

**SUBMISSIONS
TO
ENVIRONMENT BAY OF PLENTY
AND
ROTORUA DISTRICT COUNCIL

ON

NUTRIENT REDUCTIONS
IN
LAKES ROTORUA & ROTOITI**

Subject:

The improvement of lake water quality in Lakes Rotorua and Rotoiti by the elimination of a significant volume of source nutrients from the ground water.

Vision:

Lake Water Quality Society Vision for Lakes Rotorua and Rotoiti is to see their targeted TLI of 4.2 and 3.5 achieved within 10 years by in-lake and source nutrient reduction.

Summary:

- Much work is being proposed within the lakes to reduce their nutrient load and allow a relatively quick improvement in the TLIs.
- Until the nutrients entering the lakes are dramatically reduced continuing in-lake treatment will be required.
- Improvement in farming practises will not achieve the required reduction without substantial retirement.
- This is to be achieved by the retirement of farming land by offering Tradable Subdivisional Rights (TSR) within the catchment. Each TSR would be for the 10ha of dairying land.
- It will mean subdivision will not be permitted within the Rural Zones without the required TSR. Other than the requirements of sewerage and standard RDC subdivisional conditions no other restrictions are anticipated.

- This will likely lead to rural residential subdivision in the proximity of the lakes, where there are good views and in bush.
- The annual nutrient input of a 1ha lakeside residential property is approximately 10 kg of N, this contrasts with 10ha of dairying land contributing 400kg of N.
- This will greatly assist in the restoration of the Lakes without the requirement of public funding.
- Growth of the permanent population within the District is essential and promotion of the District is critical.
- An increase in economic activity and wealth of the District can be anticipated.

Background:

We applaud EBOP, RDC and the community for the progress that has been made to date in providing a platform for the improvements to our lakes. We cite the following major works that contributed to this -

- The establishment of the Chair at Waikato University for lake water studies and the subsequent work by David Hamilton to provide a scientifically based understanding of the state of our lakes
- The work of Paul Dell and Environment BOP in preparing and promoting actions under the “Draft Lakes Rotorua & Rotoiti Action Plan”
- Upgrading of the city sewerage scheme
- Commencement of sewerage of lakeside settlements and the Eastern Trunk sewer line
- Granting of consent for the Ohau Channel diversion
- The joint approach to Government for an equitable financial contribution
- The work of RLLT and Federated Farmers in undertaking farming based research to establish diminished nutrient flows into the lake
- Establishment of the Lake Okaro wetland and associated work on that lake

Lake Rotorua's Nutrient Budget and Catchment:

As provided to the Focus Group on 31 May 2006, the following nutrient budget for Lake Rotorua was presented.

Landuse	Area Ha	Load	
		N Tonnes/yr	P
Native Forest & scrub	10588	42	1.3
Exotic Forest	9463	28	1.0
Cropping & hort	282	17	0.6
Pasture	20112	573	18.1
Lifestyle	556	11	0.5
Urban	3267	50	3.8
Springs			13.0
Geothermal		42	1.4
Total Catchment Inflows	44268	763	39.7
Rain		32	1.2
Lake Bed Sediments	8079	308	25.0
Total	52347	1103	65.9

Wildfowl (recycling)		1	1.4
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Target Loads LRRAP **430t/yr N** **35t/yr P**

Rotorua Catchment Load: 2002 – 2005 data TAG 22/5/06

	N t/yr	P t/yr
Major streams	381	29
Minor streams	19	0.8
GW to lake	104	7.8
Lakeside features	13	0.3
Rainfall	64	1.2
Total	581	39.1
c.f. Rotorua Rotoiti Action Plan	420	

Targets Reductions – Rotorua Rotoiti Action Plan

2005	151t/yr N	35t/yr P
2050	253	35
2200	339	35

Analysis of Nutrient Budget and Targets:

- The existing inflows into Lake Rotorua are 581 tonnes of nitrogen and 39.1 tonnes of phosphate.
- These are predicted to increase under the nutrient budget to 763 tonnes of nitrogen and 39.7 tonnes of phosphate.
- To restore the TLI, EBOP's scientific team have assessed the required reductions at 339 tonnes of nitrogen and 35 tonnes of phosphate per annum.
- It is essential that existing nutrients entering the **groundwater now** are considered in assessing actions and their impact on the lake, failure to do this will only delay restoration of the lake.
- Based on existing inflows into the groundwater the target reduction requires more than a 50% of the nitrogen inputs be removed.
- In the short and medium term we will need to rely on "in lake solutions" to reduce nutrients to an acceptable level.

Farming Research:

Currently substantial research is being undertaken to diminish nutrient outflows from farming properties. This research includes:

- Off farm wintering
- Herd Homes
- Nitrogen inhibitors
- Fertiliser Best Practices
- Controlled overland water flows

Regulatory Restrictions:

- Implementation of Rule 11 has only capped nutrients and is subject to review. It does nothing to reduce the inputs.

Conclusion of Analysis:

- Even with hope and best intentions, it is unrealistic to anticipate that existing regulatory limitations and improved farming practices will bring about the required reduction in nutrient inflows needed to achieve the targets.
- Clean water is an extremely valuable resource and its restoration can not be risked on unproven platforms. Even if proven it is extremely unlikely that they would be adopted in full across the entire catchment.
- Both Councils need to urgently adopt a change in land use policy to achieve the desired outcomes.

- Council need to vigorously pursue “in lake solutions” to provide short to medium term relief to reduce the present grossly excessive TLI

PROPOSAL FOR LAND USE CHANGE:

LWQS urges Councils to adopt and include in appropriate planning documents suitable rules to allow Tradable Subdivisional Rights (TSR) associated with the retirement of pastoral land.

The principles associated with this scheme are:

- Applies to all land within the Rotorua/Rotoiti catchment within the Rural Zones
- For every 10 hectares retired from dairying or comparable area of pastoral land (on a nutrient equivalent basis) a single subdivisional right will be granted and apply anywhere in the lakes catchment.
- No other right of subdivision within the zones will be permitted
- Any new residential property will be required to provide a sewerage connection to the city scheme or a nutrient stripping septic tank
- Land retired from farming is to be utilised for exotic forestry, plantation forestry or native bush planting rural residential living and the like.

Consequences of Change:

- There is approximately 21,000 hectares of pastoral land within the catchment and with better farming practices and a minimum one third of this land being retired, the targeted objectives should be achieved.
- The key to this is to ensure that no subdivision within the catchment exists without the required retirement of land.
- The establishment of residential properties needs to be as of right across the entire catchment including land adjoining the lake and areas of higher altitude with good views of the lake and in bush.
- Under this scheme, a landowner that had desirable property could purchase more remote land in the catchment, retire it to forestry/bush and utilise those tradable rights to subdivide his rural property for residential purposes.
- To achieve the retirement of 7,000 hectares of land, 700 rural residential properties would need to be sold. Over a 10 year period this should be obtainable provided Rotorua becomes a desirable place to live in. RDC would need to actively promote the desirability of the district as a place in which to live. It has been well established through international research that where people live, if at all possible, they will invest and hence the community prospers.
- The public purchase of land is financially unachievable.
- Economic development within the District would be substantially greater than present, reference Tauranga and Taupo, and the Nimmo-Bell Ltd report.