

LakesWater Quality Society Incorporated
Minutes of the Annual General Meeting held at Pikiaro Rugby League Club Rooms,
Mourea, at 10.00 am on Monday 1 February 2016

Karakia: Tai Eru

Welcome:

The Chair welcomed everyone and acknowledged the organisations that are very relevant to the LakesWater Quality Society: Hon Todd McClay (MP for Rotorua), Chairman Doug Leeder, Crs Lyall Thurston, Neil Oppatt, (BOPRC), Deputy Mayor Dave Donaldson, Crs Mark Gould, Janet Wepa, Glenys Searancke, Rob Kent, (RLC), Geoff Palmer, John Dyer, Leo Meharry, Phill Thomass (Rotorua Lakes Community Board, Eddie Grogan, Andy Bruere, (BOPRC Management), Prof David Hamilton, Waikato University, Willy Emery (Rotorua Te Arawa Lakes Trust), Te Taru White, Incentives Board, Life Members Nick and Liz Miller, Ian McLean, Glen Snelgrove (Rotoma/Rotoehu Ratepayers, Hilary Prior (Lake Rotoiti Community Association) Libby Fletcher (Lake Tarawera Ratepayers Association), Rohan Wells, NIWA and about 77 members and friends.

Apologies:

Mayor Steve Chadwick, Karen Hunt, Warren Webber, Marcus and Jan Wilkins, Barnet Vercoe, Sherilyn Coney, Terry Becket, Sir Toby Curtis, Rt Hon Paul East, Fred Hoogveld, Tony Lipanovic

Minutes of Previous Meeting:

It was moved that the minutes were a true and fair record of the meeting. *John Green/Bob Armstrong*

Chairman's Annual Report:

The Chairman began by noting that the society was to have a changing of the guard but there was continuity within the committee with some wise heads and knowledge remaining. He reflected that there had been 9 symposia over the last 15 years and it was an extremely effective process to communicate knowledge. It was about recognising the problem and lack of knowledge, developing a programme, identifying key speakers both nationally and internationally and inviting the right stakeholders to participate. But the most important benefit had been the Proceedings of each symposium which had faithfully recorded the presentations for posterity. The knowledge gained from these symposia had put the Rotorua region light years ahead of other regions of New Zealand on water quality issues.

Out of the 2015 symposium on Lake Weed and Wallabies had developed a group of stakeholders, including LWQS and Regional Council staff, to develop lake weed plans for all lakes and work with LINZ to clean up the lakes.

He said it was time to go back to family in Wellington in the knowledge that he and Ann leave the Society in very good heart and comfortable that LWQS is no longer a loan voice in the wilderness. The water quality issues are well understood and supported by many in the Rotorua community.

It was moved that the Chairman's Report be accepted.

Mark Gould/Hilary Prior

Matters arising from the Report: None

Financial Report:

The Treasurer, Marcel van Leeuwen, presented his report commenting that the symposium had resulted in some profit for the year

It was moved that the financial report for the LakesWater Quality Society Inc. for the year ending 30 September 2015 be received and approved.

Mary Stanton/Sandra Goodwin

It was moved that Stefan Bennett be appointed as auditor for the next financial year.

Marcel van Leeuwen/John Green

Life Membership: Ian McLean spoke in favour of Ann and John Green being made life members of LWQS. He said that Ann had been the engine room of the society for the 10 years as she had served as secretary. She had attended meticulously to a vast amount of administrative detail. Her work held the committee and the society together. In addition, she worked as symposium secretary for 5 successful

symposia, several workshops and made sure that these were planned and run without hassles. Her most lasting achievement, however, was the editing and production of Proceedings for the Symposia. She has steadily improved the quality of the proceedings year by year. These proceedings are of immense value, not only as scientific reference papers, but also as a record of the pathway along which LWQS has led the restoration of the lakes. Ann has done this work while carrying significant responsibilities for her whanau, writing and publishing a book, and serving the community in other ways. Ann has done a splendid job for the Society.

Ian noted that John has chaired the committee also for 10 years. During that time LWQS has gone from strength to strength. He had two particular personal achievements. He played a significant role in the crunch negotiation with the government on the \$74 million funding for the lakes programme. When the BOPRC Regional Policy Statement (RPS) came out in draft, it implicitly allowed a period of a century or two for Lake Rotorua to have improved water quality. Against some strong opposition John prevailed with the view the lake needs to improve within a decade or so. The much tighter timeline in the RPS has given a spur to action to improve water quality. During his term as chair, LWQS has been influential in providing drive, intellectual input and community support for the Lakes Restoration Programme. John has also initiated work on the lakes not covered by that Programme. John has also contributed to the community in other ways, especially as chair of Grow Rotorua and as a director of Quayside Holdings Ltd. John has done a great job for the Society.

Ian thanked them both for their achievements on behalf of LWQS and the Lakes. He moved that Ann and John Green be made life members of LakesWater Quality Society.

It was moved that John and Ann Green be made life members of the LakesWater Quality Society.

Ian McLean/Don Atkinson

Election of Officers and Executive Committee:

As the current chair was resigning John conducted the vote for the office of Chair and then stood down.

Chair	Don Atkinson	(Rotorua)	<i>Ian McLean/Liz Miller</i>
--------------	--------------	-----------	------------------------------

The new chair then took over the running of the meeting

Treasurer	Marcel van Leeuwen	(Okareka)	<i>John Green/Jim Howland</i>
Secretary	Nic Roxburgh	(Rotorua)	<i>Ann Green/Brian Stamp</i>
Committee	Tai Eru	(Rotorua)	
	Libby Fletcher	(Tarawera, LTRA)	
	John Green	(Rotorua)	
	Jim Howland	(Rotorua)	
	Ian McLean	(Rotorua)	
	Leo Meharry	(Rotoma Rate Payers, CB)	
	Hilary Prior	(Rotorua, LRCA)	
	Geoff Rice	(Lower Maketu, Tapu-ika Iwi Authority)	
	Glenn Snelgrove	(Rotoma, Rate Payers)	
Phill Stamp	(Rotorua, CB)		
Warren Webber	(Rotorua)		
Neil Callahan	(Tarawera)		
Sandra Goodwin	(Okareka)		

It was moved that the above nominees be accepted as the committee. *Gifford McFaddon/Bob Armstrong*

Retiring Members:	Ian McLean	Rotorua	1999 (Lake Weed Control Society)
	Ann Green	Rotorua	2005
	Brian Stamp	Rotorua	2006
	Mary Stanton	Rotorua	2009
	Tony Lipanovic	Rotoehu	2013

The Chair said that Ian McLean was the father of LWQS when he saw the need to widen the old Lake Weed Control Society to encompass the broader issues of water quality. Ian has had 16 years of involvement with the Society, 6 as Chairman and the balance as a committee Member. His vision, intellect and drive have been pivotal in the successful restoration and good management of the lakes.

He also thanked Brian, Mary and Tony for their involvement and insight.

Outline of Objectives:

Don said that the Society has a raft of continuing work associated with nutrients. For Lake Rotorua, StAG has finished, but the rules are yet to be implemented and are ongoing. Members of our committee will act in a supportive roll and be involved in the consultative group and monitor the Incentives Board.

We will also continue to monitor the Ohau Channel wall repair and be involved in the sewerage schemes at Rotoma, East Rotoiti, Rotoehu and Tarawera. There are complex issues emerging in the greater Tarawera catchment and the 8 lake system which will be critical for our society to understand.

Our original society was founded on the desire to control lagarosiphon in the 1960s and diquat was considered an appropriate control. But now there are more substantial incursions of lagarosiphon and a variety of other weeds such as hornwort and egeria which require a more extensive and expensive programme. We need to do better in controlling and eradication and have other tools in the toolbox such as Endothall which is going through the consent process. LWQS will be part of the working group developing lake weed plans for each lake.

Presentations were given by:

Rohan Wells, NIWA, on the weeds in the Rotorua Lakes and some solutions

Rohan showed a variety of native weeds in our lakes and then introduced New Zealand's worst introduced invasive weeds, lagarosiphon, egeria and hornwort, which have become an increasing problem in our waterways. Diquat gives some control. At Lake Rotoehu weed is harvested but the resulting weed mass generates the conditions to create weeds.

Why do we control weeds?

- to manage pests to prevent further spread
- to protect threatened indigenous ecosystems and species (where feasible and practicable)
- to maintain amenity values

There are a large number of options –

- | | |
|----------------------|--|
| • Chemicals | Mechanical digger, cutter or harvester |
| • Suction dredging | Rototilling |
| • Grass carp | Lining |
| • Hand weeding | De-watering |
| • Habitat alteration | Light limitation |

Chemicals are often more cost effective and can achieve outcomes not achieved by mechanical means. Sonar can now generate a very accurate picture of weed beds and the types of weeds which helps in management.

Some people are actively against herbicides and in Europe there is a ban on their use. This has to be a community decision. Modern chemicals still get a bad rap from the old days when the use of DDT was common place with many environmental consequences and health risks.

The ideal aquatic herbicides –

- selectively kill target species and cost effective
- are non-toxic to other aquatic life
- are not bio-concentrated, metabolised and removed
- are biodegradable to innocuous elements
- are short-lived in the environment
- have no risk to human health (e.g. carcinogen)
- have acceptable environmental impacts

The two more common aquatic herbicides used in New Zealand are diquat and endothall and there are differences.

Diquat is strongly bound to negatively charged particles – de-activated. Endothall is not. This has consequences in the withholding periods and the drift.

Both are selective. Diquat can target lagarosiphon and hornwort and encourage re-growth of natives in areas that were once dense weed beds. But it does not kill all the shoots or the below sediment portions – so its effects are usually short-lived. A follow up can achieve good results as its target is quite susceptible in this stage.

Above the no observable effect limits (NOEL) the first symptoms for endothall in chronic (life time) studies are thickening of the gut as it is acidic. For diquat it is cataracts.

Both diquat and endothall are extremely safe in water bodies with LC50's being reached only when swallowed in swimming pool size quantities (3,000 – 15,000L). An adult would have to eat 1.4 tonnes of fish from treated water to reach the LC50 level for endothall. The New Zealand label carries a swimming restriction for the application area but the US-EPA has removed this restriction.

There are reports in the literature of a rapid release of nutrients after spraying followed by algal blooms, identifying nutrient implications of killing a high bio-volume of weed in a small water body. However NIWA have not monitored such a result. Without weed control, weed beds grow and store even more nutrients to later break down with annual senescence. A dense weed bed will create anoxic conditions and high pH's causing sediment nutrient release and can lead to algal blooms, or can flip from one state to another (weed dominated to algal dominated). The cycle can be broken by preventing weed beds re-establishing and lowering nutrient levels.

NIWA have had excellent results using endothall in New Zealand and found that it can eradicate lagarosiphon and hornwort even at 50 times less than the label rate when longer contact times can be achieved. Cool water is no barrier to activity; it extends its persistence.

Andy Bruere, Lake Operations Manager, Bay of Plenty Regional Council – an update on the condition of the Lake Rotoiti Ohau Channel wall and the way forward

Andy said that the alum programme had made a difference to the water quality of Lake Rotorua but there were potential risks to using it. BOPRC had taken a conservative approach to its dosing regime and continue to monitor and consult with the community. We always talk of the problems in the alum management programmes but we should also understand the benefits. Alum dosing balances the phosphorus levels in the lake within a conservative level. In the summer of 2015 the release of P from lake sediments increased in-lake P levels to high concentrations which told us that within a very short period of time the lake could return to its old habits if we stopped alum dosing for any reason.

The Ohau diversion wall was commissioned in 2008. It is a steel sheet pile wall with a king pile construction every third pile. The resource consent approval expires in Oct 2017 and we are preparing to apply for a new consent. An underwater inspection in May 2014 first showed there was a corrosion issue.

In 2008 the diversion wall was completed and water quality in Lake Rotoiti improved after about 3 years. Lake Rotorua's water quality is currently reliant on alum dosing and showed significant improvement in about 2010. The consents for alum dosing expire in 2018 and 2019. BOPRC has agreed to notify land use change rules in Feb 2016 that will result in reductions in the catchment nitrogen load to the target load of 435 t. The time expected to reach the in-lake target of those changes is in more than 35.

In the meantime the remaining life of the Ohau diversion wall without intervention is from 3 to 20 years. The BOPRC are committed to extending its life. The cause of the accelerated corrosion is possibly due to several factors; possible contamination during manufacture on the metal surface, well oxygenated water and microbiological induced corrosion. The corrosion is worse closer to the water surface There has been a complex assessment but investigations are not yet complete. The advice is that the steel specification met the quality guideline.

The way forward is a contract for consent replacement and Beca has been contracted to apply by December 2016. The community will be consulted and science collated. We are requesting a 35 year consent.

Opus Consultants are advising on the options for the Ohau wall protection and maintenance to maintain the wall's 50 year life.

The University of Waikato have completed an Ecotox Report on the alum programme which has been presented to the community and is available on our internet. This will start the discussion on alum use for

wider consultation. The University of Waikato has also modelled the impact of alum use on Lake Rotorua. This report is also available on the BOPRC web site.

Summary

- Council committed to wall repairs → Options being assessed
- Council committed to new consent → 35 years/BECA contract
- Rotorua water quality is reliant on alum dosing → need community dialogue
- Land use change rules targeting 435 t N → Feb 2016.

Hon Todd McClay, Minister of Trade, MP for Rotorua

The Minister congratulated Don on taking over the chair of LWQS and thanked John and Ann for their work. He commented that it was good to know the way forward through science on weed. To understand Mother Nature everything has to be science based to make informed decisions. Our views may change a bit but they must be grounded in science.

He recognised the strong women in the community, noting that Libby Fletcher is doing good work at Tarawera and Hilary Prior at Lake Rotoiti.

A huge amount of progress has been made. Stakeholders are talking together very constructively and making tough decisions with BOPRC. Last year was a good year for Rotorua and we must continue this year to make progress together.

Deputy Mayor Dave Donaldson, Rotorua Lakes Council

Cr Donaldson acknowledged the excellent skills and good work of Ian McLean and Warren Webber on the sewerage schemes and appreciated the help they have been to the Council.

He then read a letter to LWQS from Mayor Steve Chadwick announcing the proposed establishment of a Lake Rotorua Protection Trust to support not only lake restoration but also economic growth and landowner interests. It would work alongside the rules and incorporate the incentives programme. It will be an independent trust providing support and leadership.

Chair Doug Leeder, Bay of Plenty Regional Council

Cr Leeder said that the Regional Council had a good working relationship with LWQS. His Council had looked at the operation of the Okere Gates in the event of accidents in the Kaituna and reviewed their management and operation.

From a governance point of view, BOPRC should not expect ratepayers to pay for a wall for 50 years that lasts 15. We want councillors to be fully briefed on what lessons have been learnt. The original \$15 million was reduced to \$10. What changed? What can we learn when doing big capital projects?

The land use change rules will be notified in February. The StAG process has been very good in advising Council. Please consider the impact on individuals. There will be minimal disruption to landholders of less than 5 hectares but the pastoral farmers will find it extremely difficult. It is not the rules but the actual position of the dairy industry in this country. Low returns are going to have a big effect, making the rules to land use change difficult.

BOPRC staff are looking at the Lake Rotorua Protection Trust. We are spending public money and the Incentives Board are working very well. This is not just a Rotorua issue but a New Zealand Inc. problem. The challenge going forward for us all is maximising the management of our natural resources in a sustainable way. What is the capacity of these natural resources to sustain them going forward? Is the objective to be constrained by the environment?

Prof David Hamilton, University of Waikato

The National Science Challenge is at a critical point. LWQS must keep an eye on our biological heritage and our land and water.

The high level of phosphorus has always been a surprise. Alum has been able to inactivate 50%. As a consequence P management is very important. Fifty tonnes comes through underground water from streams and storm flows. Some insightful thinking is needed.

Te Taru White, Incentives Board

Iwi will always support the integrity of water and its quality. The question is how much will we give up to do that. Alum dosing is a short term view. We support endothall. What is preventing that being used?

Rohan Wells, NIWA: The process involves developing plans for each lake, consultation and then getting LINZ involved. More research is also needed.

Don Atkinson: Endothall is going through the consent process and hopefully this will be completed in 6 months. The other problem is money. LINZ funds weed control of lakes supported by regional councils. A working party has been set up to work on lake plans of weed management.

Nick Miller, LWQS: What warranty protection came with the wall?

Andy Bruere, BOPRC: There was no warranty on the wall, but there will be in future.

Mary Stanton, LWQS: I smell the weed. It is extending all around Okawa Bay and moving into the main body of Rotoiti. Where is the money for this, sewerage and drinking water? I am tired and sick of hearing about these problems.

The chair thanked the kitchen staff for their support and hard work (Diane Atkinson, Jude Webber, Faye Stamp and Kaye Lillico). He also thanked Leo Meharry and Willie Emery for their early start and commitment to the pork lunch.

The meeting closed at 12.15 pm.