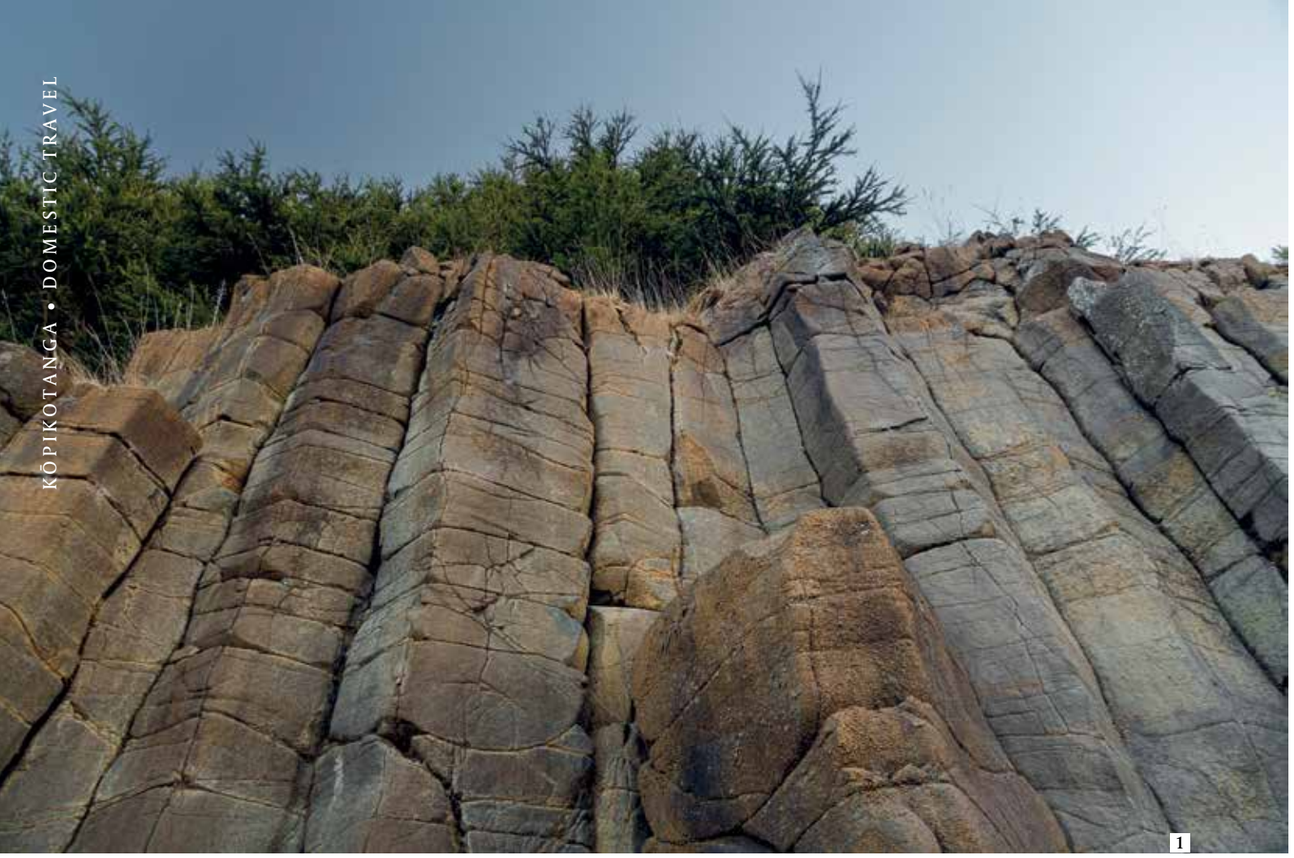
ROCK STARS

WORDS: ANNA DUNLOP | *IMAGERY:* MIKE HEYDON

The Waitaki District's spectacular geological heritage has been recognised globally following decades of combined community effort

Waitaki Whitestone Geopark Trust's Helen Jansen and Mike Gray wander among the magnificent Elephant Rocks.



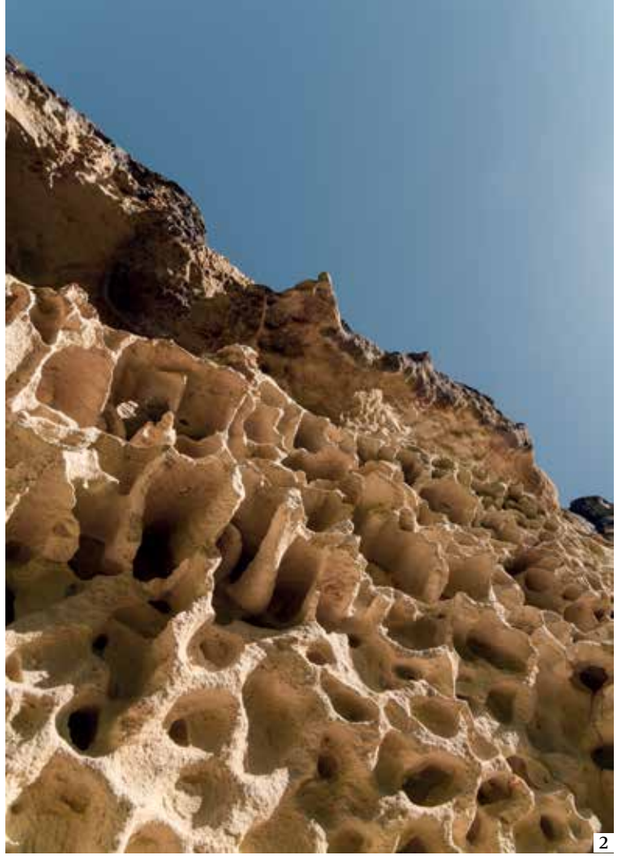
1

Following the formation of the Vanished World Society in the early 2000s, the Vanished World Centre and Trail were established, showcasing whale, dolphin and penguin fossils and featuring 15 locations of geological interest, from Moeraki to Oamaru and inland to the Waitaki Valley. (Over the years, the community has also worked hard to restore the Duntroon Wetlands, as well as the jail and Nicol's Blacksmith Shop, a Category 1 historic place). Mike is one of 15 founding members of Vanished World and still runs guided tours of the district.

Back then, the geopark movement was still in its infancy, but Helen believes that even in those early days, Professor Ewan Fordyce knew the district's potential.

"He saw it could be a geopark because it tells the story of the evolution of the seafloor's sedimentary layer," she says.

"They all came together and wanted to tell the story of the hidden treasure under their land"



2

Surrounded by rushing waves and half buried in the sand of Koekohe Beach on the South Island's east coast lie Te Kaihinaki Moeraki Boulders. These mysterious spherical 'stones' may look like an alien landscape, but they are in fact concretions – masses of mineral and sediment that formed around a nucleus (such as a shell or pebble) within seafloor deposits. Coastal erosion over millennia has gradually exposed the boulders, and there are likely to be more, deep in the cliffs, waiting to be discovered.

The Moeraki Boulders are just a taste of the geological wonderland that is the Waitaki District, which covers more than 7200 square kilometres from the east coast to the base of the Southern Alps. Karst formations, volcanic sequences and glacial valleys are evidence of the tectonic forces that moulded the area as Zealandia broke away from the supercontinent of Gondwana and became submerged in the ocean for millions of years.

Marine life thrived, then died and sank to the seafloor, eventually forming the limestone and ancient marine fossils for which Waitaki is famous. The uniqueness of the area's geology was officially recognised in May, when it became Australasia's first UNESCO Global Geopark.

UNESCO defines global geoparks as "single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development". Their purpose is to use this geological heritage 'in connection with all other aspects of the area's natural and cultural heritage to enhance awareness and understanding of key issues facing society, such as using earth's resources sustainably, mitigating the effects of climate change and reducing natural hazard-related risks'. There are 195 global geoparks in 48 countries, but the Waitaki Whitestone UNESCO Global Geopark is one of just 19 in the Southern Hemisphere.

Helen Jansen, Chair of the Waitaki Whitestone Geopark Trust (WWGT), says the district's designation as a global geopark is the culmination of a decades-long journey that started in the 1990s with paleontologist Professor Ewan Fordyce and the community of Duntroon. The professor, then working at the University of Otago's Geology Department, had discovered marine fossils on various farmers' and landowners' properties in the Duntroon area, and invited these enthusiastic individuals to form a local network.

"They all came together and wanted to tell the story of the hidden treasure under their land," says Helen.

Ewan's discoveries coincided with the threat of closure of Duntroon's school, and this creep of rural decline was the catalyst for the community to act to save its town.

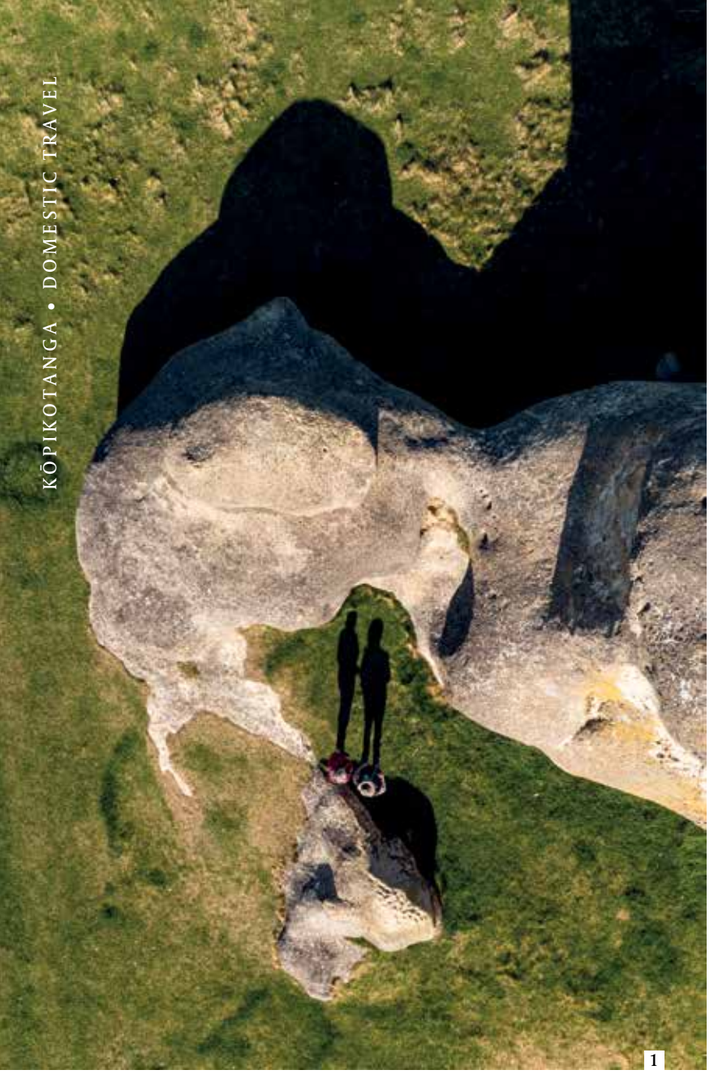
"The locals looked at what the town's assets were," says Mike Gray, an advisory trustee of WWGT and a former member of the Duntroon community. "The area's geology was the obvious answer."

1. Limestone rock formations seen from Danseys Pass at Tokarahi.

2. These honeycomb-like lattice formations at Anatini are the result of wind weathering the rock.

3. The Valley of the Whales is named after the marine fossils discovered there.

3



1

“Global geoparks attract visitors who want to experience the natural environment through an educational and sustainability lens”

1. Elephant Rocks are the weathered remains of an ancient seabed.

2. Māori believe Te Kaihinaki Moeraki Boulders were formed from the wreck of the *Ārai-te-uru* waka.

“There was everything from enormous whales to turtles and ammonites – it was a place that was teeming with life for tens of millions of years.”

WWGT was established in 2018, with representation from the Waitaki District Council, the Vanished World Society and Te Rūnanga o Moeraki, and in 2019 the trust submitted its application to become a geopark to the New Zealand Commission of UNESCO. Then came Covid-19, causing a significant delay that allowed WWGT to re-evaluate its strategic direction.

“Originally we were very focused on the economic and tourism benefits, but the delay caused by the pandemic enabled us to refocus our strategy on the community,” says Helen.

“Now we’re concentrating on connecting with what’s going on in the local district and supporting community-led activities.”

The trust also formed a closer partnership with Te Rūnanga o Moeraki to better reflect te ao Māori in the co-design of the geopark.

Finally, in July 2022 WWGT welcomed two UNESCO evaluators to the Waitaki District, and on 23 May the Waitaki Whitestone UNESCO Global Geopark became official. Christine Whybrew, Director Southern Region at Heritage New Zealand Pouhere Taonga, says it was a significant milestone.

“The emotion expressed by many at the launch demonstrated the community’s long commitment to this project and the collective efforts to recognise Waitaki’s geological and cultural heritage.”

Liz Longworth, Chair of the New Zealand Commission for UNESCO, adds that the geopark demonstrates what is possible when passionate people come together in a community – including “iwi who are willing to share their knowledge and traditions; scientists who persevere; a district council that actively backs a vision; and disparate supporters and funders who are prepared to step up and make it happen”.

The geopark now encompasses more than 40 ‘geosites’ – locations of geological or geomorphological interest, which may also have cultural or heritage significance – as well as the district’s largest town, Oamaru.

Some of the sites are closed to the public; others, such as Elephant Rocks and Anatini, are on private land, accessible only by the grace of the landowners. Several geosites – including Maerewhenua and Takiroa (both Category 2 historic places) – feature Māori rock art, and these, along with other culturally important sites such as Te Kaihinaki Moeraki Boulders and Matakaea Shag Point (another Category 2 historic place), are highly significant to Ngāi Tahu.

Protection and kaitiakitanga are at the heart of the geopark philosophy and, according to Park Manager Lisa Heinz, the cultural and geological stories will be told side by side.

“It’s a huge area, with around 50 community groups and individuals involved throughout the park,” says Lisa.

“There are different geographies and different elements that communities care about – some are interested in the tourism aspect; others are more concerned with the education opportunities. It’s important that we engage with all of them.”

Global geoparks are both an important vector for community engagement and a driving force in promoting regional economic development.

“The geopark will boost tourism and provide opportunities for local businesses and communities to develop sustainable tourism initiatives,” says Liz. “Global geoparks attract visitors who want to experience the natural environment through an educational and sustainability lens.”

For Lisa, it’s a case of quality over quantity.

“Geoparks are quite niche; we aren’t expecting a lot more people to come to the area because of it, but we think the people who do come will stay longer. We are targeting people who are interested in learning about the district’s stories and engaging with the communities.”

To this end, the project that started it all – the Vanished World Centre – is getting a well-deserved upgrade, with redeveloped exhibits that will better tell the ‘story’ of the area, and a rock garden with a variety of sedimentary, metamorphic and igneous rocks that can be used for educational purposes for visiting school groups.

Mike says that in forming Vanished World over two decades ago, the community naturally aligned itself with the global geopark network’s ‘bottom-up’ approach to empowering local stakeholders.

“It just epitomises their philosophy,” he says. “It is incredible that the initial community effort evolved into the Waitaki Whitestone UNESCO Global Geopark as it exists today.”

His hope is that the creation of the geopark will encourage locals to learn about the Waitaki Geopark’s rich geological and cultural history.

“When people wonder about and understand the land and its people, they get pride; when they get pride, they get ownership, and it’s when they have ownership that they are likely to want to protect that land – and share its stories with others.” H

FIVE MUST-SEE GEOSITES

VALLEY OF THE WHALES: Named after the whale and dolphin fossils found here, the exposed cliffs in this valley showcase a thick sequence of sediments.

TE KAIHINAKI MOERAKI BOULDERS: Walk among these geological marvels and discover the Ngāi Tahu story of the wreck of the *Ārai-te-uru* waka, which Māori believe led to the formation of the boulders.

ANATINI: Discover the fossilised bones of an ancient baleen whale, which are partially exposed in a limestone outcrop.

ELEPHANT ROCKS: The remains of an ancient seabed have been weathered to form towering limestone ‘elephants’.

TAKIROA ROCK ART: Explore Māori rock art depictions of birds, animals and European settlers, dating from between 1400 and 1900. ■

2

View our video story here: youtube.com/HeritageNewZealandPouhereTaonga