

Kilauea volcano

[Science](#), [Geology](#)



Located in the Pacific Ocean, Hawaii and the Hawaiian Islands are the cone-shaped tops of gigantic ocean volcanoes. Located in the southeast region of the Island of Hawaii, Kilauea sits on the flank (or the side) of the active Mauna Loa volcano, and is one of five shield volcanoes that together form the Island of Hawaii. Kilauea is one of the most active volcanoes on Earth, and it is the youngest. Kilauea stands just under 4, 200 feet tall above sea level at its highest point.

The staff of the U. S. Geological Survey at the Hawaiian Volcano Observatory currently lists Kilauea's Volcano Alert Level as watch and its Aviation Color Code as orange. Kilauea is studied and constantly monitored because of its continuous lava flow. Kilauea is a broad shield volcano which is a gently sloping mountain made from a large number of usually very fluid lava flows. It is also locally interbedded with deposits of explosive eruptions.

Eruptions at Kilauea happen mainly either from the summit caldera or along either of two long rift zones (East and Southwest) that extend from the caldera and run approximately parallel to the coastline and extend to the sea on both sides. Rift zones are fractured zones of weakness within the volcano. The Southwest rift zone is very active and has a desert effect. The crater located at this rift is called Pu'u ' O'o; the East rift zone is called the Kupaianaha crater. Steam and sulfur vents can be seen and smelt in different areas on Kilauea.

The surface of Kilauea is about 90% lava flow less than 1, 100 years old, and 70% of the surface is younger than 600 years. The Kilauea summit caldera is about two miles wide and more than three miles long. A caldera is the actual

caving in of the top of the mountain. The summit caldera houses the crater. The high summit of Kilauea is caused by more frequent eruptions than other locations on the volcano. The crater is the main vent inside the caldera, the opening through which lava flows. Eruptions from Kilauea are known for creating volcanic smog (vog).

This smog affects many areas of the Hawaiian Islands, including Oahu and Honolulu whenever winds come out of the south or southeast. The estimated age of the earliest above ground (subaerial) eruptions of Kilauea is between 50, 000-100, 000 years. The last eruption began on January 3, 1983 to the present. During this time, the lava flows have unfortunately caused destruction of nearly 200 houses, resurfaced over 13km of highway with lava, destroyed the National Park visitor center, and a 700 year-old Hawaiian Temple.

It has also added new coastline to the island. There are no signs that the current eruption is slowing or will end anytime soon. Kilauea has little vegetation. Kilauea has the volcano status of Historical. Kilauea has had 61 historical eruptions, not counting the continuous lava-lake activity in the crater. The oldest dated rocks from Kilauea are 23, 000 years old. The Island of Hawaii sits on (almost in the middle of) the Pacific Plate. The Pacific Plate is a giant jigsaw piece of the Earth's crust that is slowly moving in a northwesterly direction.

It moves about four inches a year. There is a basically stationary hot spot deep within the Earth's mantle. Heat from this hot spot makes molten lava and rock (magma) that rises through the Pacific Plate and erupts

continuously on the ocean floor. After thousands of eruptions and over many many years, an island forms a rocky mass above sea level. It is estimated that Kilauea began to form about 300, 000-600, 000 years ago, and has been active ever since. Kilauea rose above the surface of the sea as an island approximately 50, 000-100, 000 years ago.

Through geologic studies of surface exposures and drillhole samples, it is known that Kilauea is made mostly of lava flows. Research over the past few decades shows that Kilauea has its own magma-plumbing system, extending to the surface from more than 60km deep in the Earth. On an average day, Kilauea puts out several hundred thousand cubic yards of lava. It also causes frequent earthquakes, but many of them are small enough that only a few people feel them.

In Hawaiian the word Kilauea means “ spewing” or “ much spreading”, referring to the continuous lava flow. Kilauea is the home of Pele, the Hawaiian fire and volcano goddess. Several special lava formations are named after Pele. Pele’s Tears are small droplets of lava that cool in the air and keep their teardrop shapes. They are jet black in color. Pele’s Hair are thin, brittle strands of volcanic glass that often form during the explosions that occur with a lava flow, usually from lava fountains.

Kilauea Crater is part of the Hawaii Volcanoes National Park. Kilauea is the Earth’s most visited active volcano. Unlike most other active volcanoes, Kilauea is approachable, is world-famous, and has been called the “ drive-up” volcano because of the easy access to many of its areas of volcanic activity, especially the summit caldera. I wanted my landform to be in the

USA! I chose Kilauea because it is in Hawaii, and one of the most active volcanoes in the world. I thought it would be cool to research.