

Submission (written Version of presentation) to the Rotorua Nutrient Management Plan Proposed Change 10 to Bay of Plenty Regional Water and Land Recourse Plan Under Clause 1B of Schedule 1 of the Resource Management act 1991 - Nutrients into Lake Rotorua and Associated Conditions Attention Retired Judge RG Whiting and Hearing Commissionaires.

5 March 2017

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I am addressing the panel as being impartial and able to hear views on the Regional Council actions. Thank you for allowing me 30 minutes to submit this presentation.

I am widening the scope of my original submission here because the issues I have raised with the Bay Of Plenty Regional Council (Regional Council) have not influenced their world view in any positive way. This lack of responsive listening and productive communication and inaction by the Regional Council has been extremely depressing and created a sense of hopelessness among rational, clear thinking stake holders in the region. My rational, reasonable communication on the orientation of thinking to maintain and improve the water quality and associated values of Lake Rotorua is summarised here.

My concerns are that the following issues require some scientific, cultural, moral or economic review and integral thinking. I have read the other submissions and taken care not to repeat overly what others have stated.

My Bio Data

I gained an NZCSci in Biology and Forestry while working for 20 years at the Forest Research Institute in Rotorua focusing on nutrient cycling, soil plant relationships and the effects of land management practices on long term site productivity. I was awarded a Queen Elizabeth the Second scholarship to study at universities in North America (I visited 4) and to be able to enter at any level courses in any faculty (unclassified ambassador status) to study environmental science and environmental engineering as it related to land management to abate waste products like sewage and cycle nutrients. Upon return to New Zealand I continued studying at universities in New Zealand and working in science. I spent 3.5 years as a socio-economic forester to the United Nations world food programme in Vietnam where I experienced a creativity to work with solutions to environmental and social problems for some of the poorest people in the world living within daily life threatening issues. This post lead me to a period of international consulting before realising my calling is to relieve suffering through the correct use of the human heart mind (compassionate use of awake intelligence) so I set up to teach and become highly qualified in one of the great transformative and contemplation traditions of the world. I am before you as someone who greatest skill is not knowledge and arguing from a small knowing ego but as someone being able to quieten my mind and live, when needed, fully in a compassionate heart of service.

In the 1980s I requested the Rotorua District Council give me consent to subdivide land off a farm for soil water conservation and native flora protection and put it under the QU II Conservation Covenant scheme. This met with resistance and took over 2.5 years to achieve, now some 35 years later the Regional Council is requesting people retire native forest land from grazing and fence it off. I feel today I am still more forward looking than the current Councils.

Cause of the Lake Degradation Matched to the Solution of capping

Latest Research - Nitrogen

Legislating against nitrogen leaching from highly productive farms in New Zealand is premature as most scientific research to date on farming methods has focussed on productivity and not environmental protection. Conditioning farmers and reducing income and productivity lacks the faith we can manage our way out of the problems we have created and only recently become aware of. Recent scientific research shows that, it is the ammonia in urine falling on the paddocks in late autumn and early winter that is turned to nitrate and leached to the lake. This is the real source of nitrogen inputs to water bodies via the path through free draining volcanic soils in the central North Island **not the annual stocking rate**. The problem with nitrogen in agriculture is the amount of nitrogen falling on the pasture or soil during approximately May to July, therefore this is what should be capped. The process to convert the nitrogen to nitrate takes about 6 weeks. All a farmer with good quality pasture in the Rotorua Lake catchment needs to do to have an annual animal stocking rate much higher than the capped levels in the proposed change to rule 10 and still meet the proposed nitrogen leaching targets is to do one of the following:

1. Sell stock excess to the capped level, or take it off the farm out of the Rotorua Lake catchment, during late autumn early winter.
2. Place stock excess to the capped level in housing with urine collecting during late autumn early winter and then spread this collect excrement on the land in spring.
3. Or wait for science to refine existing products on the market or develop new ones that influence soil microbial activity which will hold the urine ammonia of late autumn early winter in the soil until spring.
4. Some combination of the above with other yet to be explored or purpose researched options such as carbon rich bed holding fields or enclosures.

The capping formula used by the Regional Council is overly restrictive in the light of the ongoing animal/soil/plant processes and farming options to mitigate nitrate leaching. The emphasis on stock numbers is a convenient compliance set up but relatively irrelevant to nitrogen leaching compared with farm management influences. Farm management for nitrogen conservation is a function of stock numbers over a specific period and the quality of pasture and its nitrogen uptake potential. . A stock number meeting the proposed cap may still leach more nitrogen than predicted if pasture growth is poor due to bad farm management and lack of over sowing etc. There are striking examples right now where heavily stocked farms are producing huge grass growth mass while those of low stocking at around the cap level are not cycling urine nitrogen back into pasture effectively due to poor pasture productivity even in the presence of fertilisation. The spirit of, and the art of

nitrogen conservation on farms should be fostered and science should provide the means to direct farmers towards this. Compliance regarding nitrogen should focus on measurable farm management practices and not only on stock numbers.

It would appear reasonable to predict that fertilizer type and timing would have a huge bearing on nutrient losses especially phosphorus and this is a farm management practice requiring understanding and perhaps regulation.

There are indications that other crops, like Lucerne, may offer lower leaching rates of nitrogen when compared to pasture. Research may well show proposed Rule change 10 is obsolete in a few years by being overly restrictive an oversimplification (not including phosphorus conservation, stock numbers relative to season and pasture growth rate) so it should not be locked into legislation.

Narrow Causal View

Lake Rotorua is not only nitrogen limited but phosphorus limited at times and when nitrogen levels are low relative to phosphorus, blue green algal blooms are possible which creates a seriously negative situation. Limiting nitrogen leaching is not addressing phosphorus, faecal coliforms or sediment inputs to the Lake and may not be the best way to legislate to maintain the Lake quality. Regional Council evidence recommends regulating against phosphorus losses to the Lake but has not included it in the Rule change. We need to be very sure of the science on what the problem actually is and what the cause is and what the solution is and how to legislate for that. I am not convinced the current proposed plan covers this adequately and is clear enough about the management strategy of the soil and the Lake to truly meet the fair distribution of benefits and needs of all stake holders into the future. I feel the solution proposed by the Regional Council is grossly inadequate in serving the people of the region and users of the lake from a social, economic and environmental perspective.

Phosphorus Levels and Inputs.

To maintain Lake Rotorua water quality, phosphorus needs to be restricted along with nitrogen and not to restrict land use to limit phosphorus losses to the Lake is wrong. Phosphorus enters the Lake from all sediment creating activities like 4wd racing, farming, forestry, and any soil disturbance plus overland flow from heavy rain which contacts any phosphorus containing material located in the path of this overland flow. The Plan change 10 is deficient in phosphorous management at the land use level and for all land uses. If we cap farming we need to cap soil use activities including 4wd events, forestry, fertilisation, home gardens, road making, etc.

Trout as an Axionyms for Lake Quality and Lake Function and Use

Lake Rotorua native flora and fauna has been significantly degraded by the introduction of (non-native) trout and the values of British trout fishermen have dominated over, local Maori fishery values, and other options for Lake use for food and recreation and nutrient management. Why are all the Rotorua lakes stocked with trout and why are we not prepared to discuss other fish management options to provide other, perhaps better, outcomes than trout provide? We are prostituting our native lake flora and fauna for income generated by trout fishing for sport and ego and perhaps snobbery. No other introduced species is artificially reproduced and liberated into the wild with fines and imprisonment imposed for illegal harvesting. No refuge centres exist for native

fish and yet there are several for native birds. It is a subjective bias that warm fluffy native things are good and wet cold native things need no consideration. Trout should be either replaced by other species of fish or liberated in huge numbers and fished to a maximum to remove the maximum amount of nutrients from Lake Rotorua. We need sciences and economic assessment done of tourist values and domestic value to low income household from turning Lake Rotorua into a fish harvesting paradise to balance incoming nutrients to keep water quality to a desired standard. Please will the Hearing Panel advise this work be done to improve our nutrient budget forecasts, options and completeness? Many social and economic spinoffs may be present with this option.

Holly Trout, and Un-Holly Catfish

I have asked for the issue outlined above to be considered but I am just fobbed off by Council and one fish scientists talking at a Council science evening, while others scientists more international in hands on experience are totally in favour of the above. However, catfish are now in Lake Rotoiti and will surely get into Lake Rotorua and yet the Regional Council continues to spend ratepayer's money to remove the catfish "bio security breach" even though:

- science and experience shows catfish cannot be eradicated without poisoning the total lake system (not an option at present),
- Council does not know how the catfish got there so they will likely continue introducing.

Who ranked and on what grounds, one invasive non-native species as being totally acceptable and godlike (trout) while ranking another (with food and nutrient removal values) to be totally unworthy (catfish)? Fresh water systems are the highest produces of protein per unit area in the world and can allow large nutrient export from the water via fish removal. We are not exploring this fact and utilising it to make a unique Rotorua fishery for families and visitors to enjoy and benefit from. The benefits would be economical, social and environmental.

Aquaculture

Increasing nitrogen and phosphorus removal from Lake Rotorua from increasing fish harvest has already been discussed. Other forms of Aquaculture have the ability to remove large amounts of the problem nutrients without any negative environmental impact. Other options needing real scoping and consideration for improving lake quality while providing increased employment, revenue and social good, these are:

1. Algae harvesting for food (Corella and Spirulina as examples)
2. Algae harvesting for bio deasil generation, which would provide revenue and offset some of the non-renewable fuels used in the tourism industry. Promoting a sustainable Rotorua and sustainable tourism is a worthy objective for future planning in the region.
3. Muscle farming has huge water cleaning ability and high productivity.

Unethical Apportioning of Pollution Quota

It is morally wrong to marginalise and penalise a fundamental human survival activity like food producing (farming) and not penalise or legislate a worse overall polluting activity more threatening to our survival (tourism). Degradation of climate and air quality is happening through tourism and associated greenhouse gas emissions which are carried out for subjective pleasure and financial reward derived from those seeking pleasure. It will be insanity to aim at a low nutrient budget for a lake while supporting and encouraging global pollution in which, in the extreme, the Lake or we would not survive in resulting environment anyway. Capping farming activity on Nitrogen leaching alone and not capping all pollution activities is morally wrong, destabilising the fundamentals of human existence (food productivity) and letting fun and money win over the order of priorities for human survival. Unrestrained tourism and travel is an attempt at unrestrained pollution (oil on road, extra sewage, extra nutrient into the catchment to feed these travellers, freedom camping nutrient inputs, and fossil fuel burning and associated climate changes, etc.). This is totally insulting to clear thinking residents of Rotorua who work and love the land and live it rather than playing sensually with it and leaving after a little while without a care for their pollution footprint.

At present the greatest pollution source to Lake Taupo is freedom camper excrement into waterways. With 175,000 formal visitor bed nights a month in Rotorua it is reasonable to expect the freedom camping and tourist activity excrement load on Lake Rotorua is currently large and unaccounted for in modelling or capping restrictions. Sorry guys if you freedom camp only one toilet time a day into a correctly sewer location so we can put it in the lake, not you.

Reginal Council Accountability

Poor Use of Funds and Land Ownership/ Rates

Regional Council staffs have used ratepayers' money to spray and crush gorse and prepare and plant public land for pine plantation without correct legal land owners consent. The rightful owners have subsequently stalled after considerable funds were spent and the option of pines has been dropped. This can continue as the funding is given for gorse conversion and credits payment without these agreements being written into the land titles. This is gross miss use of Regional Council rates funded budget. Further the values used for nitrogen leaching for gorse are based upon calculations with too little research and are likely wrong and so the nitrogen gorse credit funding and associated land use encouragement schemes are erroneous and likely distort nitrogen budgets and forecasts.

Land Ownership

Further Regional Council and District Council DO NOT support the identification of land ownership to the public when it is Maori land so neighbours cannot assert legal fencing, invasive weed control across property borders and stock care rights and cost settled. This is unfair and dysfunctional and the sacred Maori land that grows gorse and might produce large nitrogen leaching loads to the Lake

and has been left alone for years while the high end production unit farm is proposed to be penalised under the Resource Management Act. Shall we even consider the no rates paid on many blocks of Maori land!

Deaf Council

I have talked to many councillors both Regional and District and have applied for Jobs with discussion at the Regional Council, interviewed farmers and attended meeting. The Regional Council has lost listening ability due to shrinking of their world view into the upper right quadrante (objective bias thinking). The bias of their perspective of the world (through the top level staff coloured lenses) has created a great deal of stress in the farming community. "We" space (listening and hearing others view - lower left quadrante) by the Council is limited by the Regional Council's view and their pathological attempt to change the views of those who oppose the Council view. The Council does not listen to hear the world view of others and so misses options for change and marginalised those with creative ideas and proposals. Limiting and capping farms into the future without adequate review and investigation of options and all issues is wrong. More investigation and economic and technical feasibility is required into:

1. Low nitrogen leaching farming methods with associated stock and crop management options. Taupo legislation on capping farmers is based upon wrong assumptions around nitrogen leaching in winter and the leaching rate under Lucerne and inadequate economic impact assessments.
2. Higher nutrient removal options for fisheries and aquaculture on Lake Rotorua.
3. Integrated and fair pollution management and financial penalisation and capping across all sectors and activities in the catchment including coffees, sightseeing, industries and populations and associated sewage and bed nights.

Council has become a bureaucratic nightmare to deal with and has limited ability to think outside nitrogen, status quo trout lake values and tourist water adventure on the Lake Rotorua. I get the feeling many Council Staff do not care about the implications of their actions upon the lives of farmers and the region as a totality. Let us have some fresh brain and storm it to get some progress here. Quick fix capping farmers is not going to work well, not going to support a vibrant growth of the region and other better options should be reviewed and used.

Sewage

The existing sewage pre-treatment and land treatment system removes phosphorus and a lot of nitrogen. The Rotorua Lakes District Council (RLDC) has breached the water right conditions for the land application to the forest which has allowed the land owners of the site to threaten perpetuity rights to be reneged due to non-compliance. Basically the RLDC were fired but asked to resign. So now the RLDC aim to treat the wastewater more intensely in plant and discharge to Lake Rotorua so the land owners can have their wish to have the land treatment taken out of Whakarewarewa Forest. This will likely lead to a Phosphorus loading increase and we know from experience the Council will breach water right condition for both nitrogen and phosphorus into the Lake but unlike farmers no individual Council member will suffer financially from this, while farmers are being set up

to be financially penalised (or even prison) from the start to meet nitrogen discharge requirements. The Land Treatment Systems was built with provisions that other crops than pines and application rates be researched to optimise the system into the future. To my knowledge once the system was built none of this work was done and the spirit of the land treatment system has been degraded. Furthermore why are we not considering capping population growth and tourism growth in Rotorua in line with capping farms so inputs for increasing sewage volumes are not a paradox to the farming community. More options and approaches are required across all sectors for fairness. More investigations should be carried out for land application and reuse of sewage and perhaps the overall integrated capping of population is required so the systems applied are fair and morally correct.

Economic Impacts

In the Taupo case, economic modelling of the individual farm costs of the capping was not accurately canvassed. Equally, robust modelling of the regional costs of the capping where not used to inform the decision making. Experience is showing that modelling carried out by farmers at the time (of the proposed cap) to be more correct than incorrect. Research since carried out by AgResearch Ltd has shown that the cost of the capping at an individual farm level is in the order of a 27% reduction in profit per hectare. (Ref: Legard S F, Rendell J, Falconer S, White T, Barton S and Barton M 2016 Nitrogen Footprint of beef produced in a nitrogen-constrained Lake and marketed for a price premium based on a low environmental impact. Proceedings of the International Nitrogen Initiative Conference. Melbourne Australia. p4).

Has the BOP Regional Council accurately modelled the economic impact of the capping and stocking levels restriction on the individual farm unit and on the wider community economic and social costs. Under section 32 of the Resource Management Act the Regional Council is obliged to accurately model economic impacts of legislation and cannot apply legislation with adverse economic impact without social agreement. To date I have not seen robust economic modelling and projected forecasts for capped farms in the Rotorua Lake catchment only global summaries by Regional Council staff that no problem exists. I have seen examples of Council staff attempting to persuade farmers and me that farmers may well be better off financially when capped and other such coercive, irrational subjective attempts to have their own world view accepted and implemented. Would the Regional Council like to operate in an environment of no rate income increase for 20 years with increasing costs? Absolutely NOT. We need solution based exploration and I have listed plenty for inclusion. Who is ultimately being paid to do that job and where is the creative thinking happening??

Summary:

The rules to cap farmers' nitrogen leaching via limiting stock numbers are unethical and immoral because:

1. Detailed public input (Regional Council staff closed ears) and accurate economic modelling is lacking for the proposed legislation.
2. It fails to take current research into consideration and fails to allow maximum productivity and financial gain to the farmer and the capping is an oversimplification of the social and environmental issues and problems and lacks integral and moral excellence.
3. The science relating to the cause and solution of the problem is either not included (phosphorus inputs, outputs from the Lake via aquaculture etc.), or out dated, and aspects of the possible solutions have not been explored so the rules are overly restrictive and premature in their current form.
4. There is a gross omission of detailed investigation into lake values usage for fish and other forms of aquaculture as food, social support, sport and nutrient removal.
5. The current preferred option to improve sewage treatment in plant and discharge to Lake Rotorua is offensive in the face of the uncapped tourist trade and previous asserted spiritual and nutrient removal values offered by land treatment. Council has a history of water right discharge breaches and not having a land treatment buffer will further exacerbate such breaches in the future.
6. The Resource Management Act aims at making individuals and enterprises responsible and accountable to not pollute the greater environment from activities they undertake. Encouraging tourism has to be included in this legislation and any conditioning of enterprises needs to be fair and support sustainable environmental, social and economic values and be inclusive across all sectors. The current proposed Change to Plan 10 is grossly deficient in many ways and options for improvement have been presented to Council without any meaningful acceptance or assertion for inclusion or investigation. I strongly recommend the issues presented here be explored and where appropriate be included in the plan change and supported to realisation to improve goodness in the region. I hope some or all of what I outline gets support from this Hearing Panel Commissioned for unbiased review.

Thank you.