



How were the Marlborough Sounds made?

Fact

- The Marlborough Sounds were made because of Tectonic Downwarping. Although that sounds like something from a sci-fi movie it really means this:
- Millions of years ago the land that is now the Marlborough Sounds was a fairly normal looking area with hills and valleys.
- But very slowly, over thousands of years the tectonic plate that the Marlborough Sounds sits on moved northward and began to sink downwards.
- As the land sank lower the sea came in flooding the valleys and turning them into the waterways, we now call the Marlborough Sounds.

Do you know

- The tectonic plate the Marlborough Sounds sits on is called the Pacific Plate.
- The Pacific Plate continues to move slowly Northward and sink downwards at a rate of a few millimetres a year.
- The tectonic plate that Wellington sits on is called the Indo-Australian Plate and it is rising as the Pacific Plate sinks below it.
- Because the Indo-Australian Plate is rising places around Wellington that used to be under water thousands of years ago are now high and dry. Scientists believe that the rise in William Street in Petone used to be a beach.
- A Maori Legend has it that the Marlborough Sounds got this way because the whole of the South Island is the waka (canoe) of Aoraki and it ran aground on a reef and the prow of the waka (the front bit) got smashed up on the rocks making the Marlborough Sounds.

Experiments you can do

Make a miniature Marlborough Sounds

What you need:

A shallow plastic container

Clay

Water

What you do:

Have a look at a map of the Marlborough Sounds to get the general idea of what it looks like, then shape the clay into hills and valleys in the plastic container. This was what the Sounds looked like before it slowly sank into the water.

Gently pour water into the plastic container to show how the water rose up in the valleys as the land slowly sank. The water doesn't really change the shape of the valleys or hills it just covers the valleys.

This happened in the Marlborough Sounds over thousands of years.

Other Investigations

See if you can find out how the Milford Sound was made. Have a look at Milford Sound on a map. Which tectonic plate will it be on? (The fact sheet called Earthquakes might help you answer that one.)

If you can find a map with the tectonic plates marked on it have a look at the line where the two plates meet in NZ. What interesting land formations are there along the line that the two plates meet?

Jokes

What kind of sound do the Marlborough Sounds make?

Wet ones