

Lake Rotoehu

INFOSHEET 5, DECEMBER 2017

This information sheet has been prepared for Te Arawa whānau to summarise information about:

- *research and monitoring occurring on Lake Rotoehu.*
- *projects occurring on, and adjacent to Lake Rotoehu, particularly efforts to reduce the impacts of land use on lake water quality.*

It will be reviewed and updated annually.

NAME MEANING

Rotoehu means "turbid" or discoloured waters.

IWI

Ngāti Tamateatutahi, Ngāti Kawiti, Ngāti Makino

AT A GLANCE

Lake size:	800 ha
Catchment area:	4710 ha
Elevation:	295 m
Average depth:	8 m
Deepest point:	13 m

Lake Rotoehu is a shallow lake with geothermal inputs, which affects water quality.

WATER QUALITY MONITORING

The Regional Council carries out regular monitoring of Lake Rotoehu. This includes:

- **Swimming water quality** – One site (Waitangi Soda Springs) measured from October to June. Any health warnings are posted on the Regional Council and Toi Te Ora Public Health websites.
- **Scientific** – One site measured monthly for clarity, algae, phosphorous and nitrogen. Result articulated as an annual Trophic Level Index or TLI.

Monitoring Sites
Source: LAWA website



WATER QUALITY STATUS

The Trophic Level Index (TLI) is used to give an overall picture of the health of Lake Rotoehu.

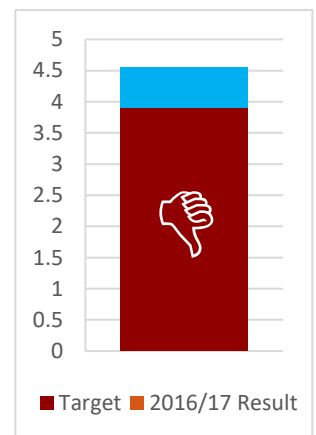
TLI target not met. For the 2016/17 year, the TLI was 4.55, which is over the target of 3.9.

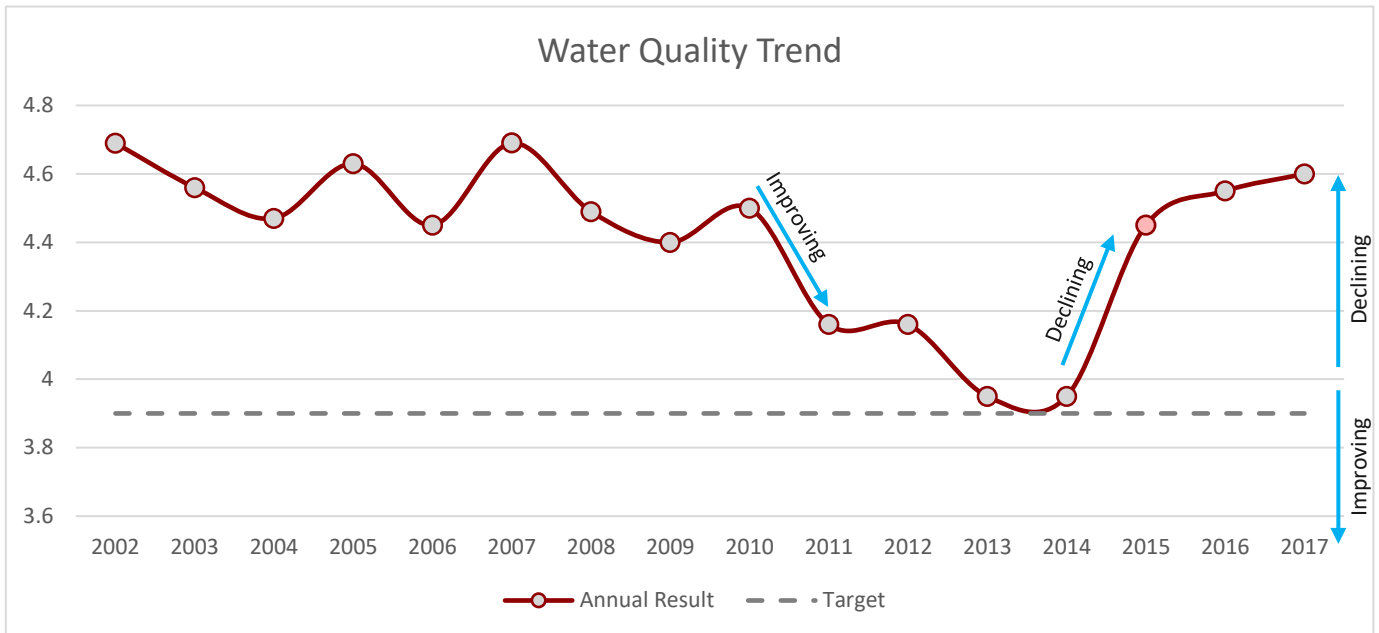
WATER QUALITY TREND

Water quality has improved since 2007 although Lake Rotoehu has yet to meet its target TLI.

Interventions such as alum dosing (as needed), lake weed harvesting and the floating wetland assist in the short to medium term.

The main intervention is land management change, the benefits of which take time to reach the lake.





RESEARCH

Includes, but is not limited to:

Taonga fish species research, NIWA, 2007

- Koaro extinct in this lake
- Kākahi, tuna and kōura were present

Kākahi and blue-green algae, NIWA, 2007

- General research about the ability of kākahi to reduce abundance of algae in Te Arawa lakes.
- Pilot study recommended for a small, shallow lake such as Lake Rotoehu.

Stream health assessment trial, 2014

- Assessment by Wally Lee & Alistair Suren (BOPRC) using scientific and cultural indicators.
- Trialled at one site on this lake. Study found a good correlation between scientific and cultural indicators.
- Recommendation: Council should establish a region-wide cultural health monitoring programme.

TE ARAWA MONITORING

Te Arawa Lakes Trust is embarking on a project to measure and monitor the cultural health of Lake Rotoehu using indicators that are more meaningful to us. This may be based on the following:

- Can I swim here?
- Can I gather food here?

We will also continue working with Dr Ian Kusabs who monitors kōura populations in our lakes using tau (bracken fern bundles).

LAKE ACTION PLANS

Lake Rotoehu Action Plan 2007 - This Plan outlines the reasons why the water quality in Lake Rotoehu has degraded. It includes projects and actions for the regional council, district council and catchment landowners.

<http://www.rotorualakes.co.nz/vdb/document/76>

ACTION PLAN PROJECTS

Includes, but is not limited to:

Project	Status
Land use and land management changes led by Regional Council. Two land use change agreements in place, one of which retired 668 ha of multiple owned Maori land to pine trees.	In progress
Hornwort weed is harvested annually.	Ongoing
Floating wetland constructed in August 2011	Completed
A Phosphorus Locking Plant was constructed at Soda Springs in 2011. It releases a low dose of alum to removing approx. 700 kg of phosphorus from the lake annually.	Completed

WHERE TO FIND MORE INFORMATION

www.tearawa.iwi.nz
www.rotorualakes.co.nz
www.lawa.org.nz

Te Arawa Lakes Trust
 Rotorua Te Arawa Lakes Programme
 Land Air Water Aotearoa