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## Lava Tube Formation: A Cave Diver's Perspective

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### **Abstract**

Volcanic geomorphologists have studied and written about lava tubes that are relatively dry and above sea level. There are, throughout the world, many lava tubes that were formed when sea level was as much as 100 meters lower than present. They were subsequently flooded as sea level rose at the end of the ice age.

Exploration of the submerged section of Jamos del Agua in Lanzarote, Canary Islands, has added over three kilometers of cave to the seven kilometers of historically significant dry passage. Diveable passage terminates in a lava sump at a depth of 70 meters below sea level. Hawaiians named the small circular pond on the south point of Hawaii Lua o Palahemo. Exploration has shown that this pond is the flooded skylight of a lava tube that extends southward beneath the shore line of Hawaii and continues under the Pacific Ocean for several hundred meters. Passage heights range from one meter to over 25 meters. Diveable passage terminates in a white calcareous sand choke. These two examples illustrate that cave diving researchers have the ability to gather data on submerged lava tubes. The additional 40% of tube length available for study in the Canary Islands and the discovery of a large tube at the southern extent of the southwest rift zone of Mauna Loa have the potential to contribute toward a better understanding of the genesis and morphology of lava tubes.

The literature on lava tube formation is compared with field observations from several submerged tubes with emphasis on the Lua o Palahemo tube.