Taranaki Regional Council

Te ahumoana me te takutai
Marine and coast

HE KOHINGA PŪRONGO TAIAO | ENVIRONMENTAL SNAPSHOT

Ngā ākau tokatoka | Rocky shore

Taranaki Regional Council has surveyed six rocky shores twice a year since 1985. We measure algae coverage, sand coverage, reef habitat and identify all species present.

The rocky shore isn't an easy place to live. Tides expose organisms to changeable temperatures, long stretches of dryness alternating with periods of submersion and crashing waves. Sand inundation is an important factor, with sand filling the gaps between rocks that would otherwise provide shelter for small animals.

Hei inenga | What we measure

Species richness is the average number of different species found per 0.5m^2 quadrat on the rocky shore.

Species diversity is the variety and abundance of species found per quadrat on the rocky shore. It considers the species richness and how individuals are distributed.

Ō mātou kitenga? | What are we seeing?

Mānihi Rd Reef is the richest and most diverse habitat of the six sites with an average of 24.7 species found per quadrat over the last five years. Species richness and diversity are both highly likely increasing.

Orapa Reef and Mangatī Reef had an average of 18.8 and 17.1 species respectively over the last five years. Species richness and diversity are highly likely increasing at both sites.

Waiaua Reef/Greenwood Rd and Tūrangi Reef had an average of 18.6 and 17.9 species per quadrat over the last five years, respectively. Species richness is likely increasing at both sites, while species diversity is highly likely decreasing at Waiaua Reef/Greenwood Rd and likely decreasing at Tūrangi Reef.

Waihī Reef has the fewest species present with an average of 13.3 species per quadrat over the last five years. This site was also the least diverse, likely showing a decline in species richness and diversity over time.

At Tūrangi, Greenwood/Waiaua and Waihī Reefs the average species richness is changing by just one every 35 to 77 years. At Mānihi, Orapa and Mangatī Reefs the rate of change is higher, changing every five to 11 years.

He aha mātou i kitea ai? | Why are we seeing this?

Orapa Reef, Mangatī Reef, Waiaua Reef/Greenwood Rd and Waihī Reef experienced short-lived sand inundation which decreased species richness. Recovery usually follows when the sand clears. However, at Waiaua Reef/Greenwood Rd repeated sand inundation events appear to be negatively influencing long-term species richness. Other factors influencing rocky shore trends will require further investigation.

High species richness and high species diversity

High species richness and low species diversity

Low species richness and low species diversity

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Ngā ngutuawa | Estuaries

Taranaki Regional Council began monitoring estuaries in 2021. Surveys measure muddiness, chemical composition and the organisms that live there.

Taranaki estuaries are relatively small, but ecologically and culturally significant. Estuary health is closely tied to river health. Rivers carrying sediment, nutrients or pollutants can harm estuarine habitats.

Hei inenga | What we measure

Estuary macrofauna are small invertebrates (animals without backbones) such as worms, snails, crabs, pipi and cockles and can be seen with the naked eye.

Mud content is the amount of fine sand and silt, washed from the land, found on the surface of estuary mudflats.

Contaminants are pollutants that may harm people or marine life; they can build up in sediments over time. They are usually metals or organic pollutants.

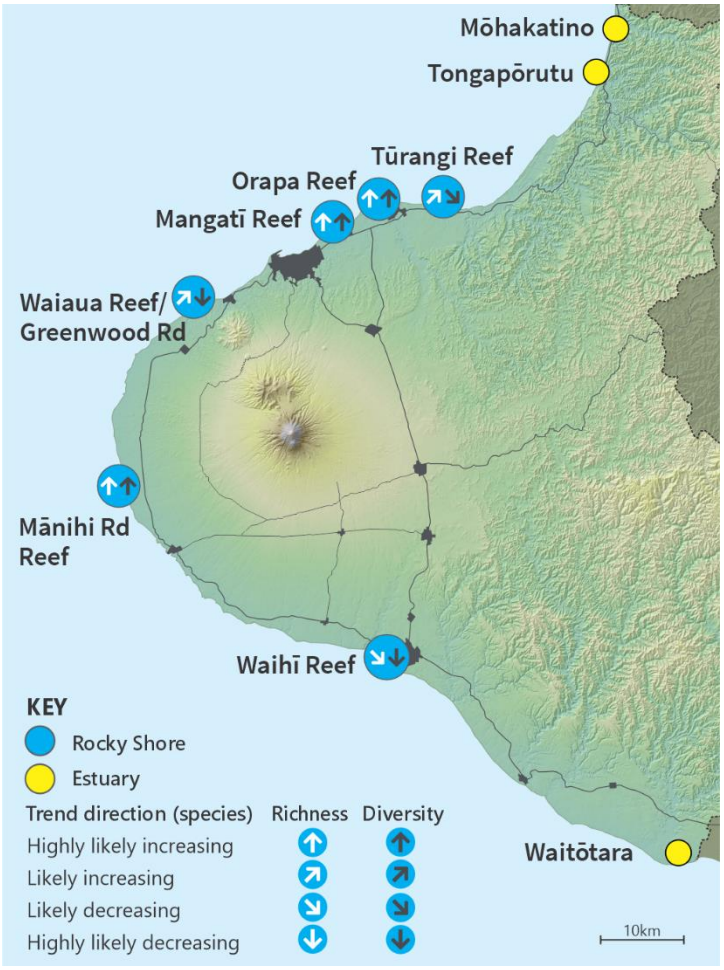
Ngā tuaiwi-kore ngutuawa | Estuary macrofauna

Some species are more sensitive to pollutants and disturbance. As estuaries become polluted or disturbed, sensitive species begin to disappear.

Estuary macrofauna at Mōhakatino between 2021 and 2023 experienced slight to moderate levels of disturbance. Macrofauna diversity at Tongapōrutu between 2021 and 2023 showed some signs of stress on sensitive species. Macrofauna at Waitōtara indicated that communities experienced moderate disturbance across all years. Sensitive species were absent here, likely reflecting the challenging environmental conditions.

Te tāranu paruparu | Mud content

A small amount of mud (<3%) is good for estuary health as fine mud particles bring the organic matter small invertebrates eat. High mud levels can smother habitats and affect species diversity. This signals the estuary may not be flushing properly, which can affect water quality and habitat health.



Tongapōrutu has the highest average mud content (63.8%), followed by Mōhakatino (57.8%) and Waitōtara (57.1%). It is not clear whether this high mud content is due to human activities or if these estuaries are naturally muddy. Ongoing monitoring will help answer this question.

Ngā parahanga | Contaminants

Many metals occur naturally; however, human activities can introduce metals into the environment. Metals can build up in the mud and sands of estuaries and stick around for a long time.

We found very low levels of metals in the three estuaries, well within the acceptable levels.