# TWO DISTINCT VOLCANOES

Did you know there are volcanoes in the Waitaki Whitestone Geopark?

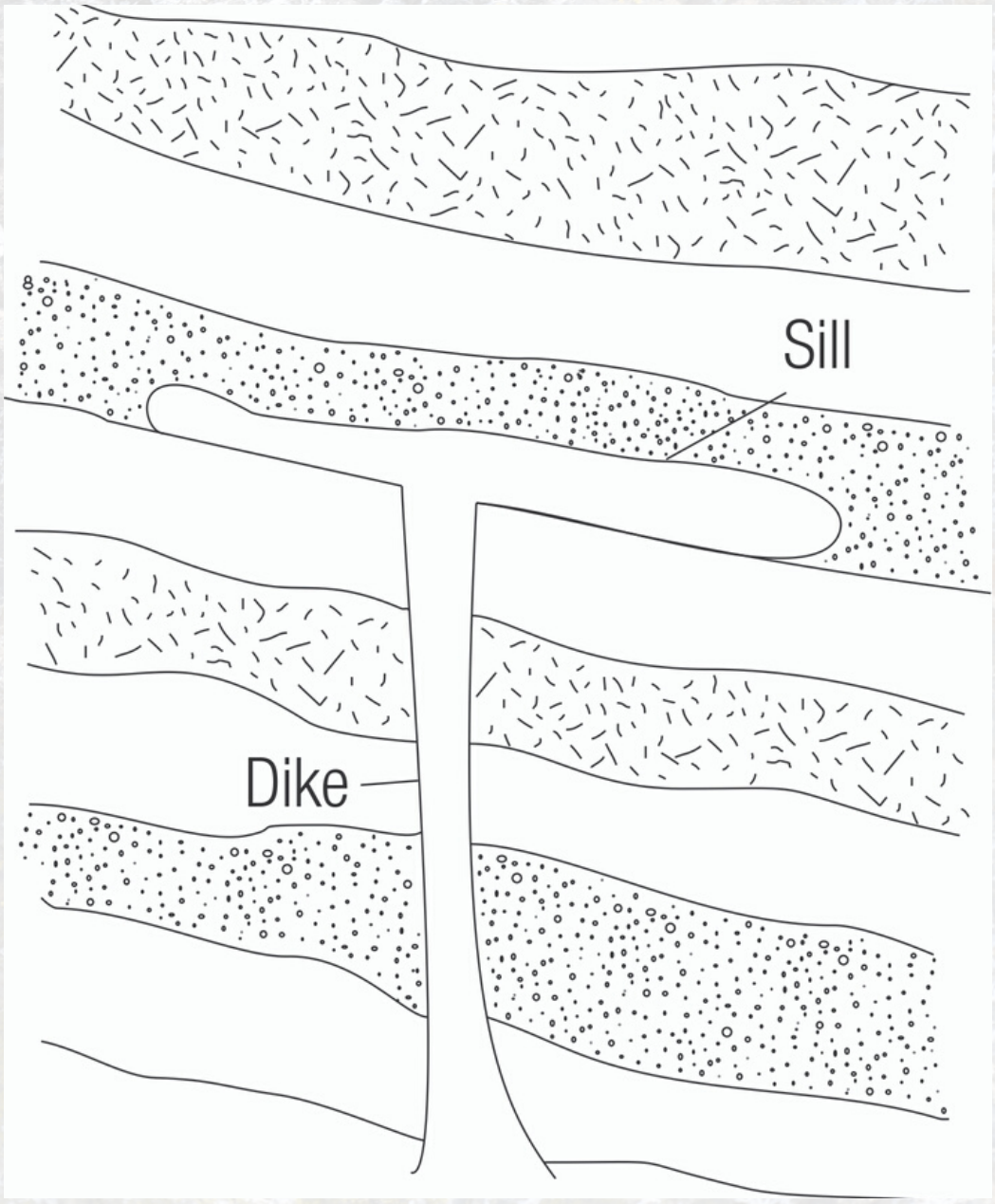
These volcanoes are very old and have not erupted for millions of years. Some of these volcanoes started life under the sea. An example of this is **Cape Wanbrow**. As time went on and there were more eruptions from the volcanic vent. The volcano built up layers of material and the cone grew bigger and taller until it was high above the shoreline.

Another volcano in the Geopark is **Puketapu** at Palmerston. You can walk to the top of this very old volcano for amazing views!

Of course, we have other volcanoes here too and they have not been included in this list. Volcanoes are fascinating to study and there has been University research carried out on some of the ancient volcanic activity within the Geopark. If you happen to see a landform you think could be a volcano send us a picture, including the location and we will get back to you with an answer!

**Dike (dyke)** – Sometimes magma doesn't flow out of a main vent of a volcano but cross cuts older material. This is called a dike (dyke). You can see an example of this at the Enfield dikes– this is on the Vanished World Trail.

**Sill** – Where the magma hardens under the surface but in the same orientation as the surrounding material this is called a sill. An example of this is the Tokarahi Sill. You pass this on the Vanished World Trail. Note - there is no car parking and no public access to this site.



# OTHER VOLCANIC GEOSITES IN THE GEOPARK

We have many other features within the Geopark that have been formed by volcanic activity. Some of these are:

- Hutchesons Quarry
- Oamaru limestone dikes
- Makatukutuki (Old Rifle Butts)
- Kakaunui River (Kakanui) Mouth
- Bridge Point
- Moeraki Peninsula
- Katiki


Oamaru limestone dike


Moeraki Peninsula


Makatukutuki


Katiki

# VOLCANIC ROCK USES

A lot of volcanic rock is very hard.  You can see it's use in early Oamaru buildings – often building footings are made from volcanic rock and the upper part of the building is the softer limestone! Many features like walls and bridges are also made of volcanic rock.  Have you ever noticed the materials these are made from and wondered where it came from? Often it was not transported far between source and end us. Look around and see what you can discover!  If you come across a wall or a bridge and are not sure what it's made from make a few observations... Here's something you may find helpful:

- Volcanic
  - Dark colour
  - Often has sparkly minerals or fragments of other rock
  - Very hard

- Limestone
  - Light colour
  - Often made from one rock type (doesn't have other rock fragments)
  - Soft

Bridge at the Oamaru Public Gardens

Of course, because it's nature – there are some exceptions – this is where experience counts!

Check out our "becoming a rock detective" reference sheet to help you identify rocks you come across!