

Hawaiian Vog: Where There's Smoke--There is Something Brewing

September 29 2008, by Mary Anne Simpson



Halema' Uma' u Crater--Kilauea Volcano Credit: USGS

The Kilauea Volcano located on the Big Island of Hawaii is currently registering an Orange Alert which means the volcano is exhibiting a heightened or elevated risk of eruption or is erupting with minor or no volcanic ash emissions. Of particular concern is Halema' Uma' u crater, hvo.wr.usgs.gov/cam3/ and the Pu' u' 'O' o vent hvo.wr.usgs.gov/cam/index.htm located on the Kilauea Volcano.

Sulfur dioxide emissions from this volcano increased substantially to a range of 1200 to 1700 tonnes per day on September 21, 2008. Additionally lava from the Pu' u' 'O' o vent has sent lava flowing into the ocean. According to the U.S. Geological Survey, Hawaiian Volcano Observatory a 4.3 magnitude earthquake was registered in the nearby area of at nearby Ka'ena Point. Since this date the Kilauea Summit has

registered daily earthquake activity in a range of 1.7 to 2.6 magnitude. USGS scientists Bernard Chouet and Phil Dawson have developed modeling tools and analytic methods for evaluating volcanic activity from Italy to Japan and their expertise is being used to evaluate the recent Kilauea Volcano.

Preliminary findings of Chouet and Dawson indicate the VLP (very long period) tremors appear to originate from a rather specific source locations, clustering at sea level or 1 kilometer below the caldera floor. However, at the Northeast corner of Halema' Uma' u the range depth is approximately several hundred meters. The tremor bursts appear to be beneath the Halema' Uma' u flume which opened on March 19, 2008. Per a communication from Phil Dawson, he states, "I am not able to fully convey the amazement that I feel each day as I watch this sequence unfold." Visitors are warned not to venture into the lava deltas because of the possibility of explosions. Moreover, the steam plumes rising after lava enters the ocean are highly acidic and contain glass particles. The local Civil Defense website offers updates on lava flows at www.lavainfo.us . Daily updates of Kilauea Volcano are available at hvo.wr.usgs.gov/ .

The volcanic pollution or Vog is currently under study by medical professionals and the USGS. Vog is sulfur dioxide and is the result of volcanic eruptions. The volcanic air pollution creates a hazy appearance in the otherwise bucolic environment. The main concern of health officials in Hawaii is the effect Vog is having on the respiratory and pulmonary system of its residents and visitors. Currently, health officials have set up Sulfur Dioxide Alerts in effected areas to warn residents. People with respiratory illnesses and the general population are encouraged to reduce physically challenging activities, drink fluids or stay indoors during high Vog conditions.

According to Dr. Elizabeth Tam of the University of Hawaii Medical

School, volcanic air pollution may trigger asthma attacks in susceptible patients. Dr. Tam, preliminary results indicate Vog or volcanic pollution will not cause asthma, it can trigger asthma attacks. Dr. Tam and her colleagues are studying the long term effects of Vog on school children. The longitudinal study began six-years ago and will continue until the particular children in the study reach the age of 18.

Scientists and volcano watchers alike are keeping a watchful eye on the activities around the Kilauea Volcano.

Citation: Hawaiian Vog: Where There's Smoke--There is Something Brewing (2008, September 29) retrieved 9 April 2024 from

<https://phys.org/news/2008-09-hawaiian-vog-smoke-there-brewing.html>

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