



WAITAKI  
**WHITESTONE**  
ASPIRING GLOBAL  
**GEOPARK**  
AOTEAROA NEW ZEALAND

ASPIRING UNESCO GLOBAL GEOPARK  
APPLICATION 2019

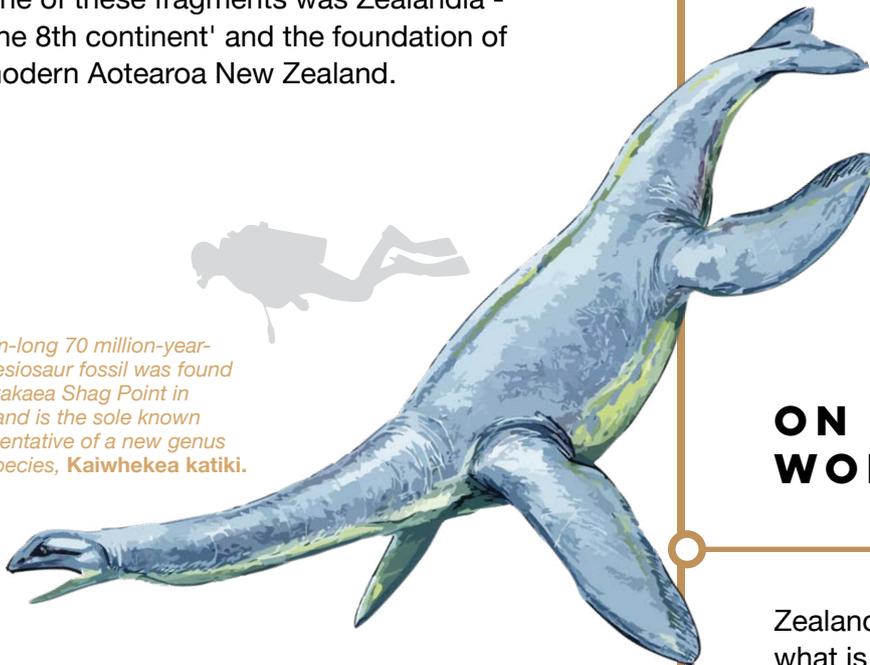
SUPPLEMENTARY **ANNEX 7**  
OUR STORY, OUR PEOPLE

## OUR STORY BEGINS...

...with Gondwana, a southern supercontinent that broke apart into new lands near the end of the age of dinosaurs. One of these fragments was Zealandia - 'the 8th continent' and the foundation of modern Aotearoa New Zealand.



*A 6.5m-long 70 million-year-old plesiosaur fossil was found at Matakaea Shag Point in 1982 and is the sole known representative of a new genus and species, **Kaiweheke katiki**.*



## ON A VANISHED WORLD

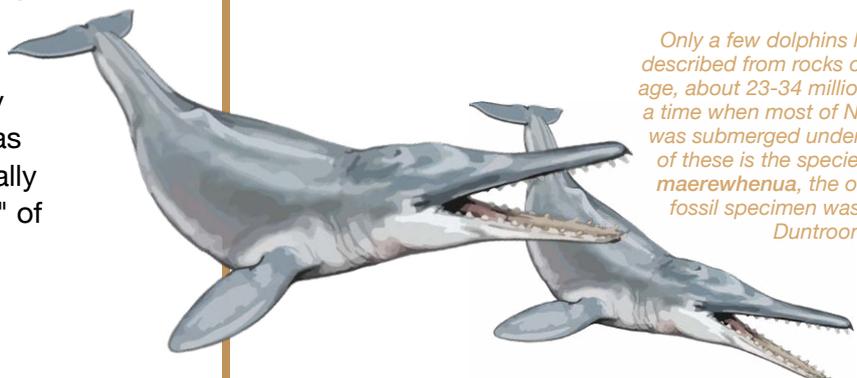


Zealandia drifted from Gondwana into what is now the Pacific Ocean, carrying with it some ancient lineages of flora and fauna that have survived to the present. Plesiosaurs patrolled the shores. Dinosaurs - originally here - have gone, but kauri and beech forests, and wrens and tuataras, are amongst the survivors on modern Aotearoa.

As Zealandia drifted, it was stretched and thinned by geological forces, so that it cooled and submerged. Wide shallow seas surrounded low islands. Volcanoes erupted at weaknesses in the earth's crust, with activity ongoing today. Rich marine faunas were fossilised in limestone.

## IN THE VALLEY OF THE WHALES

Let's look at the time of islands and shallow seas, some 25-30 million years ago. The Waitaki Valley was under a sea, full of life. Shark-toothed Dolphins swam in large shallow bays supplied by nutrient-rich waters. Marine life included plants and animals, large and small, soft or with skeletons. Their remains broke down after death to form white limey sand on the seafloor. As the sand was buried over time, it hardened, gradually forming limestone - the "Whitestone" of our region.



*Only a few dolphins have been described from rocks of Oligocene age, about 23-34 million years ago, a time when most of New Zealand was submerged underwater. One of these is the species **Waipatia maerewhenua**, the only reported fossil specimen was found near Duntroon.*



*This Kairuku penguin was about 1.3 m tall when standing on land, so it would be about ¾ of an average male's height, and a 5 year old child would be ¾ of the penguin's height (scary!).*



## A PENGUIN PARADISE

Diverse birds thrived on the mountains and plains, and in the grasslands and forests of Zealandia, just before humans arrived. Flightless birds include the kiwi, moa and adzebill. Flying birds ranged from tiny wrens to the mountain dwelling parrot, the kea, and the giant Haast's Eagle. Our pre-human shores were a penguin paradise, home to the Kairuku penguin, as tall as a man.

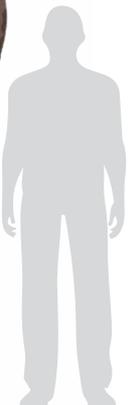
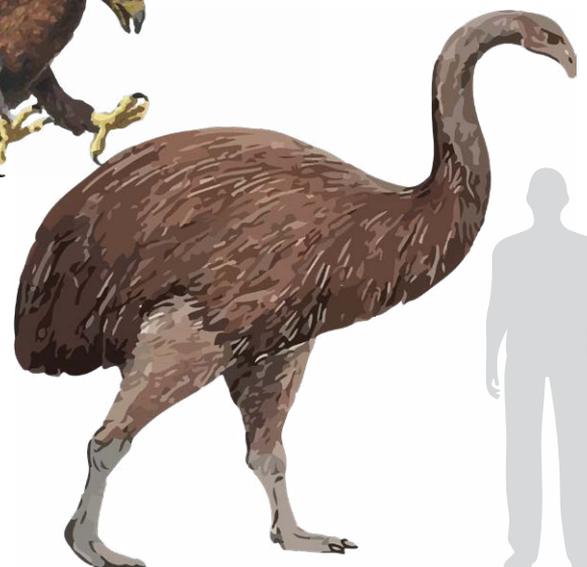
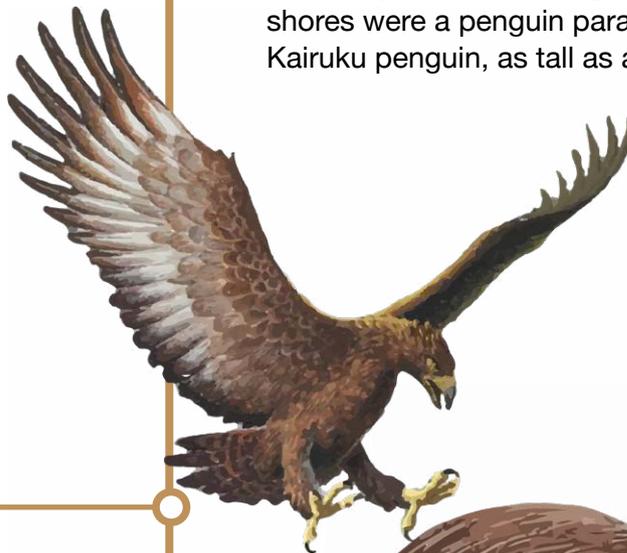
## FORMED BY FIRE & ICE

From around 45 million years ago, an active plate boundary developed, late in the history of Zealandia. The stunning Southern Alps rose, growing as fast as fingernails. In the last 2 million years, southern glaciers carved the majestic wilderness of Fiordland.

More recently, this limestone with its history of fossils, was rapidly forced to the surface by the movement of the Pacific and Australian tectonic plates. Uplift and erosion have formed outcrops of rock in which we can see the fossil evidence of the past.

## A LAND OF MOA HUNTERS

The arrival of humans to our region over 500 years ago was to change the landscape forever. Our earliest settlers arrived on a landscape where enormous Haast's eagles preyed upon moa, towering flightless birds. The Waitaki river mouth was the location of one of the largest ancient Māori settlements in New Zealand with evidence of extensive moa hunting and moa ovens.





## ALONG AN ANCIENT SUPER HIGHWAY

The mighty Waitaki River provided a natural route for local Māori as they travelled back and forth between the East and West coasts of the Te Waipounamu (South Island) leaving a Rock Art legacy on the limestone.



## VICTORIAN MARVELS

Diatomite is one of Waitaki's prehistoric jewels. Formed 35 million years ago when the area was under the sea, these deposits contain microscopic fossilised organisms. In the late 1800s, Victorian era scientists and enthusiasts would extract the world famous Ōamaru diatoms and arrange them into exquisite displays on glass slides - miniature artworks that could only be seen under a microscope.



## THE RICHEST EARTH

The next wave of settlers from across the globe were enticed by the promise of gold in the East Otago hills. Settlers also found fertile alluvial flatlands and pockets of rich volcanic soil, a land naturally suited to agriculture because vast areas were treeless and little clearing was required. Wheat initially brought prosperity to the region and the world's first frozen meat industry followed.

Photo: Top right © Josh Dooley

## A CITY OF WHITESTONE

To get products to overseas markets required a town and a port. So grew Ōamaru – a unique Victorian town full of grand neo-classical limestone buildings. This was truly a Whitestone City in its heyday. Why does this tiny town have so many grand limestone buildings? The choice was simple. There were few trees and the abundant limestone was easy to cut and shape and proved to be a durable building material.



## A GEOLOGICAL WONDERLAND

The Waitaki region has diverse geology - It is not all limestone! Ōamaru town is built on a long-extinct volcano. The Moeraki Boulders are massive rock spheres eroding from a coastal outcrop. At Ōmārama, there are the eroding bad-lands of "Clay Cliffs" while near Duntroon are the huge limestone hummocks of "Elephant Rocks". Many interesting and varying geological features form a "trail" for you to see and explore.

## FOSSILISED FINDS

There are fossils in the limestone and other rocks. The challenge is to find them! Fossils have been extracted and examined by scientists to help understand the origins of modern species. Other important fossils now bear names from the local area. "In situ" fossils – whales in the rock - can be seen at Anatini and Earthquakes. These are stunning unique geological sites that take the viewer's imagination back through deep time.



## A STORY WITHOUT AN END...

...the opportunities are there, and like the fossils, they are waiting to be discovered.

Our Logo Story



Moeraki / Katiki boulders

geometric, crystalline shape



Waitaki braided river / sedimentary layers

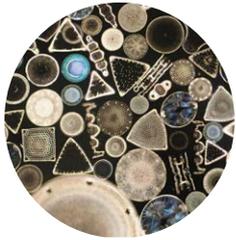


Alps to ocean



fossils of whales / plesiosaurs embedded in limestone - taniwha? influences from Takiroa Maori rock art

diatoms



WAITAKI  
WHITESTONE  
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solid, geometric, architectural font

link between Victorian times - slide arranging & modern photography science/geology meets culture & human artistic endeavour

colours of Waitaki







# DIATOMS

## Ōamaru's geological claim to fame

The Waitaki is world famous for its diatoms, extracted from rich diatomite deposits that once covered ancient sea floors. Diatoms are microscopic, unicellular organisms. The little “jewels” found in diatomite are actually very small, clear silica shells, a natural glass, that each individual diatom created while alive.

Victorian era fascination with the collection, mounting and study of diatoms grew in a time of “parlour microscopy” as popular entertainment. Diatom enthusiasts' output ranged from amazing works of scientific value, to purely artistic endeavours, with hundreds of diatoms arranged into complex geometric patterns. Ōamaru exhibition slides are highly sought after today by collectors.

One such enthusiast, Thomas Forrester (1838-1907) was the architect behind many of the ornate limestone buildings in Ōamaru and was the first curator of the North Otago Museum. He was a keen amateur scientist with a passion for geology. In 1865 Thomas Forrester drew the first geological survey map of New Zealand.

The continuing cultural fascination with the interaction between art and science could be seen in the Forrester Gallery's recent photographic exhibition, "Wayne Barrar; The Glass Archive", featuring the North Otago Museum's Victorian diatom slide collection.

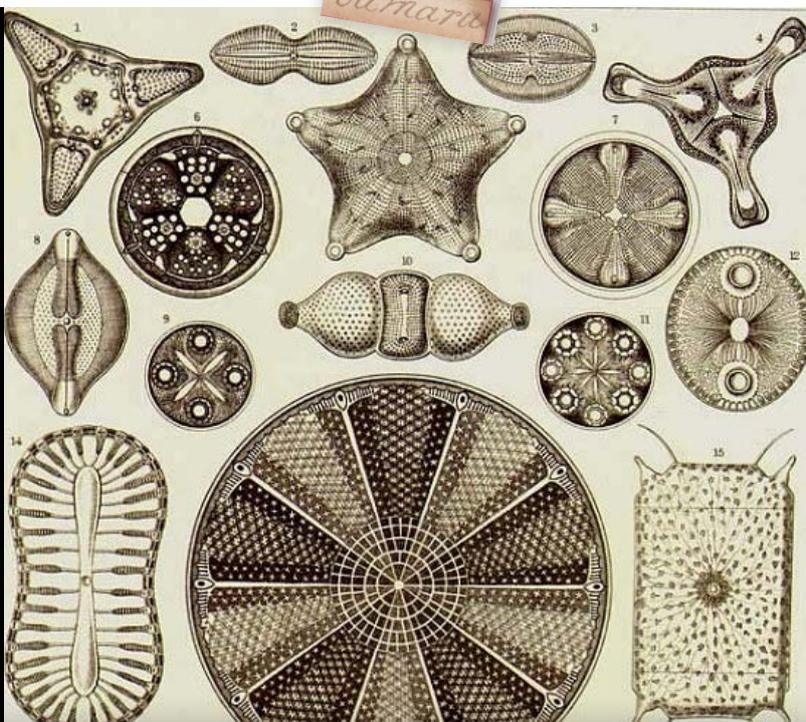
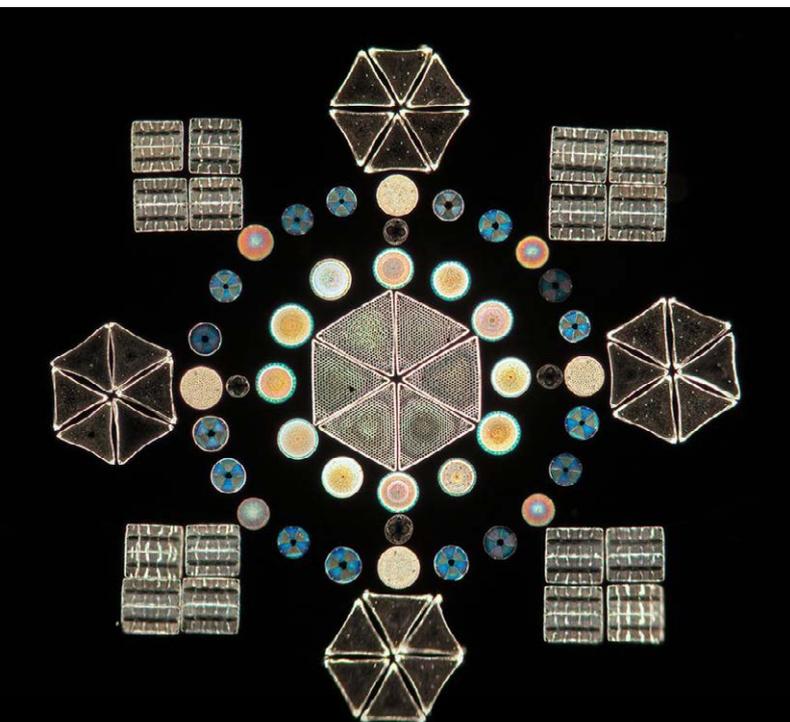


Thomas Forrester at his microscope



Victorian era diatom exhibition slide and illustrations

Photo previous page: © Wayne Barrar Arranged diatoms. Exhibition mount by J. D. Möller, c.1880.





## WHITESTONE CHEESE

Artisan Food Producer

Whitestone Cheese was founded in 1987. Whitestone Cheese's are named after places in North Otago, to reflect the regional nature of their products; including Moeraki Bay Blue and Lindis Pass Brie (named after the mountain pass that marks the starting point of the Waitaki River catchment). The milk used in making Whitestone cheese is sourced locally from cows, sheep and goats that graze on Waitaki grasslands.

[www.whitestonecheese.com](http://www.whitestonecheese.com)

## FLEURS PLACE

Restaurant

Fleurs Place is a world-renowned restaurant on the waterfront at the old jetty in Moeraki Village. Its international fame rests on their serving fresh fish straight from the local fishing boats, and other delicacies from the southern waters, such as Titi (Muttonbird). Established on an early whaling station site, it is built from gathered collectables and demolition materials from all over New Zealand. Most of the vegetables served come from small organic and heritage growers around the district.

[www.fleursplace.com](http://www.fleursplace.com)



## TOTARA ESTATE

Heritage New Zealand Historic Landmark

New Zealand is said to be founded on the sheep's back, and Totara Estate is central to this history. Situated south of Ōamaru, this historic farm (originally 15,000 acres), was the birthplace of New Zealand's billion dollar frozen meat industry. Explore with self guided tours or with knowledgeable guides, enjoy farmhouse teas and meet early NZ sheep breeds. Nearby, the historic Clarks Mill houses a rare collection of roller milling machinery, restored to operating condition by a team of dedicated volunteers. Visitors can experience the machinery grinding into action.

[www.heritage.org.nz/places/places-to-visit/otago-region/totara-estate](http://www.heritage.org.nz/places/places-to-visit/otago-region/totara-estate)



## RIVERSTONE KITCHEN

Restaurant

A world-famous restaurant in rural Ōamaru with an extensive, rambling kitchen garden and orchards, and a commitment to sourcing as much local produce as possible. Changing regularly, the Riverstone menu, created by internationally renowned chef Bevan Smith, reflects the seasons of the Waitaki and utilises the finest ingredients at their peak.

[www.riverstonekitchen.co.nz](http://www.riverstonekitchen.co.nz)

## WHITESTONE CITY

Heritage Experience

Set in an original grain store that was built in 1882, and located within New Zealand's most complete streetscape of Victorian era commercial buildings, Whitestone City is a central heritage hub. Fitted out in the style of a colonial town, where activities, displays, merchants, and an array of people in costume provide a glimpse of what the street would have been like in the town's early days. Live displays, video imaging and interaction immerse visitors in a living, breathing past.

[www.whitestonecity.com](http://www.whitestonecity.com)



## ŌAMARU STONE SYMPOSIUM

Event

The Ōamaru Stone Symposium is a bi-annual event providing a forum for sculptors to discuss issues and share carving experiences while also demonstrating the incredible versatility and beauty of the whitestone that forms the soul of the Waitaki district. It has been run in conjunction with the Waitaki Arts Festival or the Victorian Heritage Festival since 1995, bringing sculptors, from beginner groups to master craftspeople to Ōamaru to to carve Ōamaru whitestone into a wide variety of sculptures, holding public demonstrations and stonecarving workshops for children and adults.





## VERTICAL VENTURES

### Adventure Tourism

Vertical Ventures offers great experiences for rock climbing enthusiasts. There are atmospheric cliffs and white sands at coastal climbing venues a short journey away. Bouldering is offered at Elephant Rocks - an amazing setting with the backdrop of the Mt Domett in the St Marys Mountain Range. Vertical Ventures caters for beginners, providing professional instructors, and can also assist in sorting transportation and equipment hire for experienced rock climbers.

[www.verticalventures.co.nz](http://www.verticalventures.co.nz)

Photo © Vertical Ventures

## ŌAMARU ORGANICS

### Grower

Ōamaru Organics is one of the oldest and largest organic growers in the South Island and the region's only grower of many brassica and leafy crops. Nigel Clark has been involved with this chemical-free near-30 hectares for 20 years and supplies organics shops in Queenstown, Wanaka, Ōamaru and Dunedin seasonally with beetroot, broccoli, broccoflower, cabbage, fennel, kale, lettuce, onions, pak choi, pumpkin, radish, spinach, yams, zucchini and a range of potatoes. The land the farm lies on boasts the same limestone bedrock that famously sweetens produce grown in the Waitaki Whitestone Geopark.



## IAN ANDERSEN

### Limestone Sculptor

Ian Andersen is an internationally recognised limestone sculptor who carves blocks of Ōamaru whitestone into intricate artworks.

Many of his sculptures have ended up in homes all over the world. He works from his gallery and open workshop in Harbour and Tyne streets in the Historic Victorian Precinct of Ōamaru.

All the work in the gallery is designed and hand crafted using traditional tools and methods.

[www.ianandersensculptor.co.nz](http://www.ianandersensculptor.co.nz)



## FORRESTER GALLERY, NORTH OTAGO MUSEUM & WAITAKI DISTRICT ARCHIVE

These cultural facilities are housed in spectacular limestone heritage buildings listed with Heritage NZ. The Museum collections reflect the history of the district from the earliest times through fossil and geology collections, vertebrate collections, artefacts from the first settlers to Aotearoa and later waves of settlement. The Archive holds settlement records, extensive oral histories, records of scientific research, and historical photographic collections. The Gallery holds a collection relating to place and identity that records and explores connections to natural sites within the geopark.

[www.culturewaitaki.org.nz](http://www.culturewaitaki.org.nz)

## WAITAKI VALLEY WINEGROWERS ASSOCIATION

### Winemaking & Winery Tours

The unique terroir of the Waitaki Valley combines the coastal breezes of the South Pacific with the dry rain shadow cast by the Southern Alps. Typically the region enjoys hot, dry summers, cold winters and long dry autumns. These climatic characteristics overlay the complex geology of the Waitakian Limestones to produce distinctive wines highly reflective of their origin.

[www.waitakiwine.co.nz](http://www.waitakiwine.co.nz)



## ŌAMARU FARMERS' MARKET

### Community Market

Ōamaru Farmers' Market is open every Sunday in the historic Victorian Precinct. Here visitors can meet the growers, farmers and producers of the best seasonal produce our region has to offer. The market supports small-scale and organic farming. Stalls include Raw Earth Jersey Benne potatoes from Totara, tomatoes grown in the volcanic soil of the Kakanui, Palmerston asparagus from Shag River, and famous Ōamaru Brussels Sprouts. The market is run by a Trust and offers space for local community groups and charities to fundraise.

[www.oamarufarmersmarket.co.nz](http://www.oamarufarmersmarket.co.nz)



## ŌAMARU'S VICTORIAN PRECINCT

### Heritage Precinct

A grand Victorian streetscape carved in distinctive local stone and built on the bounty of wool and grain. Under the management of the Whitestone Civic Trust, the heritage limestone buildings of the 1800s have been restored by local stonemasons and master craftspeople. The buildings are now filled with small businesses including the NZ Whisky Company, the Victorian Wardrobe (preserving clothing styles from the 1800s), glass artists, textile makers, painters and potters.

[www.victorianoamaru.co.nz](http://www.victorianoamaru.co.nz)

## ŌAMARU BLUE PENGUIN COLONY

### Tourist Attraction and Wildlife Reserve

The Ōamaru Blue Penguin Colony belongs to the people of Ōamaru. The facility is owned by the Local Government Authority, the Waitaki District Council, and managed by Tourism Waitaki. The colony began when a small number of blue penguins began nesting in a former rock quarry area at the edge of Ōamaru Harbour in the early 1990s. Today, it is Ōamaru's largest tourist attraction, with over 75,000 visitors per year, coming from all over the world. At peak season, there are over 130 breeding pairs in the colony and an additional 130 breeding pairs in a special wildlife reserve nearby.

[www.penguins.co.nz](http://www.penguins.co.nz)



Photo © Ōamaru Blue Penguin Colony



## NICOL'S BLACKSMITH SHOP

### Traditional Craft

Nicol's Blacksmith Shop can be found in the small inland rural town of Duntroon, which is located in the centre of "Whitestone Country", along the Waitaki River. Basic ironworking courses for beginners are offered throughout the year.

The skills of early blacksmiths were widely used in farming and transport in the development of this district. This historic building is classified *Category I* by Heritage New Zealand and is managed by a Charitable Trust and staffed by volunteers, including over 10 volunteer blacksmiths.



## McLEAN & CO.

Traditional Craft

Rod and Sue McLean create ethically produced hand woven and stitched textile products using heritage looms. McLean & Co. specialise in weaving short runs of up to 200 metres of traditionally inspired, limited edition tartan and tweed fabric using locally sourced NZ wool and alpaca fibre. They have lovingly restored a c1918 Hattersley Domestic Weaving System and are committed to contribute artistically, socially and economically to their local and regional community.

[www.mcleanandco.nz](http://www.mcleanandco.nz)

## NETWORK WAITAKI VICTORIAN FETE

Event

This yearly event takes place at the culmination of Victorian Heritage Celebrations - a week-long annual festival celebrating the European heritage of Ōamaru. Visitors and locals can take a step back in time and experience the look and feel of the Victorian era in the heart of Ōamaru's Historic Precinct. Attractions include limestone sawing competitions, penny farthing races and over 100 stalls, including artisan foods and traditional crafts.

[www.victorianoamaru.co.nz/fete](http://www.victorianoamaru.co.nz/fete)



## PEN-Y-BRYN LODGE

Accommodation

Pen-y-bryn Lodge was built as a private residence in 1889 by the famed architectural firm of Forrester & Lemon for local businessman John Bulleid and his wife. Pen-y-bryn is Welsh for "Top of the Hill" and indeed the house sits atop South Hill in Ōamaru. Reputed to be the largest single-storey timber dwelling in Australasia, the house has kept true to its Victorian heritage and today offers guests the perfect combination of old world elegance and modern amenities.

[www.penybryn.co.nz](http://www.penybryn.co.nz)

Photo © Pen-y-bryn Lodge, Ōamaru



## HELIVENTURES NZ

### Scenic Tours

Heliventures NZ Ltd was established in 2009 and has provided a professional commercial and agricultural aerial service since 2011. Craig and Nicki McMillan operate Heliventures from the Ōamaru Airport.

Scenic 'geocopter' flights depart from the Ōamaru Harbor heli-pad and follow coastal or valley routes to take in our unique geology and geosites from the air. Also offer link-ups to 'heli-biking' and braided river jetboat tours, with stops at some of Waitaki's favourite restaurants.

[www.heliventuresnz.com](http://www.heliventuresnz.com)

## GLIDE ŌMĀRAMA

### Adventure Tourism

Glide Ōmārama is a family run Soaring School, home to some of the worlds most experienced mountain flying instructors. The South Island of New Zealand, with Ōmārama approximately in the centre, produces some of the world's best wave flying as well as astonishing ridge, thermal and convergence soaring amidst the spectacular and dramatic mountains of the Southern Alps where the visibility is often in excess of 400 kms.

Soar in silence over lakes, rivers, glaciers, fault lines and mountain ranges, to appreciate the beauty and scale of Waitaki's geology.

[www.glideomarama.com](http://www.glideomarama.com)



## BRAIDED RIVER JETBOATING

### Adventure Tourism

With Braided River Jet Boating you'll experience a genuine kiwi jet boating experience. A passionate small business run by people who love to jet boat and share the joy of exploring our beautiful rivers, taking you to places that the locals go and sharing a few stories along the way.

'Bridge to Sea' tours take in the ocean power and fresh sea air on one hand and the peace and tranquility of the Waitaki Lagoon on the other. See shags, spur-winged plovers, geese, gulls, pied stilts, blue herons, mallard and paradise ducks, and possibly even seals and porpoises who visit the coastline and lower Waitaki River.

[www.braidedriverjetboating.co.nz](http://www.braidedriverjetboating.co.nz)

# THE ALPS 2 OCEAN CYCLE TRAIL

## Wheeling through the geopark

The Alps 2 Ocean Cycle Trail is a world-famous cycle route that travels through some of the main landscapes of the proposed Global Geopark. It is the longest continuous cycle trail in New Zealand, traversing over 300km. The trail travels from New Zealand's highest mountain, Aoraki, through Waitaki, past great lakes and rivers (and evidence of formative geological processes), to finish at Ōamaru Harbour on the Pacific Ocean.

Suitable for all ages, the trail is an easy to moderate grade, and offers a mix of on and off-road trails.

There are 7 trail counters dotted along the track and in the last 12 months they have counted a total of 114,000 trail users, who are a mix of pedestrians and cyclists. While it's difficult to tell how many of these are cycling the whole trail, or how many are local recreational users, it does show that numbers have substantially risen from the year before.

The trail goes past a number of geosites including the unique rock formations of Elephant Rocks and the Anatini Fossil site, where whale bones are exposed in the local limestone formation.

[www.alps2ocean.com](http://www.alps2ocean.com)



*The Alps 2 Ocean 'finish line' at Friendly Bay, Ōamaru Harbour*



*Photo © Verticle Ventures*

