

Volcanic Hazards are phenomena arising from volcanic activity that pose potential threat to people or property. Below is a list of volcanic hazards common in Philippine active volcanoes.

1 PYROCLASTIC FLOW

Fast turbulent mass of fragmental volcanic material (ash and rocks) mixed with hot gases that flows downslope at very high speed (>60Kph).

- The high temperature of a pyroclastic flow can burn everything along its path. Deposits of pyroclastic flows can bury areas within river valleys and plains.



2 LAVA FLOW

Stream-like flow of incandescent, molten rock material erupted from a volcano.

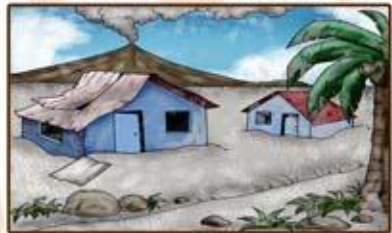
- Areas buried by lava flows will not be usable for a long time, because lava solidifies into massive rock.



3 ASHFALL OR TEPHRA FALL

Shower of fine-to-coarse-grained volcanic material and other airborne products of a volcanic eruption. Ashfall distribution or dispersal is dependent on prevailing wind direction.

- The fine ash particles, when inhaled, can cause respiratory problems. Thick heavy ash accumulations can cause roofs to collapse. Ashfall is particularly hazardous to aircraft because it can cause jet engine failure.



4 LAHAR

Rapidly flowing thick mixture of volcanic material and water, usually generated along river channels by extreme rainfall.

- Lahar deposits can bury large areas under volcanic debris several meters thick.



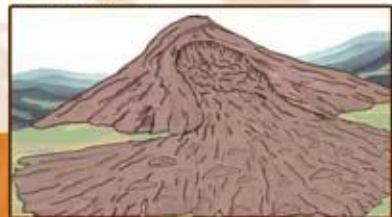
5 VOLCANIC GASES

Gases released to the atmosphere in the form of water vapor, hydrogen sulfide, sulfur dioxide, carbon monoxide, hydrogen chloride, and hydrogen fluoride.

- There are toxic gases emitted by volcanoes that can be harmful to health.

7 DEBRIS AVALANCHE OR VOLCANIC LANDSLIDE

A massive collapse of a huge portion of a volcano, usually triggered by an earthquake or volcanic eruption.



6 SECONDARY EXPLOSIONS

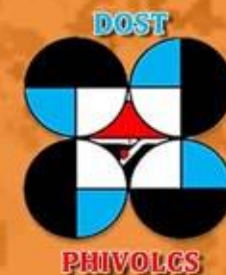
Non-eruption explosive events generated when ground water comes in contact with still hot pyroclastic flow deposits at the slope of a volcano and converted to steam.

8 TSUNAMI OR SEICHE

Waves or wave trains that are generated by sudden displacement of water during volcanic eruptions. These could also be generated during undersea eruptions or by debris avalanches.

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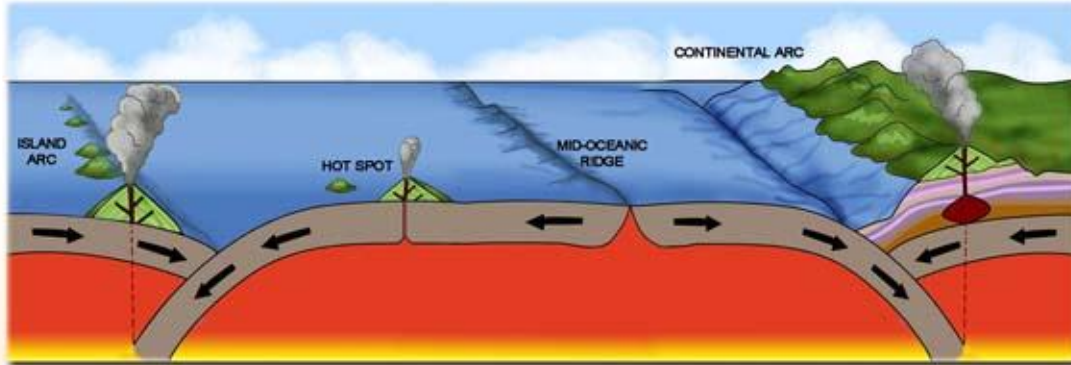
VOLCANOES AND VOLCANIC HAZARDS



What is a volcano?

A volcano is a hill, mountain or fissure from which molten or hot rocks with gaseous materials are ejected. The term also applies to a crater formed by removal of pre-existing materials, or hill or mountain formed by accumulation of ejected materials.

Where are volcanoes formed?



Volcanoes typically form near the margins of tectonic plates, or the moving fragments of the earth's crust and upper mantle. Where they converge, the heavier tectonic plate plunges or "subducts" beneath the lighter overlying plate generating magma erupted through the crust as "island arc" or "continental arc" volcanoes. Where they diverge, tectonic plates form a rift zone through which magma is erupted to form "mid-oceanic ridge" volcanoes. Some volcanoes are formed by magma that literally shoots up from the mantle through the crust to form "hot spot" volcanoes.

Types of volcanoes

There are different types of volcanoes based on the form of their edifices, which is controlled by the type of eruption a volcano is capable of and the chemical composition of magma erupted. Some of the general types of volcanoes are:

a. Monogenetic cones

(tuff rings/cones, cinder cones, maars)

Low symmetrical accumulations of cinder (scoria) and/or tuff (ash). These volcanoes are associated with low silica or basaltic magma, usually formed during just one eruption.

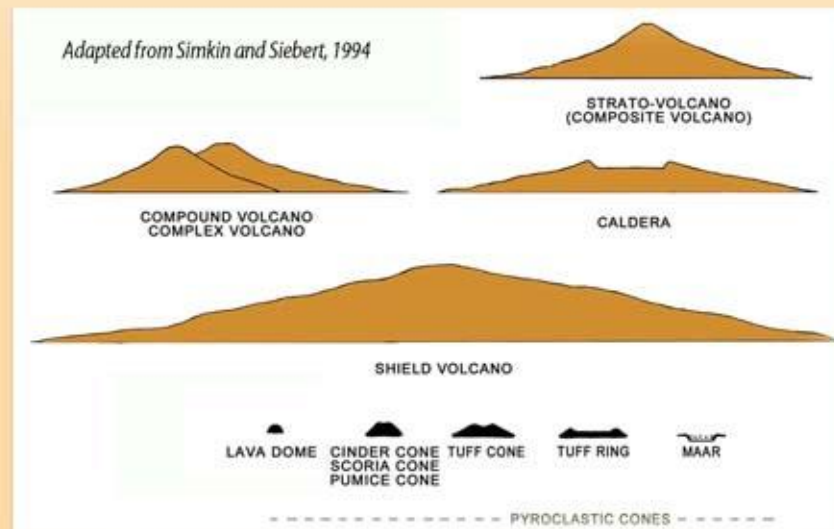
b. Lava domes

Mound-shaped volcanoes formed by repeated, slow extrusion of viscous magma. Domes are associated with low-to high-silica magma.

e.g. Hibok-Hibok Volcano

c. Stratovolcanoes

Cone-shaped volcanoes having one or several summit craters, and formed by repeated alternate deposition of lava and pyroclastics. Stratovolcanoes are usually formed by intermediate silica or andesitic magma. *e.g. Mayon Volcano*



d. Shield volcanoes

Gentle-sloped but large diameter volcanoes that resemble the convex side of a shield. Shield volcanoes are the largest in the world and typically form island volcanoes, such as the Hawaiian islands. They are formed by frequent, long-period lava eruptions in rift zones and mantle hot spots, and are associated with low silica or basaltic magma.

e. Calderas

Large volcanic edifices typically composed of several volcanic centers around a central ≥ 2 km-wide crater. Calderas are formed by highly explosive eruptions in between long periods of dormancy, and are typically associated with high silica or rhyolitic magma.

e.g. Taal Caldera