

State of the Environment Report Card 2016

How do our lakes stack up?



What is a healthy lake?

A healthy lake supports wildlife and cultural values, and can be enjoyed by people for activities such as fishing and swimming.

What are the main threats to lake health?

- Excessive levels of **nutrients** can result in nuisance algal blooms, and at high levels nitrate and ammonia can be toxic to freshwater fish and invertebrates.
- **Exotic plants** can take over the shallows of lakes. This can crowd out native plants, which support wildlife, and make it difficult to boat/swim.
- **Viruses and bacteria** that live in the gut of animals (especially sheep and cows) have the potential to reach high levels in lakes. *E. coli* concentration is used to assess the likelihood of health threatening contamination.
- Potentially toxic **cyanobacteria** (sometimes called blue-green algae) can reach levels which pose a threat to human and animal health.

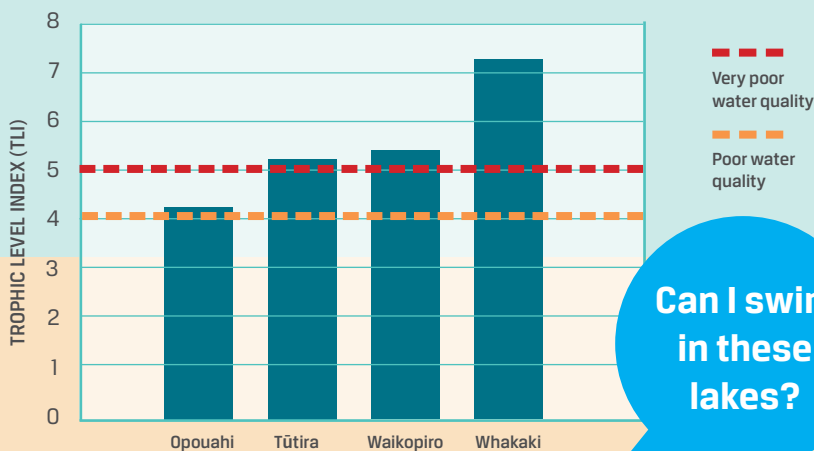
How do we measure lake quality?

The Trophic Level Index is used throughout New Zealand to describe the potential for nutrients to bring about nuisance algal or cyanobacterial blooms.

The potential risks of toxic effects from cyanobacteria (aka blue-green algae) and nitrate/ammonia toxicity are quantified.

What was the condition of the four lakes monitored?

The Trophic Level Index indicated that water quality was poor for Lake Opouahi, and very poor for lakes Tūtira, Waikopiro, and Whakaki. While nutrient concentrations were high for all four lakes, summer 2016 weather conditions were favourable for cyanobacteria and algae. The underlying causes are likely to be high levels of nutrients that were washed from the land into the lake. Water quality at Whakaki was so bad that aquatic plants no longer grow in the bottom of the lake.



Can I swim in these lakes?

All four lakes are of excellent quality from a viral or bacterial perspective.

There is a risk of potentially toxic cyanobacterial blooms at all four lakes, so swimming for dogs and humans is often prohibited. Please check for signs and media releases.

'Duck Itch' is a natural irritant; which can be avoided by vigorous drying with a towel immediately after contact with the water.

DID YOU KNOW?

There are over **200** lakes in Hawke's Bay and around **97%** are privately owned.

HBRC monitoring is focussed on high value publically accessible lakes.



Monitoring sites

HBRC carries out sampling on different types of lakes.

In 2016, one coastal lagoon and three freshwater lakes were monitored.

All four have water quality problems caused by nutrient enrichment.

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Tūtira Mai Ngā Iwi Project

Maungaharuru-Tangitū Trust (MTT) secured \$644,000 funding for a two-year project to help improve the mauri and water quality of Lake Tūtira, its wider catchment of lakes and waterways.

The project, called 'Tūtira mai ngā iwi', includes wānanga, pest plant removal, planting, fencing, science reporting, landowner and community engagement. Fixing the water quality issues will take time, but this project will help us to plan and progress in our role as kaitiaki.

MTT Hapū will lead the project and work with key project partners Hawke's Bay Regional Council (HBRC), Department of Conservation (DOC), Hastings District Council (HDC), Guthrie-Smith Trust, ECOED (the Environmental, Conservation and Outdoor Education Trust), Hawke's Bay Fish and Game, landowners and the community.



QUICK FACTS

Algal blooms reduce the value of **Tutira** for recreation.

Lake Whakaki (pictured) is a coastal lagoon with characteristics that are rare in New Zealand.

State of the Environment Case Study

Revitalising Lake Whakaki

A desire to improve the water quality of Whakaki Lake has seen the local community working alongside HBRC in finding a solution. The lake and surrounding wetlands have great significance to local Māori, but there has been a decline in water quality in recent decades. HBRC and the Whakaki Lake Trust successfully applied for national funding to help clean up the lake.

Members of the local community (pictured) helped collect water samples, including some night-time sampling.

The discoveries made during 2016 through partnership with the Whakaki Lake Trust and the broader community have provided key insights into what needs to be done to restore the life force to the lake.



Find out more The purpose of HBRC's State of the Environment report is to:

- Report on issues that affect our shared environment
- Help councils and communities set priorities for environment management
- Monitor the effectiveness of how we manage the environment
- Provide information people can use in their decision-making

This report card is part of a series prepared by Hawke's Bay Regional Council. It outlines the high-level results from HBRC's monitoring programme.

For more details, including full technical reports and up to the minute monitoring results visit: www.lawa.org.nz

