

TĀMAKI ESTUARY REPORTING AREA

Includes Howick, Māngere-Ōtāhuhu, Maungakiekie-Tāmaki, Orākei, and Ōtara-Papatoetoe local boards

STATE OF AUCKLAND MARINE REPORT CARD

JULY 2014

AREA GRADE

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QUICK FACTS

OF THE NINE BATHING BEACHES TESTED DURING SUMMER 2013/14 **98% PASSED** RECREATIONAL BACTERIA GUIDELINES

ISSUES IN THE ESTUARY REFLECT MANY DECADES OF **HUMAN IMPACT**, INCLUDING SEDIMENTATION AND CONTAMINATION FROM THE URBAN AREAS

OVER THE LAST **100 YEARS**, TĀMAKI CATCHMENT HAS EVOLVED FROM A NEARLY RURAL LANDSCAPE TO AN URBANISED AND INDUSTRIALISED AREA

THE TĀMAKI ESTUARY CATCHMENT REPRESENTS A SUBSTANTIAL DRAINAGE SYSTEM COVERING 97 KM²

WHAT MAKES UP THIS GRADE?

OVERALL GRADE



WATER QUALITY



CONTAMINANTS IN SEDIMENT



ECOLOGY



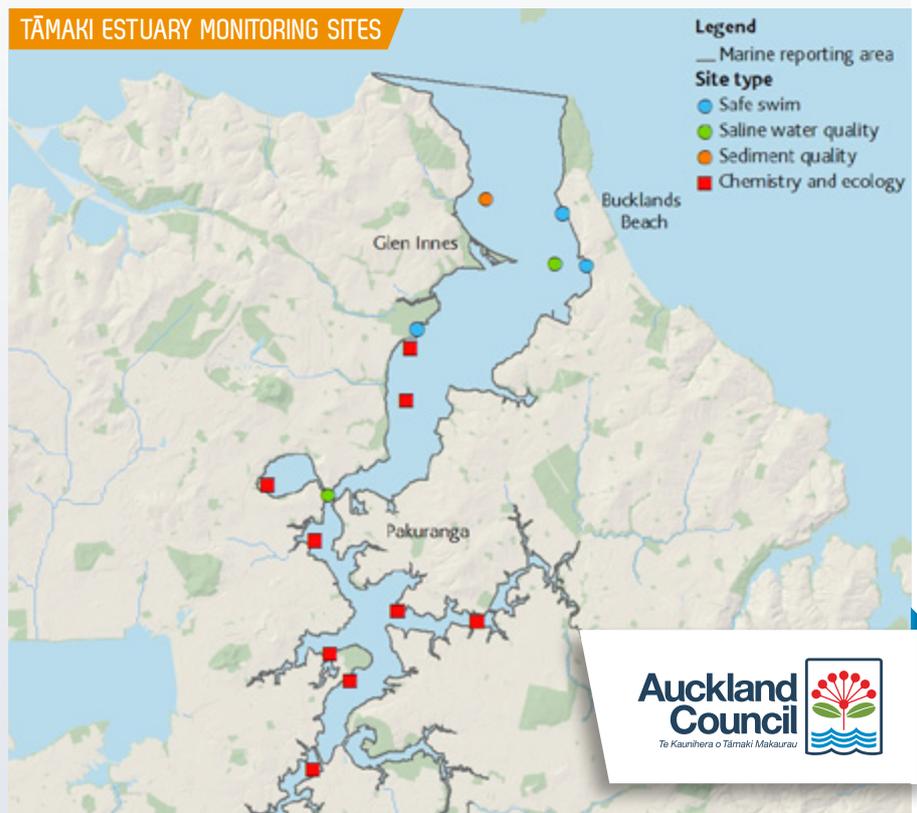
The overall environmental health score from A to F is based on the average of the scores for water quality, contaminants in sediment and ecology. Bathing Beach scores are not included in this grade.

These grades represent an average of the results from the individual sites. Individual site results will vary and localised issues may not be represented by the overall grades.

SPOTLIGHT ON SHELLFISH CONTAMINANT MONITORING:

RIMU has recently published a report (TR2013/054) detailing status and trends in contaminant concentrations in shellfish at 11 sites across the region, one of which is situated in the Tāmaki Estuary. The report reveals that copper and zinc concentrations in mussels deployed in the Tāmaki Estuary are elevated compared to levels in less heavily urbanized estuaries, the levels of legacy organic contaminants (such as DDT and PCBs) have decreased over time since being phased out in the late 80's and 90's and are now at relatively low levels.

TĀMAKI ESTUARY MONITORING SITES



MONITORING BACKGROUND AND INTERPRETATION

Water quality: To measure the health of our marine waters, a comprehensive range of parameters including nutrients, turbidity, salinity, pH (and more) are measured. Results are classified according to the Water Quality Index, which was developed by the Canadian Council of Ministers of the Environment in 2001 and adapted by Auckland Council. Scores are based on the averages over the last three years and exclude 'bathing beach water quality'. Check out report TR2013/031.

Contaminants in sediment: Auckland Council tests for zinc, copper and lead every two to five years. Other contaminants such as PAHs (polycyclic aromatic hydrocarbons, by-products of burning fuels) and arsenic are also monitored. Environmental Response Criteria (ERC) are used: green indicates low levels of contaminants, amber indicates some elevation and red indicates relatively high levels (as outlined in *Blueprint for monitoring urban receiving environment*, ARC TP 168, 2004 and ANZECC guidelines). Check out report TR2012/041.

Ecology: At harbour and estuarine sites, seabed-dwelling (benthic) species are counted and contaminants in sediments and sediment grain size are measured every two to five years, with the most contaminated sites sampled most frequently. Results are classified according to a five-point health index outlined in

Health of estuarine soft-sediment habitats: continued testing and refinement of state of the environment indicators, Auckland Council technical report, TR2012/012, which ranges from 'extremely good' to 'unhealthy with low resilience'. Ecology is also monitored more frequently at selected sites, every two to three months for soft sediment sites and annually for subtidal rocky reefs. There is currently no reporting indicator for reef ecology. Check out report TR2013/027.

Bathing beach water quality: Tests for microbiological (enterococci) contamination are carried out in summer as part of the Safeswim programme and are in line with Ministry for the Environment guidelines. These results are reported as a 'Quickfact' and are calculated from all tests carried out at all monitored beaches in the Harbour. 'Bathing beach water quality' has not been included in the overall score as it relates to human health and is based on a different method of assessment (number of alerts). Individual results for monitored beaches are provided on the Safeswim section of the Auckland Council website.

Warning: These State of the Environment indicators DO NOT measure or indicate food quality or safety; refer to foodsafety.govt.nz for more information.

MONITORING RESULTS



WATER QUALITY

Marine water quality monitoring began in 1992. The water quality of the Tāmaki Estuary has been ranked as 'poor'. Two sites are monitored, one site was ranked as 'poor' while the second had 'fair' water quality. These water quality grades remain the same as last year.



CONTAMINANTS IN SEDIMENT

Sediment quality sampling began in 1998. The Tāmaki Estuary has high levels of contaminants (particularly zinc) in its older, densely urbanised and industrialised headwater zones (e.g. Middlemore, Pakuranga, Ōtāhuhu and Panmure). Contaminants lessen with distance from the headwaters and consequently the estuary mouth has lower levels of contaminants.

All four sites sampled for PAHs fell into the green ERC category. Of the 10 sites regularly monitored for metals their ERC status is as follows:

- » Copper: 30% of sites are green, 70% are amber and none are red
- » Lead: 50% of sites are green, 50% are amber and none are red
- » Zinc: 20% are green, 10% are amber and 70% are red.



ECOLOGICAL HEALTH

The overall ecological health grade for the Tāmaki estuary comprises of eight monitoring sites mainly located in the upper reaches of the estuary where ecological health is ranked as 'unhealthy'. Two additional sites used in this year's overall health grade from Pakuranga creek have a 'poor' grading. The mid-estuary site near Benghazi Road has the highest grade of 'moderate'. Other sites nearer the mouth of the estuary are not monitored but are likely to have better ecological health.

FIND OUT MORE

This report card is part of a series prepared by the Auckland Council's Research, Investigations and Monitoring Unit, which undertakes monitoring and research to provide information and evidence to inform the council's activities and reporting. Auckland's environment must be healthy and resilient in order

to support life and lifestyle. More report cards can be found at: aucklandcouncil.govt.nz/stateofauckland. The report card series includes reporting on freshwater, terrestrial, marine, air, soil, capacity for growth, demographics and quality of life.

GET INVOLVED

Auckland Council provides more than 20 environmental programmes across the region for you to get involved with and improve your local environment.

► For more information: e-mail monitoring@aucklandcouncil.govt.nz or call us on 09 301 0101.

