What's being done to improve the lakes?

Action Plans

These are plans that focus on ways to reduce nutrients in the lakes. They've been prepared for some lakes, but are not necessary for all of them.

Rule 11

Some rules have been included in Environment Bay of Plenty's Proposed Water and Land Plan. They specify the way land can be used in some Rotorua lakes catchments to help prevent nutrients getting into the lakes. 'Rule 11' puts a limit on the amount of nutrients that can be lost from a property, which happens when nutrients leach from the soil into groundwater, or runoff into streams. This water then flows into our lakes, increasing the nutrient levels.

Sewage and sewerage

Sewage contains nutrients. Some older sewerage systems and septic tanks don't remove enough of the nutrients in the waste, which can then get into the lakes. Rotorua District Council has reticulated the sewerage systems of some lake-side communities which will help stop this. New rules have also been introduced which means in some areas septic tanks and on-site effluent treatment systems need to be upgraded to ones that can remove most of the nutrients out of the waste.

Changing the way we use the land

The Rotorua Lakes Strategy Group has appointed members of the farming industry to the Land Use Futures Board to allow the farming industry an opportunity to promote and lead solutions which will assist in the task of reducing nutrient inputs from land use around the lake catchments.

In-lake and in-stream options

Once the nutrient rich water is in the lakes, we can look at different options to remove the nutrients, depending on the lake and the situation.

The Ohau Channel Diversion is a wall in Lake Rotoiti. Most of Lake Rotoiti's nutrients come from Lake Rotorua through the Ohau Channel. It's been built to prevent this nutrient rich water from getting into Lake Rotoiti and causing algal blooms.

In other lakes, actions like applying natural materials to the lake are being trialled. In the right conditions, they can absorb some of the nutrients from the water, or stop the nutrients getting into the water from the bottom of the lake.

Research

Many of the above actions have only been available to us because of the large amount of research that is being done. We're able to find out what actions might work best in a lake because of it's size, depth, location, and water quality state. The research programme also lets us monitor anything we do, and even model how we expect something to turn out.

You can find out more about any of the actions above by visit www.envbop.govt.nz. See the individual lake cards for the actions that relate to a particular lake.

Pests in the lakes

Pest fish and weeds in the lake can also affect the quality of our lakes. They can cause the water quality to drop, be a nuisance when you're using the lake, and overtake the native plants growing in the lake.

All it takes is one tiny fragment of weed on a boat which can transfer the eggs of a pest fish, or cause a new weed to grow.

If you're taking fishing, boating or just swimming gear from one lake to another, make sure you inspect it and make sure you're not introducing a new problem to a lake.

STOP THE SPREAD

Where to get more information

Environment Bay of Plenty

Phone: 0800 ENV BOP (368 267)
Email: info@envbop.govt.nz
Website: www.envbop.govt.nz

Rotorua District Council

Phone: 07 348 4199
Email: mail@rdc.govt.nz
Website: www.rdc.goct.nz

Te Arawa Lakes Trust

Phone: 0508 TE ARAWA (832 729)
Website: www.tearawa.iwi.nz/lakes

This report card was produced on behalf of the Rotorua Lakes Strategy Group, which includes Environment Bay of Plenty, Rotorua District Council and Te Arawa Lakes Trust - find out more by visiting www.envbop.govt.nz

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The Rotorua Lakes

2008 Report Card

This report card is one of a series produced for the 12 Rotorua lakes. Our aim is to explain the current state of the lake's water quality and to keep you up-to-date on the work being done to improve it.

The Rotorua lakes

They're one of New Zealand's natural treasures. Unfortunately, the water quality in many of the Rotorua lakes is getting worse. This card is part of a series of cards that looks at the lakes and what's being done to help improve their quality.

What's the problem with the lakes?

Too many nutrients. As the land around the lakes has been settled and farmed, it's put more and more nutrients into the water. Over time, these nutrients caused the quality of the water to drop, which causes algal blooms. In the worst cases, like Lake Rotorua, the lake is affected for most of the year.

How do the nutrients get into the water?

Through people living near the lakes, and wastewater from septic tanks getting into the lakes. Farming adds nutrients to the land which then flow into the lakes through groundwater and streams. Forestry, recreation, rainfall, geothermal sources and springs are also contributing factors in nutrients entering the lakes.

What's the state of the lakes?

The map over the page is a snapshot of where the lakes are now. You can also visit www.envbop.govt.nz for copies of the cards of individual lakes.

How do you measure the water quality?

We look at the amount of nitrogen and phosphorus nutrients that are in the water, and the amount of chlorophyll-a there is. Chlorophyll-a is necessary for plants to grow. These three factors are combined with the clarity of the water to produce figures on the trophic level index. A higher figure means the lake water quality is bad – a lower figure means it's good.

Water quality in the lakes – is it getting better?

In some lakes it is, but in others it will take a long time for any major improvements to be noticed. In some of the worst lakes, like Lake Rotorua, nutrient-rich water will still be entering the lake from underground reserves for years to come. There's no one quick fix to improve water quality – that's why we're investigating and using lots of different methods to help improve it.

Who's doing the work to improve the lakes?

It's a combination of the community, iwi and councils.

The Rotorua Lakes Protection and Restoration Action Programme includes representatives from Environment Bay of Plenty, Rotorua District Council and Te Arawa Lakes Trust, and is working with the community to improve the lakes.

Working parties are made up of representatives from Environment Bay of Plenty, Rotorua District Council Te Arawa Lakes Trust, DoC, Fish and Game, landowners, the community and interest groups. They discuss and evaluate the options and solutions for improving a lake's water quality, identify what isn't known about a lake and give recommendations for action. Sometimes an action plan may be developed by a working party setting out what will be done to help improve a lake's water quality.

Two **Technical Advisory Groups** (one for land use and one for water quality) look at options for improving a lake from a scientific perspective.

The **community** has a role to play as well. Visit www.envbop.govt.nz for some tips on living near lakes – find out what you can do to help improve water quality in your daily life.

Who's funding the work?

In March 2008 the Prime Minister Helen Clark announced a $72.1 million funding package to help improve the health of Lakes Rotorua, Rotoiti, Rotoehu and Okareka over the next 10 years. The total cost of the restoration programme over the next decade for those four lakes is $144.2 million – the remainder will be paid by Rotorua District Council and Environment Bay of Plenty.

THE ROTORUA LAKES
Protection and Restoration Action Programme

An **Environment Bay of Plenty, Rotorua District Council** and **Te Arawa Lakes Trust** joint project.

The Rotorua Lakes

Rotoehu

Rotoehu means “murky water” which implies the lake was never crystal clear all the time.

Rotoiti

The Ohau Channel Diversion Wall will divert the flow of water from Lake Rotorua directly down the Kaituna River, preventing it mixing with the main body of Lake Rotoiti.

Rotoma

Is the cleanest of all the Rotorua lakes, with a water clarity of around 11 metres.

Rotorua

The largest lake in the region, Lake Rotorua is valued and used by locals and tourists alike.

Okataina

Has some of the best water quality of all the lakes of the Rotorua region.

Okareka

Phoslock, a phosphorus-removing product has been applied to the lake.

Tikitapu

Known as the Blue Lake, it has a water slide, an easy walking track and is popular for family outings.

Tarawera

Known for the size and condition of its rainbow trout.

Lake Tarawera is a deep lake, and any water flowing into it stays there for around 10 years.

Rotokakahi

Is privately owned and considered tapu or sacred, so no-one swims or goes boating on the lake.

Rotomahana

Once the site of the geothermal Pink and White Terraces, before the 1886 Mt Tarawera eruption.

Okaro

Is the smallest Rotorua lake under public management.

A Herdhome is being used to reduce the amount of nutrients getting into the lake.

Rerewhakaaitu

The area around the lake is of special wildlife interest, with the largest breeding population of banded dotterel in the Rotorua district.

Lake Rotorua
Mokoia Island
Hinemoa Pool
Ngongotaha
ROTORUA
Lake Rotokawa
Motuohiwa Island
Motumauri Island
Pateko Island
Lake Ngawhero
Lake Te Hapua
Lake Rotoiti
L Rotoehu
Lake Rotoma
Lake Okataina
Motuwhetero Island
Lake Te Rotoroniu
L Okareka
Otumutu Island
L Tikitapu
Lake Rotokakahi
Private lake
Puriaruku Island
Moutawa Island
Lake Tarawera
Green Lake
Lake Rotomahana
Patiti Island (Banded Island)
Frying Pan Lake
Lake Okaro
The Crater
L Rerewhakaaitu

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