

Long Valley Caldera

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About Long Valley Caldera

- It is located in the Eastern Sierra Nevada Mountains of California, United states of America (USA).
- It is a dormant supervolcano.
- It was formed by a super-eruption about 760,000 years ago that blasted 140 cubic miles of magma, covering much of east-central California in hot ash that was blown as far away as present-day Nebraska.
- It has been unleashing earthquake swarms on a regular basis since 1978, raising concerns that it might be at risk of erupting.

What is Caldera?

- It is a depression created after a volcano releases the majority of the contents of its magma chamber in an explosive eruption.

- Without any structural support below, the land around the erupting volcanic vent or vents collapses inwardly, creating the bowl-shaped caldera.
 - A caldera-causing eruption is the most devastating type of volcanic eruption.
 - These are formed by the inward collapse of a volcano.
 - Calderas may have parts of their sides missing because land collapses unevenly.
 - Types of Calderas
 - Crater-Lake Calderas: It is a result from the collapse of a stratovolcano after a Plinian eruption, the most explosive type of volcanic eruption.
 - Plinian eruptions release massive amounts of lava, volcanic ash, and rocks.
 - Shield Volcano Calderas: These calderas do not result from singular explosive eruptions.
 - They instead subside in gradual stages, due to the episodic release of lava. This less-explosive release of lava, known as lava fountaining, is characteristic of shield volcanoes.
 - As a shield volcano periodically releases lava, it produces nested or terraced depressions rather than a large bowl-shaped caldera.
 - It is composed of dormant and active shield volcanoes.
 - Resurgent Calderas: These are the largest volcanic structures on Earth.
 - They are not associated with one particular volcano, but instead result from the widespread collapse of vast magma chambers.
 - This caldera collapse is produced by incredibly destructive eruptions known as pyroclastic sheet flows, the likes of which have not occurred in historic times.
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Q1) What is a volcano?

It is a geological feature on the Earth's surface that is characterized by the eruption of molten rock, ash, and gases from beneath the Earth's crust. Volcanoes are a result of the Earth's dynamic processes, primarily driven by the movement of tectonic plates.

Source: [California's supervolcano shows signs of activity, over 2,000 earthquakes rumble beneath valley](#)

Source: <https://vajiramandravi.com/current-affairs/ong-valley-caldera/>

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