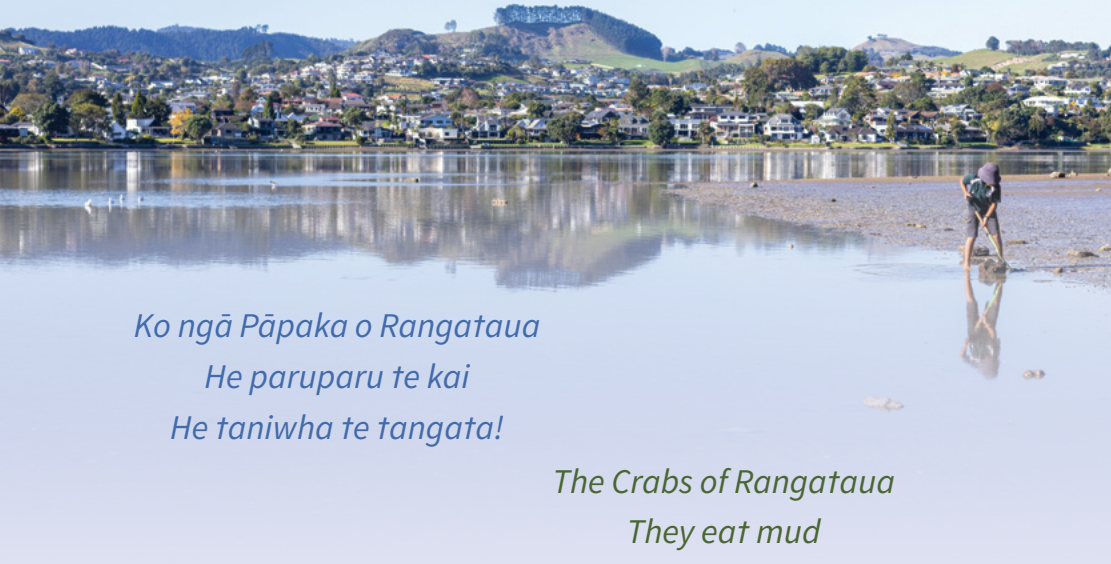


Kaitiaki of the Estuary

by Keri Welham



*Ko ngā Pāpaka o Rangataua
He paruparu te kai
He taniwha te tangata!*

*The Crabs of Rangataua
They eat mud
And have the boldness of demigods!*

The students at Maungatapu School in Tauranga Moana spend a lot of time digging in the mud of the tāhuna (estuary) in Rangataua Bay. They are trying to find out how healthy the estuary is. The sea creatures they find there give them clues.

The students get excited when they see plenty of tītiko (mud snails). This is a tohu or sign the tāhuna is healthy because tītiko don't like pollution or too much **sediment**. Another good tohu is when students see lots of eggs. This means the tītiko are **breeding**.

Monitoring the estuary

Several times a year, the students monitor the sea life at Ōpūpū reserve in Rangataua Bay. They collect data to help them find out about the health of the tāhuna.

First, students lay down a line in the mud. It's 100 metres long. They move along the line and stop every 10 metres. They look for creatures living on top of the mudflats. Then they dig with their hands to find creatures in the mud.

The students name and count each **species** they find. The first time they monitored the tāhuna, they found ten different species. There were pāpaka (crabs), tītiko, kōuraura (shrimp), and ika (fish). They also found heaps of noke (worms), which can easily burrow under the muddy surface.

But the students are worried. They've noticed that they are finding fewer sea creatures each time.

The students found a kōwhitiwhiti moana (snapping shrimp) in the tāhuna. This amazing creature makes a loud popping sound.

Scientists have measured the noise it makes. It can be louder than the music at a rock concert!



The Pāpaka of Rangataua

Pāpaka are very important to the people of Ngāti Hē and Ngā Pōtiki, who have lived on the shores of Rangataua Bay for hundreds of years. They call themselves Ngā Pāpaka o Rangataua – the Crabs of Rangataua.

Maungatapu School students like Te Rehutaimoana and Kaida-Miharo trace their whakapapa to all the iwi and hapū of this area. The pāpaka connect them back to their tīpuna (ancestors).

Ko au te pāpaka, ko te pāpaka ko au – I am the crab, and the crab is me. This is how the iwi of Kaida-Miharo have described themselves and their connection to Rangataua Bay for centuries.



Invading the estuary

In the last couple of years, Maungatapu School students have found evidence of a problem in the tāhuna. Large **aggressive** crabs called Asian paddle crabs have found their way into Tauranga Moana. They have spread to every corner of the tāhuna. These crabs are taking over the **habitat** of the small pāpaka.

“The Asian paddle crab doesn’t belong here – the Pāpaka o Rangataua belong here,” Kaida-Miharo says.

Science teacher Chris Dixon says students have built traps to catch the Asian paddle crabs. The council and some scientists are also trapping the crabs. Incredibly, a female can lay 85,000 eggs at one time. This means the population of crabs has grown quickly.

Asian paddle crabs



Kaida-Miharo



Visiting the tāhuna

Early one morning, Mr Dixon takes some of his senior science students to the Ōpūpū reserve to look for sea life. The principal, Matua Tāne, wades into the mud, but when he goes too deep, he realises his gumboot has a hole.

Zoe carries a crab trap, Te Rehutaimoana has a spade, and Kaida-Miharo has a clipboard to record what they find.

They examine the surface of the mud, then dig down. Terence lifts a rock and finds a pāpaka. He then finds a tiny pāpaka, which he shows to Matua Tāne. They decide it's a kūao (baby).



Matua Tāne tells Terence to put the kūao back so it is with its whānau.

Looking after the environment

Students first began monitoring the tāhuna when a scientist was working with local schools.

She showed them how to observe any changes or problems. Students use special microscopes to examine shells and other interesting species up close. Experts often visit and talk to students about topics related to the moana.

The school is a kaitiaki for the land it's on and the bay that surrounds it. It also takes care of the Ōpūpū reserve, where students designed a mural for the park's toilets.

Maungatapu School is on land that was **donated** to the community in 1881 by the great-great-great-grandparents of Kaida-Miharo, Te Rehutaimoana, and many other students.

“The environment has been looking after the people of Rangataua Bay for hundreds of years,” Matua Tāne says. “It's important that we continue to look after it as kaitiaki of the area and as a duty to our tīpuna.”



“If there is a problem in the tāhuna, we will try to find a solution,” Mr Dixon says.

As well as taking care of the tāhuna and developing their scientific skills, students collect rubbish – bottles, cans, string, and plastic – before it washes into the sea.

Through their work, the students have discovered that people using kayaks, boats, and jet skis are damaging the mangroves. They are also finding more and more Asian paddle crabs and fewer native species.

“If we don’t try and fix the problem soon, we might lose even more native species,” Zoe says.

Looking to the future

Students have written letters to the local council about the species disappearing from the mudflats at Ōpūpū. They also made a flyer about the tāhuna, which they delivered to every home in Maungatapu. “We reminded the community to look after the tāhuna,” Kaida-Miharo says.

“Hopefully the tāhuna will get cleaner,” Zoe says. “And in a few years’ time, after we have left Maungatapu School, students will count even more species.”



Zoe, Kaida-Miharo, Te Rehutaimoana, and Terence

Glossary

- aggressive:** likely to attack
- breeding:** producing young
- donated:** gave something to help someone or something
- habitat:** a place where an animal is suited to live
- sediment:** tiny pieces of soil and sand
- species:** a group of animals of the same kind

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