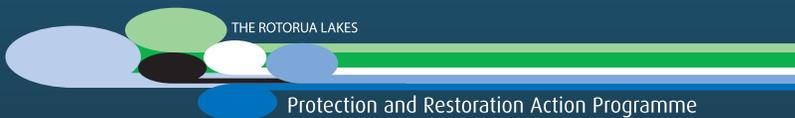


LIVING NEAR LAKES

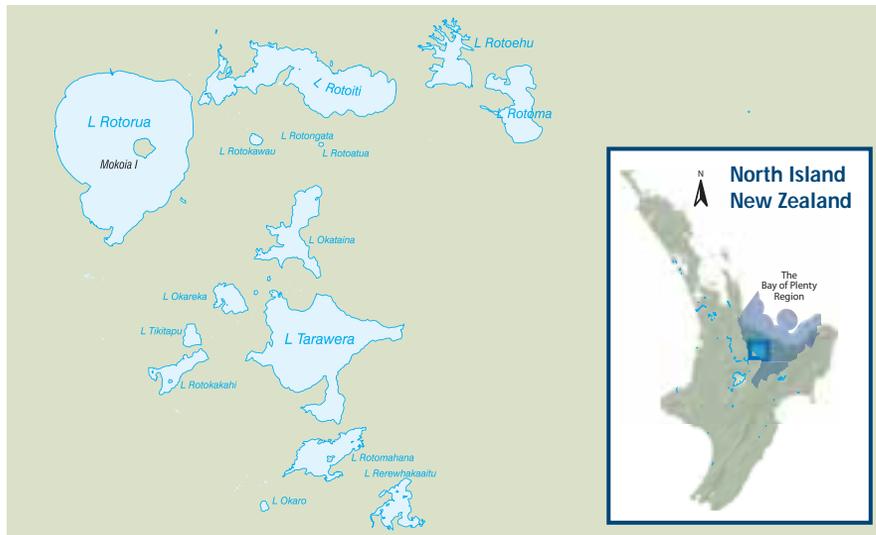


An **Environment Bay of Plenty**, **Rotorua District Council**, and **Te Arawa Maori Trust Board** joint project.

INTRODUCTION

The Rotorua lakes are unique. Each lake has its own distinct landscapes, surrounding land use and lake dynamics, but together they have regional and national importance. As partners in the Rotorua Lakes Protection and Restoration Action Programme, Environment Bay of Plenty, Rotorua District Council and Te Arawa Maori Trust Board are working together with community and interest groups to protect and restore these lakes so we can all continue to enjoy them.

The quality of the Rotorua lakes is influenced by what goes on within the catchment. This means everyone has a part to play in maintaining and improving lake quality. For example, forestry harvesters can use silt and debris traps to stop sediment entering streams and lakes.



Livestock farmers can think about how they can use best management practices on their farm to reduce unnecessary nitrogen and phosphorus runoff. Tourist operators can clean their boats of lake weed and forbid littering of lake areas.

As a lakeside resident, you can do many small things to help keep your lake clean and healthy:

- **Watch your nutrients**
- **Clean your boat**
- **Look after lake edges**
- **Avoid draining poisons**

WATCH YOUR NUTRIENTS

Nitrogen and phosphorus are the main cause of the Rotorua Lakes' water quality problems because they feed the algae that live in the lakes. Lakes with higher levels of these nutrients are much more likely to have cyanobacteria blooms that prompt health warnings. It's important that you don't use products or do things that may release nitrogen and phosphorus into waterways.

You can:

Buy the right detergent.

Some detergent powders and liquids used for washing clothes, dishes and cars have high phosphate levels. Buy detergents with an "Environmental Choice New Zealand", "low P", or "no P" label, and don't use more than you need.

Compost green waste.

If you have a septic tank or a more advanced nutrient-removing on-site system, avoid using a sink-grinder to get rid of green waste – compost it instead.

Use fertiliser sparingly.

Compost, blood and bone, "organic" and slow-release mixtures are best as they release nutrients into the soil more slowly.

Look after your septic tank.

Keep the bacterial population in your septic tank or advanced effluent treatment system healthy. If you have an advanced system, check that the nitrogen-removal rates are normal. If you have a septic tank, check that the drains are not clogged or waterlogged, and where possible are passing through good organic soils.

Get involved.

Find out if sewerage reticulation is planned for your area, and how you can get involved with the design and rollout process. Take an interest in the Rotorua Lakes Protection and Restoration Action Programme.



CLEAN YOUR BOAT

Lakes like Lake Rotorua and Lake Rotoehu are infested with large exotic weed beds. These weeds can sprout from a single fragment and spread quickly. They take over the native lake plant beds, home for many native species, and displace them with dense, thick, tall, weed material.

The good news is that some weed species have not reached some lakes yet. The bad news is that it only takes a fragment of weed stuck on a boat or propeller to start a new infestation.

Pest fish in the lakes can also cause problems. The Rotorua lakes don't have many pest fish species yet, like koi carp, rudd, and catfish. These fish like to stir up lakebed sediments as they look for food, eat and remove aquatic plants, and prey

on native fish and their eggs. This makes lake water murky and wipes out native species. It also increases nutrients and algae, as floating sediments can release nutrients into the water column (which algae use to grow). They can also alter the food web so there is less zooplankton to eat algae.

Always clean your boat of any stray weed or fish eggs after it has been in any of the lakes. This is especially important if you are boating in more than one lake, for example moving from Lake Rotoehu to Lake Rotoma.



LOOK AFTER LAKE EDGES

Plants on the edge of a lake act as a buffer, filtering water before it flows into the lake. A healthy lake edge plant community can:

- Soak up nutrients that would otherwise feed algal blooms.
- Absorb pollutants.
- Remove dissolved nitrogen in a wetland system.
- Provide a home for fish to shelter and forage among the reeds.
- Make the lake look more pleasant and attractive.
- Stop litter from entering the lake with thick foliage.

Lake edge buffer zones also help capture water runoff during storms. This is often full of sediments and nutrients. Without a vegetation zone, large amounts of sediment and nutrients can runoff roads, lawns and farmland directly into the lake.

Properly planted lake edges help settle and filter some of that material reducing the negative effects on the lake.

Here are some good tips to help enhance the natural character of the lake edge:

- Remove exotic weeds from around the lake edge.
- Use sediment traps when exposing soil near a stream or lake edge. These are ponds or areas that allow sediment to settle out of water and runoff. They trap the sediment so it doesn't build up around wetlands and sandy beaches.
- Choose garden plants that don't need much fertiliser to stay healthy. If you use fertiliser, only apply small amounts of slow-release fertilisers.

- Join a landcare group to restore and look after your lake edges. If one doesn't exist, get together with your friends and start one. Environment Bay of Plenty and Rotorua District Council support landcare groups with training, resources, and expertise.



If you live along the lake edge, here are some more things you can do:

Build a wetland.

Don't remove native plants and reeds in the water. Check out whether you can build your own little wetland area. Call Environment Bay of Plenty for more information.

Plant a buffer zone.

Lawn and garden areas that go right to the lake edge allow nutrients to slip into the lake much more easily. Call Environment Bay of Plenty to find out what you can plant and where.

Grow a 'soft' boundary.

If you want to define the boundary between your property and the lake, use a "soft" edge like a thick hedge or a row of native shrubs. Don't build a "hard" edge, like a concrete or brick wall.



AVOID DRAINING POISONS

Poisons pollute the lake. They can harm plant and animal species in the lake and make lake ecosystems sick. Around the Rotorua lakes, the most common way that poisons enter streams and lakes is through stormwater drains and channels. Residues from cars (oil, rubber, heavy metals), cleaning products (bleaches, chemical detergents), household products (rinsed paint, herbicides) and grit and dirt wash off solid surfaces like driveways and roofs and eventually flow into the lake.

You can:

Wash your car on the grass.

Wash your car, boat and bike on the lawn or at a car wash, not on the driveway or the street.

Recycle chemicals.

Don't tip out oil, paint, pesticides or other chemicals where they can flow into drains, streams, or the lake.

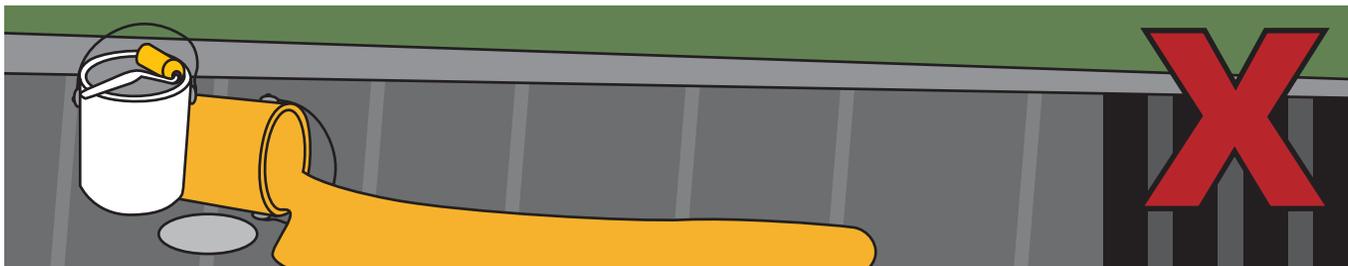
Grow a lawn.

Minimise "hard" surfaces that don't absorb runoff, like tar-seal, concrete or paving. If you do have

them design a way to capture some of the runoff, like grass buffers, small soak trenches filled with stones or bark, or leave spaces between hard surfaces so the soil can absorb the stormwater.

Buy biodegradable.

Check that your cleaning products are biodegradable. Some cleaning products aren't okay to use with septic tanks or advanced on-site systems.



This booklet was brought to you by Environment Bay of Plenty, Rotorua District Council and Te Arawa Maori Trust Board with assistance from the Department of Conservation and the LakesWater Quality Society. For more information about management of the Rotorua Lakes, be sure to check out the website: www.envbop.govt.nz. If you have any further questions, contact:

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