



# ROTORUA TE ARAWA LAKES PROGRAMME



Lake Rotoiti

## Proud Partners



**Bay of Plenty**  
REGIONAL COUNCIL

For more information  
call 0800 884 880 or  
[rotorualakes.co.nz](http://rotorualakes.co.nz)

# Key Messages

**The Rotorua Te Arawa Lakes Programme is responsible for protecting and restoring 12 Rotorua lakes.**

## The Rotorua Te Arawa Lakes Programme

- 💧 A partnership between Bay of Plenty Regional Council, Rotorua District Council and Te Arawa Lakes Trust. The \$200 million Programme is responsible for improving water quality in 12 Rotorua Lakes.
- 💧 The Ministry for the Environment has committed \$72.1 million in a Deed of Funding arrangement for the four priority lakes – Rotorua, Rotoehu, Rotoiti and Okareka and this is matched with \$72.1 million from BOPRC and RDC
- 💧 Water quality targets have been set for each lake based on the communities' aspirations for water quality
- 💧 We focus on a range of in-lake and land-based interventions to meet the communities' aspirations for water quality
- 💧 Some interventions, such as the Ohau Diversion Wall, have an immediate effect on water quality. Other actions such as land use and management change provide sustainable water quality improvements, but their impact on water quality will not be seen for some time
- 💧 Support and involvement from the community, iwi and businesses is essential to the programme's success
- 💧 Long-term water quality improvements and protection require collaborative action.

## The Issue

- 💧 Since the 1960s water quality in some of the Rotorua Te Arawa lakes have declined. In the 1990s action began to protect and restore water quality in the lakes.

## The Cause

- 💧 Water quality is affected by natural and man-made activities
- 💧 The nutrients nitrogen and phosphorus effect water quality. Too much nitrogen and phosphorus in lakes can cause algal blooms and aquatic weed growth
- 💧 Historical inputs have come from municipal waste water but more recently agricultural intensification has been a significant contributor of nitrogen and phosphorus in many catchments
- 💧 Each lake has its own story of how the nitrogen and phosphorus enter the lake. Our Action Plans are developed to address each lake's unique situation.



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Walkway - Lake Okareka



Aeration installation - Lake Rotoehu



Floating wetland - Lake Rotorua

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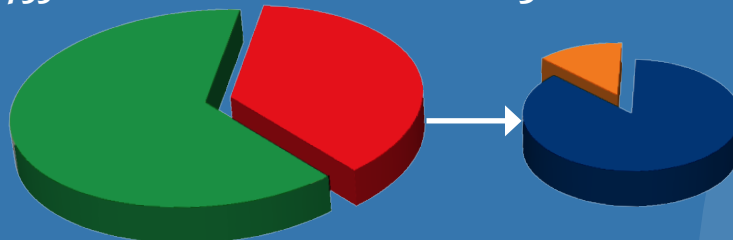
## Lake Rotorua

- 🔥 The long-term water quality trend shows Lake Rotorua is improving
- 🔥 Our in-lake interventions have improved Lake Rotorua's water quality
- 🔥 Improvements are mainly from short-term interventions and treating the nutrients in the lake
- 🔥 For sustainable long-term lake water quality we need to reduce the nutrients entering the lake. We need to turn down the nutrient tap in the catchment
- 🔥 70 percent of nutrients come from farming and agriculture in Lake Rotorua. We need to work with farmers to help them reduce the impact farming has on water quality through both best farm practise and land use change
- 🔥 A Land Use Incentive Fund is being developed to help landowners change their land use
- 🔥 We are developing rules for the Lake Rotorua catchment to set out when nutrient reductions need to be achieved and by how much
- 🔥 We are working with the farming community to ensure a fair and equitable outcome
- 🔥 Urban areas are contributing to nutrient reductions with lake-side community sewerage reticulation
- 🔥 Improving the water quality sustainably for Lake Rotorua will take time.

## Lake Rotorua Numbers

Total nitrogen load  
**755 Tonnes**

Total nitrogen reduction required  
**320 Tonnes**



■ **435T** Sustainable load of nitrogen for lake

■ **320T** Nitrogen reduction required

■ **50T** Reduction required from engineering options

■ **270T** Reduction from agricultural sources

*The 250T nitrogen reduction target is an old number from the Rotorua/Rotoiti Action Plan. Science has now told us this will not be enough.*

## Explaining Lake Rotorua's water quality results

- 🔥 2011-2012 annual water monitoring showed Lake Rotorua as having the best water quality since the 1990s
- 🔥 The 2012 result is likely to be due to a cold and windy summer which stopped nutrients on the lakebed being released and significant alum dosing of the Utuhiina and Puarenga streams
- 🔥 More information and modelling is required to better understand the effects alum dosing is having on the lake water quality
- 🔥 Additional modelling is required to confirm a downward trend in nitrogen loss from the agricultural sector.