clear information on how big the intensity (would be). It is nearly impossible to estimate," the <u>official Facebook posting said</u>. The agency maintained a Level 4 alert (the highest level) on Tuesday, mandating no public activities within 10 kilometers of the peak.

Volcanoes and "Global Warming/Climate Change"

What impact, if any, will the continuing Agung eruption and other volcanic activity have on global warming? That is a matter of much debate, with scientific studies pointing to both a cooling and warming effect from the eruptions of the thousands of volcanoes that dot our planet. Major eruptions of land-based volcanoes that send huge clouds of ash high into the upper atmosphere generally are believed to have a cooling effect. The ash particles and droplets of sulfuric acid (which are formed when

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volcanic-spewed sulfur dioxide combines with oxygen in the air) may remain suspended for many months, reflecting sunlight away from Earth, thereby lowering temperatures.

However, there are other considerations that point to a volcanic warming effect, both from the 1,500 or so active terrestrial volcanoes, as well as the far larger number of active undersea volcanoes that have been poorly monitored, and whose impact is not well understood. According to Oregon State University's "Volcano World" website, "The absolute number of volcanoes that exists depends on your definition: active only, active, dormant plus extinct volcanoes? And even if we decide on a definition, nobody has really counted all of the volcanoes, especially the tens of thousands on the sea floor."

"The best guess is 1511 volcanoes have erupted in the last 10,000 years and should be considered active," the OSU entry continues. "This number is from the Smithsonian Institution book 'Volcanoes of the World: Second Edition' compiled by Tom Simkin and Lee Siebert." Before looking at the 1,511 terrestrial volcanoes, it is worth mentioning the "tens of thousands on the sea floor." Tens of thousands! As impressive as that number is, it actually may be an extraordinary undercount. According to a 2007 study by researchers from the University of Cambridge in the UK, there could be about 3 million submarine volcanoes, 39,000 of which rise more than 1000 meters over the sea bed. And new volcanoes are being discovered all the time. This past August, researchers from the University of Edinburgh reported on their discovery of 91 volcanoes underneath Antarctica. These are in addition to the known 47 volcanoes on the surface of Antarctica. Many of the undersea volcanoes are regularly oozing molten lava, as well as CO2, methane, and other gases. In addition there are untold thousands — perhaps millions — of undersea "vents" that are regularly discharging gases, oil, and tar. Last year researchers found hundreds of new vents along the west coast of the United States. "Scientists have found 500 seabed vents bubbling methane into the Pacific Ocean off the United States, roughly doubling the number of known U.S. seeps of the powerful greenhouse gas," an October 19, 2016 Reuters story reported.

"Methane naturally escapes from the sea floor in many places around the world and can stoke global warming if it reaches the atmosphere," the Reuters article continued. "Worldwide, scientists are trying to see if rising ocean temperatures cause more leaks. 'It appears that the entire coast off Washington, Oregon and California is a giant methane seep,' Robert Ballard, who is famed for finding the wreck of the *Titanic* and has now discovered the 500 new seeps, said in a statement. 'The discoveries double to about 1,000 the number of such vents now known to exist along the continental margins of the USA,' the statement said."

Could it be that these undersea volcanoes and seeps are contributing to the supposed crisis of the "melting" of the Antarctic icecap, which has been the subject of numerous media scare stories? (As it turns out, the much ballyhooed Arctic-Antarctic "crises" were/are nothing outside of natural variability and nothing to fly into a tizzy over. See <u>here_</u> and <u>here.</u>)

Is it not worth considering that perhaps the enormous amounts of heat, ash, CO2, SO2, methane, and other gases and debris continuously released by Mother Nature may be having a significant impact on our climate, and may, perhaps even dwarf anthropogenic (man-made) contributions? Many scientists think so, but the powerful climate alarmist lobby scorns and abuses any scientist who dares to break ranks and dissent from the mandated anthropogenic global warming (AGW) "consensus."

Nature's contributions to the climate equation — El Niño, La Niña, the Pacific Decadal Oscillation, the Atlantic Multidecadal Oscillation, <u>Milankovitch Cycles</u>, solar flare activity, <u>lunar and solar tidal</u> <u>cycles</u>, water vapor, clouds, <u>Earth's orbital eccentricity</u>, <u>radioactive decay of the Earth's core</u>, etc. —

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are typically ignored in order to emphasize the human impact. That fits very neatly, of course, with an agenda advanced by those who seek to justify their control over all human activity. As renowned climatologist Dr. Richard Lindzen put it: "Controlling carbon is a bureaucrat's dream. If you control carbon, you control life."

"Climate projections," <u>reports</u> *Geophysical Research Letters*, a journal of the American Geophysical Union (AGU), "typically don't include the effect of volcanic eruptions, as these events are nearly impossible to predict, according to Alan Robock, a climatologist at Rutgers University in New Brunswick, N.J." That leaves a considerable-sized variable out of the model, does it not? As we reported with regard to the 2014 Holuhraun eruption ("Iceland's Volcanic Pollution Dwarfs All of Europe's <u>Human Emissions</u>"), the gases released by a single volcano are nothing to sneeze at. We reported:

"The sulfur dioxide (SO2) emitted from the Holuhraun eruption has reached up to 60,000 tons per day and averaged close to 20,000 tons since it began," notes Pall Stefanson, in a September 25 report for Iceland Review Online. "For comparison, all the SO2 pollution in Europe, from industries, energy production, traffic and house heating, etc., amounts to 14,000 tons per day."

And the Holuhraun eruption, which began in late August, is but one of many active volcanic eruptions that Iceland, the land of fire and ice, has been experiencing lately. A few miles away, Iceland's Bardarbunga volcano is also causing concern. A September 12 report for Iceland Review Online noted that SO2 from the eruption was four times the previous record and that residents were complaining of sore throats, stinging eyes, and headaches from the sulfur pollution.

A major study led by researchers from the University of Edinburgh and published in the journal <u>Science</u> in 2015 presented the case that ocean acidification from massive volcanic eruptions caused the mass extinction known as The Great Dying millions of years ago.

Also in 2015, a surprising study out of Columbia University — a leading voice in the AGW alarmist choir — acknowledged the heretofore ignored influence of volcanoes in the current climate models. "Vast ranges of volcanoes hidden under the oceans are presumed by scientists to be the gentle giants of the planet, oozing lava at slow, steady rates along mid-ocean ridges," a press release from the university's Earth Institute <u>stated</u>. "But a new study shows that they flare up on strikingly regular cycles, ranging from two weeks to 100,000 years — and, that they erupt almost exclusively during the first six months of each year. The pulses — apparently tied to short- and long-term changes in earth's orbit, and to sea levels — may help trigger natural climate swings," the statement continued.

"Scientists have already speculated that volcanic cycles on land emitting large amounts of carbon dioxide might influence climate; but up to now there was no evidence from submarine volcanoes," according to the Columbia release. "The findings suggest that models of earth's natural climate dynamics, and by extension human-influenced climate change, may have to be adjusted. The study appears this week in the journal *Geophysical Research Letters*."

The Columbia University statement notably includes the following comments from Maya Tolstoy, the study's author:

"People have ignored seafloor volcanoes on the idea that their influence is small — but that's because they are assumed to be in a steady state, which they're not," said the study's author, marine geophysicist Maya Tolstoy of Columbia University's Lamont-Doherty Earth Observatory. "They respond to both very large forces, and to very small ones, and that tells us that we need to look at them much more closely." A related study by a separate team this week in the journal



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Science bolsters Tolstoy's case by showing similar long-term patterns of submarine volcanism in an Antarctic region Tolstoy did not study.

As one might expect, the AGW catastrophe chorus is trying to spin a cause-effect scenario that blames man-made CO2 for the apparent increase in volcanic activity (see <u>here</u> and <u>here</u>). And why not? After all, as catalogued by the British website <u>NumbersWatch</u>, the AGW extremists and their media allies have blamed human-caused global warming for hundreds of supposed calamities from acne, AIDS, crime, refugees, and prostitution to piracy, obesity, kidney stones, oyster herpes, crocodile deaths, tigers eating people, sheep changing color, birds shrinking, wars, rioting, the zebra mussel explosion — and much, much more, including volcanic eruptions.

Photo of Mount Agung volcano: AP Images

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