

## The geology of Mount Taranaki/Egmont



### The igneous rocks of Mount Taranaki and their origin.

Mount Taranaki is made up of an igneous rock called andesite. Andesite is a fine-grained volcanic rock that is found in stratovolcanic form volcanoes. These volcanoes have steep sides and look like how volcanoes are drawn.

Andesite is a mixture rock made where a subducting plate dips under a continental plate. For Mount Taranaki the subducting plate is the Pacific oceanic plate moving in a westerly direction and it dips under the Australian continental plate. As the Pacific plate moves westward it sinks under the Australian plate and as it sinks the rock melts as the temperature rises. The rock type forming on the subducting plate is andesite. This andesite migrates along the Egmont Fault and erupts to the surface at Mount Taranaki. Many of the volcanoes in the North Island erupt andesite that has been formed by the subducting plate.

Andesitic volcanoes produce lava that is fairly viscous and does not travel far. The maximum lava flow on Mount Taranaki is about 15 km long. Andesitic volcanoes are quite high and have steep sides because of the thick lava. When the volcano is not erupting lava it erupts ash deposits so the mountain is layered with ash layers and lava flows. The ash deposits are very weak. So the key shape of Mount Taranaki is a step sided volcano. (1)

### Lahars as an erosional force that helps shape Mount Taranaki.

Mount Taranaki is famous for its lahars. Much of the landscape around the volcano is the result of lahars. Lahars are where the glacier on the mountain top is melted and the water rushes down the mountain slope It forms steep gullies on its way to the sea. Lahars form during an eruption and are a mixture of ash, water and rocks. They move at high speeds and will affect transport. (2) Lahars are a real concern for future eruptions and since Mount

Taranaki could erupt at any time in the future. Damage from lahars is a major concern. They can travel up to 40 km from the vent area and end up in the sea.