

# The Formation of the Hawaiian Islands

by Liana Mahoney

Hawaii is one of the fifty states of the United States of America. It is unique, however, in that it is not part of the U.S. mainland. Hawaii is located in the Pacific Ocean. It is an archipelago, which means that it's made up of a chain of islands. While many U.S. states have islands, Hawaii is the only one that is made up entirely of islands.



With its warm temperatures and beautiful beaches, the Hawaiian Islands are a popular place for vacation. You might even call the islands a tourist "hotspot." But these islands are also known for a different kind of hotspot - one that comes from deep within the earth. This hotspot helps to explain how the Hawaiian Islands were formed.

Scientists who study the earth, called geologists, believe that the Hawaiian Islands were formed around thirty million years ago. The islands began forming over an area where magma (hot, liquid rock) rose from deep within the earth and onto the floor of the Pacific Ocean. This area is called a hotspot. The magma cooled and hardened into a volcanic rock, called lava. Overtime, as magma continued to ooze from the earth, the lava built up. Layer after layer accumulated over the hotspot. The layers of lava grew higher and higher, eventually forming a volcano.

Have you ever seen a conveyor belt, like the ones used at grocery stores to move your items toward the cashier? The surface upon which your items are sitting moves under them and takes them to a new place. Now, can you imagine a huge conveyor belt

that slowly relocates a volcano? This is similar to what happened to the volcanoes that formed at the hotspot in the Pacific Ocean. In this case, a large area of the earth's crust, called the Pacific Plate, acted as the conveyor belt. At the same time that the volcanoes were being formed, the ocean floor of the Pacific Plate gradually moved and shifted toward the northwest. This movement of the ocean floor pulled the first volcano away from the hotspot. Magma continued to ooze from the hotspot, cooled and hardened, and formed a new volcano above it. This process repeated itself over and over for millions of years, creating a string of volcanoes that each, in turn, appeared above the surface of the ocean and created what we now call the Hawaiian Islands.

It's very difficult to imagine that millions of years ago, Hawaii as we know it now did not even exist! Geologists know that the Hawaiian Islands continue to gradually change, even today. This means that millions of years into the future, Hawaii may look entirely different than it does now. The Hawaiian Islands could even disappear completely over time. Of course, these types of extreme changes would take millions of years. So, in the meantime, let's continue to enjoy the "hotspot" of Hawaii just as it is - a gorgeous archipelago with an interesting history and one of the most beautiful places on earth!

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1) Why are the Hawaiian Islands unique?

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2) What are the two different contexts the word "hotspot" is used in the passage?

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3) What is the extreme future change the writer refers to in the last paragraph?

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4) Why are the Pacific plates compared to the conveyor belt?

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5) What does the author encourage readers to do in the final paragraph?

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