

# GREAT BARRIER ISLAND REPORTING AREA

Great Barrier Local Board

AUGUST 2016

## STATE OF AUCKLAND MARINE FACTSHEET



To better manage and mitigate environmental effects in estuaries, Auckland Council and NIWA supported by *NIWA Coasts & Oceans Programme 5 – Managing Marine Ecosystems* have developed indices of estuarine ecological health. The indices are based on animals living in the sediment and the ways in which they respond to stressors like sediment and contaminants. These indices were developed and verified using invertebrate data from >100 estuarine sites throughout the Auckland region (including Waitemata, Manukau, Mahurangi and Kaipara Harbours). Several other councils and government agencies have also now expressed interest in these tools. For more information please contact Dr Drew Lohrer, Principal Scientist, NIWA, Hamilton.

At the end of October, 2015, a team of marine ecologists from NIWA visited tidal flats in three estuaries on Great Barrier Island. The data collection served two purposes. We were able to assess the biodiversity and the relative health status of three estuaries on Great Barrier Island, which has not been done before, and we advanced the development of the health metrics. Pristine sandflat sites such as those on Great Barrier Island are needed to calibrate the indices, to better understand the health of estuaries throughout Aotearoa.

The data analysis is not yet complete, but soon we will have habitat maps and estuarine ecological health scores for three Great Barrier Island estuaries: Whangapoua, Whangaparapara, and Shoal Bay. Populations of clams and snails were particularly abundant in some areas, with the sediments dominated by carbonate-rich shell material.

There has been concern that the water quality in some streams in the Tryphena Harbour catchment is poor (e.g. observations of some being odorous and visually unpleasant). A further concern is the high bacterial counts observed at some beaches and the potential risk associated with bacteria (e.g. *E. coli*) being discharged to the marine environment.

Bathing beach water quality was tested at three Great Barrier Island beaches during the 2015/16 summer period. Across all three beaches, 65 tests were completed and 89 per cent of these passed the recreational bacteria guidelines.

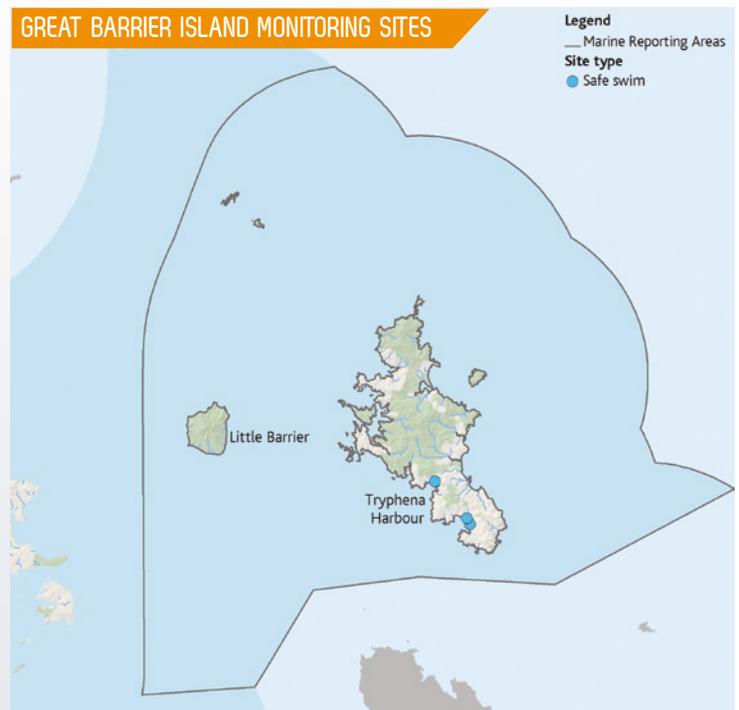
In the absence of comprehensive data for some areas, report cards are not available. In these areas fact sheets have been generated until more information is collected.

RIMU designed a year-long water quality monitoring programme which was initiated in April 2015. Water quality information was collected on a monthly basis from a number of streams flowing into Tryphena Harbour. The purpose was to determine whether there were any consistent water quality issues, and if so, recommend future targeted investigations or action, where required.

Results for dissolved oxygen, temperature, total suspended solids, turbidity and nutrients generally indicated very good water quality in all the monitored streams.

However there were some relatively persistent exceedances of "alert" and "action" guidelines for *E. coli* in three of the streams sampled (Blackwells, Mulberry Grove and Garden Road Streams). Further monitoring and investigation is planned for the 2016/2017 year to identify sources of the problem and help prioritise actions.

### GREAT BARRIER ISLAND MONITORING SITES



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This report card is part of a series prepared by Auckland Council's Research and Evaluation Unit (RIMU), which provides the mandatory and critical evidence to support the council's decision-making, activities and reporting. Report cards and the latest full State of the Environment Report can be found at [aucklandcouncil.govt.nz/stateofauckland](http://aucklandcouncil.govt.nz/stateofauckland)

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