

Fact sheet 3: Volcanoes

What is a volcano?

New Zealand is situated on the 'Ring of Fire', a geographic belt encircling the Pacific Ocean and containing about 90% of the earth's volcanoes. There are six active volcanic regions in New Zealand, five in the North Island and one in the northern offshore islands.

Volcanoes come in different shapes and sizes. There are three main types found in New Zealand:

- *cone* volcanoes such as Mounts Ruapehu, Taranaki and Ngauruhoe
- volcanic *fields* such as the ones found in the Auckland area
- *calderas* – large depressions formed by huge explosions, such as Lakes Taupo and Rotorua.

Volcanoes erupt when pressure builds up inside the earth and forces molten rock (magma) towards the surface. Volcanoes usually have short active periods, separated by longer dormant periods. Even extinct volcanoes are capable of coming to life again.

The type of eruption varies according to the amount of dissolved gases in the magma (which determines the explosiveness) and the silica content (which determines the runniness). Some eruptions are explosive, blowing out great volumes of rocks and molten material. Other volcanoes erupt in flows, pouring out clouds of hot gas mixed with small particles, or streams of liquid lava.

Those living in volcanic regions are at risk from ash, debris and lava flows. For example, the eruption of Mount Tarawera in 1886 killed an estimated 153 people. If there is a crater lake or torrential rain, water can mix with volcanic debris to form a swiftly moving avalanche of mud called a *lahar*, like the one that swept off Mount Ruapehu in 1953 and caused the deaths of 151 people in the Tangiwai railway disaster.

It is therefore important to know what to do before, during and after a volcanic eruption.

What do we do before a volcanic eruption?

- Know where active volcanoes are and whether they are likely to affect you.

- Talk with your family about an emergency plan and what you will need at home.
- Talk to your family about an evacuation plan – where to go and how to get there.

What do we do during a volcanic eruption?

- Listen to the radio for instructions.
- Stay indoors – keep windows and doors shut. Bring your pets indoors if you can.
- Save water in your bath and other containers at an early stage, as the water supply may become polluted.
- If outdoors, find shelter.
- If told to leave, cover your face and mouth, wear a dust mask and goggles if you can, and take your essential emergency survival items.
- Do not go sightseeing.
- Take your outer layer of clothing off before entering a building – volcanic ash is difficult to get rid of.

What do we do after a volcanic eruption?

- If in a safe place, stay put.
- Listen to the radio for information.
- Return home only when told.

