

Moeraki boulders

Digging deeper...

You can find mudstone concretions formed in the same way as the Moeraki boulders all over New Zealand. The thing that makes the Moeraki boulders so special is their almost perfect spherical shape. Because the environment they were created in was very still with few disruptions, the sediments were allowed to form and solidify evenly around the solid core.

Local lingo

The name 'Kaihinaki' is the Māori name given to the food baskets washed ashore at Moeraki and turned to stone.

X marks the spot

From Dunedin, travel north on State Highway 1 for 65km until you reach the sign for the township of Moeraki. Follow on the highway a little further to locate Kaihinaki Beach where the boulders are situated.

Kaihinaki Beach and its large eerily spherical boulders form a major attraction near the Moeraki township, on the northern coast of Otago. The boulders are large spherical shaped mudstone concretions that lie in the surf on the beach. They have origins that can be explained both geologically and through Māori mythology.

Geologically, the Moeraki boulders began forming around 60 million years ago on the floor of the ocean. They were formed as a result of shells and other marine material being compressed under layers of sediment. As the weight of the sediment grew, water was squeezed out, leaving calcium carbonate behind to crystallise around the larger shell fragments. As more water was squeezed out, sediments concreted around the crystallised shell fragments, until after millions of years, the boulders reached the size they are today. Eventually, the mudstone containing these concretions was raised up out of the ocean to form part of the Otago coastline. From here erosion wore away the surrounding mudstone, allowing the boulders to fall down to the beach below. This will continue, as will the slow movement of the boulders back into the sea.

One version of Māori mythology around the Moeraki boulders suggests that the canoe Araiteuru, a great vessel of the Māori people, was travelling down the east coast of the South Island carrying gourds, kumara and eel traps. An immense storm blew up and drove the canoe on to the Tokatai reef, spilling its cargo onto the beach. The gourds, kumara, and eel traps turned to stone, and remain on the shore as Moeraki boulders or kaihinaki.



A Moeraki boulder at low tide



Kaihinaki Beach from above

