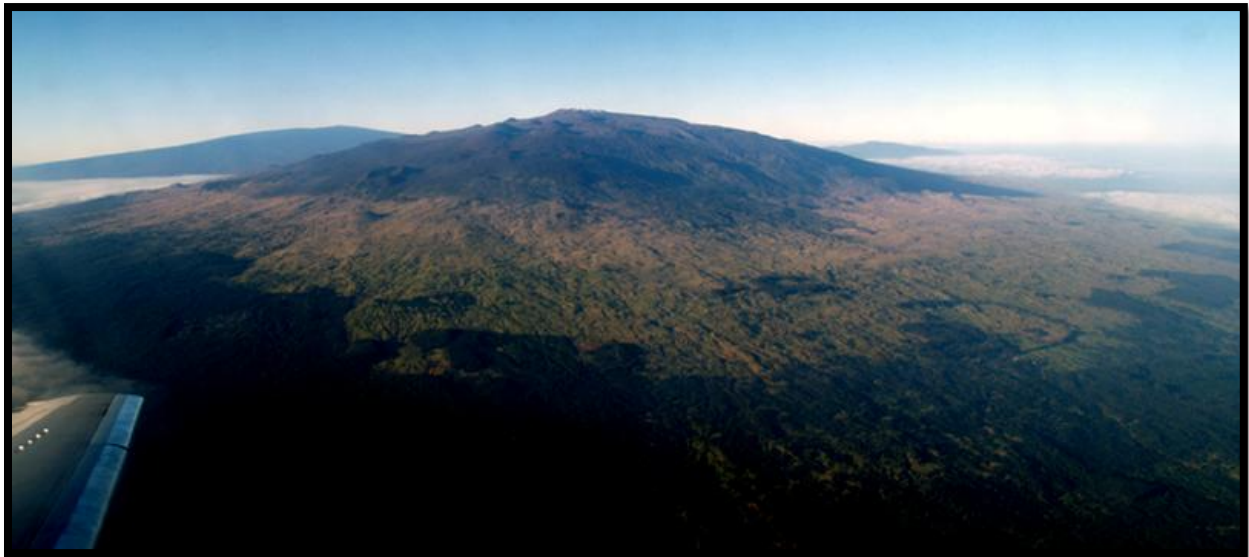


MAUNA LOA

Mauna Loa is one of five volcanoes that form the Island of Hawaii in the U.S. state of Hawai'i in the Pacific Ocean, and the largest on Earth in terms of volume and area covered. It is an active shield volcano, with a volume estimated at approximately 18,000 cubic miles (75,000 km³), although its peak is about 120 feet (37 m) lower than that of its neighbor, Mauna Kea. The Hawaiian name "Mauna Loa" means "Long Mountain". Lava eruptions from Mauna Loa are silica-poor, and very fluid; eruptions tend to be non-explosive and the volcano has relatively shallow slopes.

Mauna Loa has probably been erupting for at least 700,000 years, and may have emerged above sea level about 400,000 years ago. The oldest-known dated rocks are not older than 200,000 years. The volcano's magma comes from the Hawaii hotspot, which has been responsible for the creation of the Hawaiian island chain over tens of millions of years. The slow drift of the Pacific Plate will eventually carry Mauna Loa away from the hotspot within 500,000 to one million years from now, at which point it will become extinct.

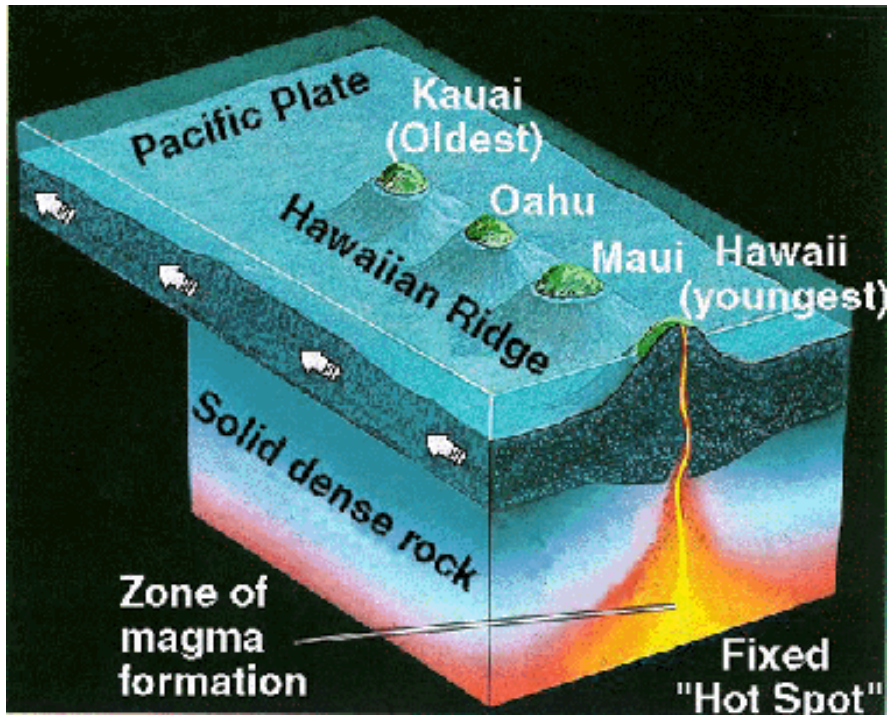
Mauna Loa's most recent eruption occurred from March 24 to April 15, 1984. No recent eruptions of the volcano have caused fatalities, but eruptions in 1926 and 1950 destroyed villages, and the city of Hilo is partly built on lava flows from the late 19th century. Based on the hazards it poses to population centers, Mauna Loa is part of the Decade Volcanoes program, which encourages studies of the world's most dangerous volcanoes.



According to the United States Geological Survey (USGS), Mauna Loa is the largest volcano in the world with its summit reaching 56,000 feet above its submarine base. Although Mauna Loa is one of the most active volcanoes in the world with 33 recorded eruptions, it has not erupted since 1984. That eruption lasted from March 24 through April 15. According to the USGS, the earliest sub-aerial eruptions occurred approximately 400,000 years ago. The oldest dated lava rock formations are from between 100,000 and 200,000 years old, making Mauna Loa a true historical sight to see.



Mauna Loa is one of five volcanoes that form the Big Island of Hawaii. Mauna Loa means "long mountain," an appropriate description since it makes up half of the Big Island. It does not spew out lava in violent eruptions, but rather, oozes out lava from cracks and fissures. Because of their "non-violent" nature, both Mauna Loa and Kilauea are "tourist-friendly" volcanoes. There are numerous geological formations to explore such as pit craters, caves and lava tubes. Along Mauna Loa Scenic Road, take a one-mile hike through Kipuka Puauolu, a bird park in an old forest featuring indigenous plants and trees.



Eventually, the volcano moves so far off the hotspot that magma is unable to be supplied; erosion takes over as the dominant geological process. This erosion is both gradual and catastrophic. Hawaiian lavas are very permeable. Many are vesicular, and lava tubes, clinker layers, and flow boundaries all provide easy pathways for percolating water. For this reason, even in many of the wettest areas of Mauna Loa and Kilauea, erosion is minimal.

The western slope of Mauna Loa is very steep, and has been the source of many giant landslides.



While the population at risk from Mauna Loa eruptions is small (about 75,000), the growth of Hawaii's tourist industry has produced large developments along the coast (more than \$2 billion has been invested in new construction since the last eruption in 1984). The indifference of modern populations and governmental agencies to volcanic hazards also greatly increases risk. Whereas the Polynesian discoverers of Hawaii developed a respect for the destructive potential of Mauna Loa and learned to coexist with volcanic activity over millenia, recent immigrants tend to deny the potential for disaster, and regard eruptive activity as potentially "entertaining."



Mauna Loa has also caused earthquake damage. The USGS explains, "As magma enters and inflates Mauna Loa, the volcano becomes unstable, setting the stage for large earthquakes." These earthquakes can also trigger landslides and tsunamis. An erupting Mauna Loa triggered a massive earthquake on April 2, 1868, with an estimated magnitude of 8.0, causing a landslide and a tidal wave that took many lives and destroyed property. One account of the 1868 quake describes an avalanche instantly burying "ten houses, 31 souls and 500 head of cattle." At the same time, according to the account, "the sea rose 20 feet along the southern shore of the island . . . 108 houses were destroyed and 46 people drowned, making a loss of 118 houses and 77 lives in that district, during this one hour." Mauna Loa's volcanic interactions with sister volcano Kilauea triggered another major earthquake in 1973, resulting in financial losses estimated at \$7 million, though no lives were lost.

Mauna Loa has also caused damage from volcanic air pollution. Volcanic smog related to Mauna Loa's volcanic activity has negatively impacted human health, destroyed crops and contaminated drinking water. Active volcanoes like Mauna Loa can create volcanic smog, abbreviated as "vog," which forms when volcanic gases such as sulfur dioxide combine with elements in the atmosphere like moisture and oxygen. Vog can cause respiratory problems for people living downwind of the volcano, reduce air and road traffic visibility, and kill crops. It also results in acid rain, which has negative effects on the environment. Even though Mauna Loa itself has not erupted since 1984, it is an active volcano and has indirectly caused volcanic air pollution since its last major eruption.