



# WHĀINGAROA HARBOUR MARINE REPORT CARD

Includes water quality, ecological health  
and sedimentation.

## Summary of Whāingaroa Harbour 2020

Waikato Regional Council monitors a number of sites in Whāingaroa (Raglan), including its harbour and open coast beach during the summer months (November to March), to assess the suitability of water quality for recreational activities, estuarine water quality, ecological health and sediment contamination.

### Quick facts

**3185ha**

Whāingaroa Harbour is 3185ha in area with a catchment size of 52,585ha

**70%**

of the harbour is exposed at low tide

**Monitoring since 2001**

WRC has been monitoring ecological health in the harbour since 2001.

**133km coastline**

Whāingaroa Harbour has 133km of coastline

**Raglan**

The town of Raglan is situated on the southern side of Whāingaroa Harbour. It's a popular tourist town, with its population growing by 300-400% during summer.

# At a glance

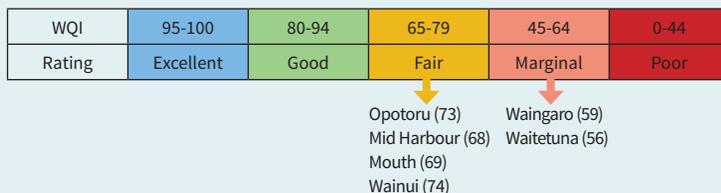
The following grades represent a summary of results from monitoring sites within the Whāingaroa harbour and nearby beach.

Results from each sampling event are published on our website as soon as practicable. Recreational water quality results are also published on the national environmental data platform, Land and Water Aotearoa (LAWA).

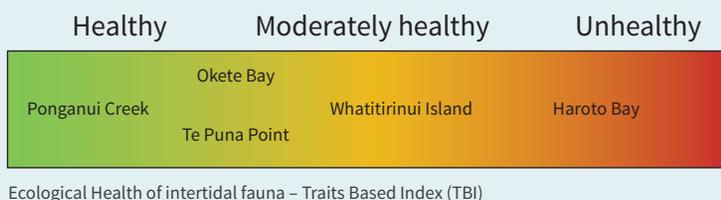
## Recreational water quality



## Estuarine water quality



## Estuarine ecological health



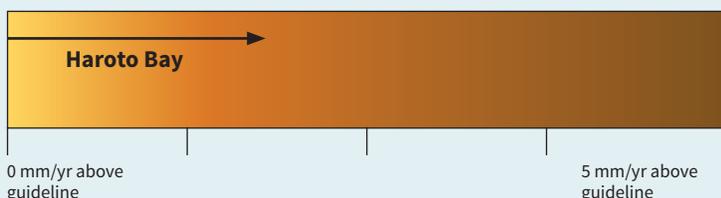
Ecological Health of intertidal fauna – Traits Based Index (TBI)

## Estuarine Sediment contamination

Antimony	Cadmium	Copper	Mercury	Silver
Arsenic	Chromium	Lead	Nickel	Zinc

Concentrations are below ANZECC interim sediment quality guidelines at all 5 monitoring sites.

## Estuarine Sedimentation



**Sites below sedimentation guideline:**  
Whatitirinui Island, Ponganui Creek, Te Puna Point, Okete Bay

# What does this tell us?

### Recreational water quality

The water quality of Ngarunui beach is nearly always suitable for recreational activities.

### Estuarine water quality

Two out of the six sites have marginal water quality meaning the conditions often depart from desirable levels. Sites regularly exceed ANZECC guidelines for nitrogen and phosphorus. Investigation is required to determine if there are impacts on community values.

### Estuarine ecological health

Three sites are considered healthy, one site is moderately healthy, and another site is unhealthy.

### Estuarine sediment contamination

Sediment contamination from heavy metals is low.

### Estuarine sedimentation

Sedimentation rates at four sites in the harbour are within acceptable guidelines. Rates at Haroto Bay are slightly elevated (1.4mm yr<sup>-1</sup> above sedimentation guidelines).



# Monitoring approach

## Recreational water quality

Suitability of the water for recreational activities such as swimming and surfing is monitored weekly between November and March. We do this by measuring a faecal indicator bacteria (enterococci) in the water. The number of faecal indicator bacteria inform the likelihood of contracting a disease from pathogens. We compare our results to national water quality guidelines to determine suitability.

## Estuarine water quality

Some aquatic plants and animals are sensitive and will not persist or prosper if water quality is poor, and nuisance species can take over. We monitor the water quality in Whāingaroa Harbour every month. We do this by collecting samples from six sites and test them in a laboratory to measure dissolved oxygen, nutrients (nitrogen and phosphorous), chlorophyll a as an indicator of alga growth, pH levels, temperature and turbidity. To summarise the results in context of ecological health, we use a Water Quality Index (WQI) which is based on performance relative to regional and national target values to understand the ecological health of the harbour. The WQI method is based on Foley (2018) with modifications and is currently under review for WRC. Results are indicative only. See Foley (2018) Auckland Technical Report TR2018/015.

## Estuarine ecological health

Estuarine animals, including shellfish, crustaceans and marine worms, are affected by the surrounding conditions and so are useful indicators of ecosystem health. We monitor the diversity and types of species living in or on the intertidal flats by collecting cores of sediment, sieving these over a 0.5mm mesh, and identifying and counting the retained animals. The results are classified according to a Traits-Based Index which uses information on the diversity of taxa in seven biological trait categories.

## Estuarine sediment contamination

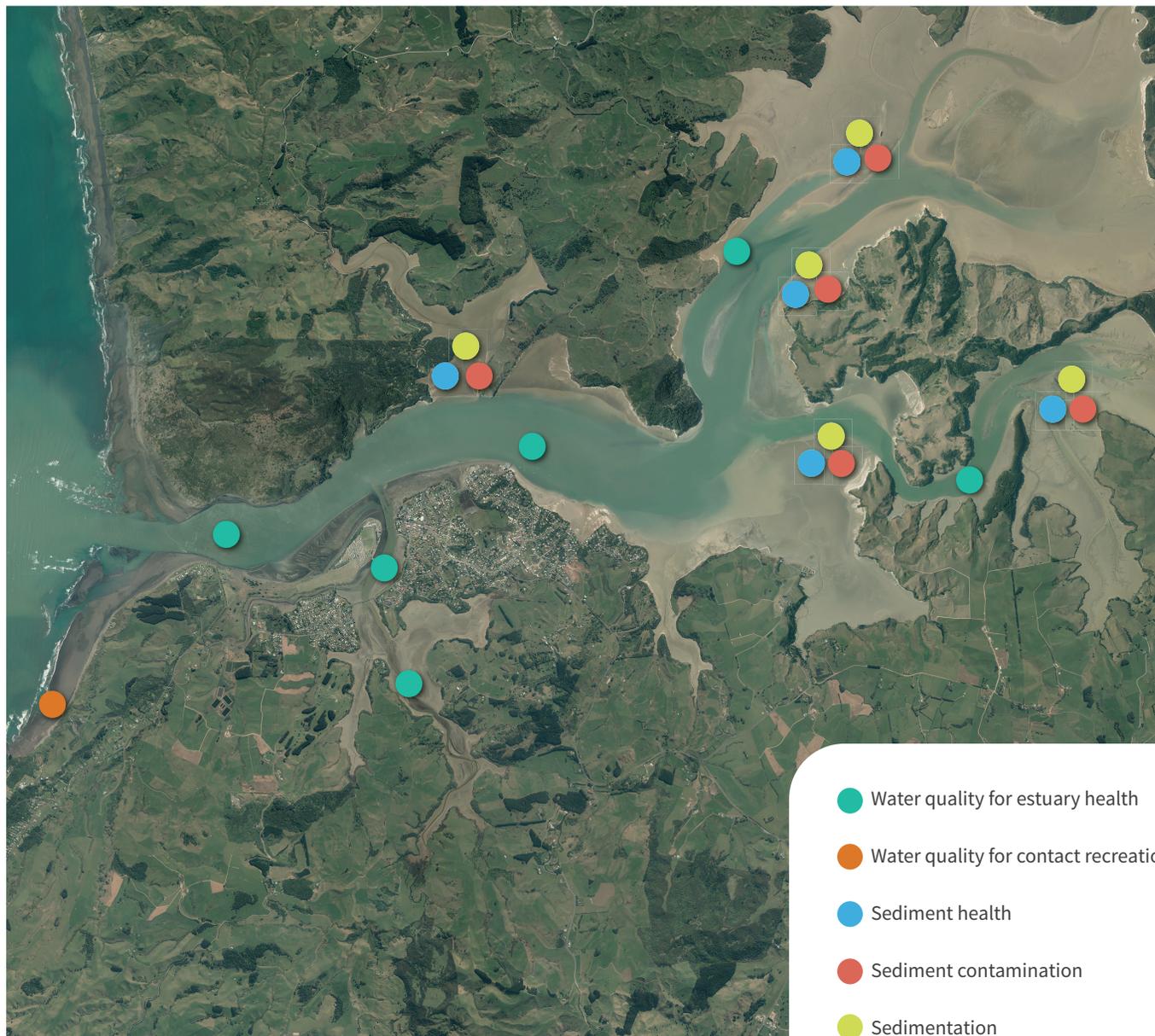
Contaminants delivered to estuaries can end up being stored in sediments which become a potential source of harm to animals and plants. These contaminants are known to accumulate slowly and so are monitored less frequently than other things. We collected sediment samples in 2003 and 2018 and tested for antimony, cadmium, chromium, copper, lead, mercury, nickel, silver, zinc, arsenic, organochlorines, and total polycyclic aromatic hydrocarbons. These results are compared to ANZECC guidelines to assess the likelihood of toxic effects.

## Estuarine sedimentation

Sedimentation is the deposition of sands and muds that can smother estuarine plants and animals, causing the estuary to become less suitable for organisms. We have been measuring sedimentation in Whāingaroa since 2003 at five sites around the harbour. The depth of sediment is measured repeatedly with the rate of sedimentation calculated from the changes over time. These results are then compared to ANZECC guidelines to assess the likelihood of negative effects.



## Monitoring sites



## Find out more

Further details regarding the findings of this report card can be found at [waikatoregion.govt.nz/environment/natural-resources/coast](https://waikatoregion.govt.nz/environment/natural-resources/coast).

### Waikato Regional Coastal Plan review

The findings of the sampling programme are important to inform the review of the Waikato Regional Coastal Plan. More information is available from [waikatoregion.govt.nz/planreview](https://waikatoregion.govt.nz/planreview)

### Harbour catchment management plans

WRC is developing management plans for the West Coast harbour catchments. More information is available from [waikatoregion.govt.nz/hcmp](https://waikatoregion.govt.nz/hcmp)

### Further advice and support

WRC staff can also offer support and advice for projects within the harbour catchments that improve water quality, reduce sedimentation and erosion, stabilise river systems and enhance biodiversity. Phone 0800 800 401