
QUESTIONS

Cr Tipene Marr: I am probably one of those people that is anti-chemical and I felt you are fairly well brainwashed. Just because it is good in America, how good is America at doing things? We have Monsanto and DuPont seeding plants that do not die with Roundup. We know it is happening. You sound blasé about how we use these chemicals. You cleaned up Ngakapua Lake in Northland but only a small lake and it did not look very lively after all the chemicals. It looked pretty black to me. The 10 hectare lake you talked about and said you would have to drink about 15,000 litres of water to be affected but we are all different people with different bodies. Someone might drink 1 litre and become cancerous or sick. You cannot say 15,000 litres to get affected. As I say, because it is good in America does not mean to say it is good for us.

I look at the root of the problem. Why are these weeds growing? I did see Mary de Winton's photograph of Wanaka, lovely clear water but it does not always mean lack of nutrients. There is farmland around Lake Wanaka as well and therefore nutrients which are one of the things that help weeds grow. They have got plenty of stuff to feed on. I think it is the bigger picture in New Zealand without heading down the line of just nuking everything, chemically.

Rohan Wells: Very good comment. I am sorry to have been blasé and to have glossed over it. It would have been good if you could have been at two of the hui that I ran or at a previous LakesWater Quality Society meeting where I had the opportunity to spend an hour to run through and explain this. It is very hard to go into all details in such a brief period of time.

We do get the chemicals here and look at them from the New Zealand perspective and what can be achieved. One of the things that impressed me most on the hui that we had down at Utuhina, was one of the Kaumatua stood up after the meeting and said, 'You guys brought these poisons to our lake'. He was referring to the weeds as poisons. Then he said, 'Now you want to add more poison to our lake'. He said, 'I appreciate how well you have explained it and I accept that we need this other poison.'

It is unfortunate and I will make myself available if you want to go through it in much closer detail. People do have concerns and this is the kind of opportunity that we need to talk with community groups to give people confidence that it is a workable option. These herbicides are so specific, not just to plants but to these particular weeds. If you go on your golf course, there is sure to have been a chemical on the putting greens to ensure that they are weed free.

I am sorry, conceptually to some people it is an anathema to put a poison into a waterway and I can totally see that. The consequences of not managing the problem is what is going to manifest itself around the corner, and unlike a lot of water quality issues, if you have a weed in a water body it is not just going to sit there, it is going to multiply. We are trying to protect lakes by stopping invasions in the first place. It is a series of choices about what you are trying to achieve.

Tipene Marr: Is it going to kill them or will they grow back again. Some of those photos you showed, where you had repeated the treatment still showed stuff growing up again. We would just go on and on forever.

John Gifford, Chair: That was with diquat, which is only giving you a chemical control of the top of the plant and the endothall that Rohan was talking about is an eradication

option. It kills the roots of the plant of lagarosiphon and hornwort so there is a difference. Not all of these things act in the same way.

Tipene Marr: And they become resistant and then we go for something that is stronger and it just goes on. No, we have got to stop the nutrients.

John Gifford, Chair: One thing we should keep in mind is that rather than just focus on the chemical side of things what we have heard this afternoon is a broad range of strategies that we can potentially use from a strategic approach, the different toolboxes and obviously chemicals are one part of that whole toolbox mix.

Warren Webber, LWQS: Rohan, I was encouraged to hear some of that data on endothall. Diquat has always been our fall-back position and has been very gentle on native plants. You did not mention how endothall affects native plants? Could you also comment on the impact of the size of the waterbody. Is endothall only going to work in shallow and small lakes or have we got something that has true application to the littoral zone of our larger lakes?

Rohan Wells: In terms of efficacy for invasive species, endothall is limited to hornwort and lagarosiphon. It does not affect the egeria or the elodea. We have looked at it on 34 other native species, and the only ones that it has some effect on is the milfoil, *Myriophyllum triphyllum*. It does not have a Maori name that I know of. It was affected marginally and had a full recovery and then of course it had much more habitat so it really expanded its range.

Size of water body - we have had limited experience with endothall. We have eradicated lagarosiphon and hornwort from 8 or 9 water bodies to date, the largest being 6 hectares. Two months ago it was used in Lake Ianthe because lagarosiphon is invading the West Coast lakes now. We would like to eradicate it with one treatment. If this endothall breaks down into water and carbon dioxide, if we can eradicate it with one treatment and do not have to do it again, that is what one would consider ideal. Nothing residual and eradication of the plant, lake restored, that would be great. If you pull it out by hand, even better.

Lake Ianthe is a much larger lake. Next week I am going down to have a look. That is more of a similar scenario to our Rotorua Lakes. Lake Ngakapua in Northland was a 6 hectare lake and we only treated 0.25 hectare and achieved eradication so can we scale up? There are so many more questions that we want to know around its operation. Is it a useful tool? So far it has exceeded expectations by a long way.

John Green, LWQS: Can I make a comment? Having lived on Lake Rotoiti for over 15 years, diquat was only ever going to be effective for knocking back hornwort and year after year, after year, after year, after year, we have hornwort coming back and causing problems. Tipene, I would like to take you for a ride on Lake Rotoiti and show you just what a problem it is.

I am a little bit worried about who makes the decisions and how we are going because on the one hand LINZ is responsible for sorting out the weed problem. It is not Te Arawa, but obviously the Bay of Plenty Regional Council has a role. Rohan, what you are saying to me is that we have taken 24 years to get endothall into our lakes yet it is used currently around the rest of New Zealand. You have eradicated hornwort in the South Island and had no problems. Why don't we put the whole thing on the table? We want endothall. We want it now. We want it sprayed to kill hornwort. Rohan says the EPA (registration) costs

a huge amount of money, \$800 million, and they have put a lot of science into research. Surely we are entitled to piggyback off their work and costs as an efficient approach to our approval processes.

Is this a silver bullet? I suggest it is because certainly diquat is not and you have demonstrated that you cannot get the concentrations of diquat down to the root system. Endothall is about getting to the roots and killing hornwort forever. I would suggest we stay on that track. There will be people who do not like poisons. We have to address that as part of the process but please get endothall approved and then get it working. Otherwise we will be here for another 50 years because nothing else is happening. Our Society originally started as a weed society – that was over 50 years ago.

Brian Stamp, LWQS: We have 4.5 million people and different regulations throughout the whole of New Zealand. They have resource consents in the South Island to use it and yet up here we have to get a resource consent. Why isn't it the same for the whole of the country? We have rules in this country but every council has different rules to the one next-door. They should all be the same. I think Central Government should be setting a standard. I just cannot understand why they are all different. I was on LakesWater Quality some years ago and pulled out because it took so bloody long for anything to happen. Endothall has been around for yonks.

Tipene Marr: Okay so where has it been done successfully? Wanaka is it? What lake has it been done and dusted and we will go down in six months' time and have a look.

Rohan Wells: In Southland we tested it in 8 different water bodies and eradicated it from 7. In the South Island hornwort in Centennial Lake in Timaru we gave it one treatment and eradicated it from there. That was the last site of hornwort in the South Island. It was a system with a flowing stream as well. It took us one year to get approval to use it.

Someone from audience: Have you tried something the size of Rotoiti?

Rohan Wells: No we have not. As I said, we are going to look at Lake Ianthe next month but it may not be useful on a much larger scale. If we do not try we will not know. We are scaling up slowly and looking at the results and refining the tool as we go. When it was used in Lake Benmore, at our initial look a month later, we thought it had not worked. But going back about 18 months later it had. Lagarosiphon had all gone from the treated area.

Tipene Marr: How big was Benmore?

Rohan Wells: Not out of the whole lake - the area that was treated. The scale of treating something like Lake Benmore is massive. I am not making any promises. I am giving you the information that I know and so far the largest lake that we have eradicated it from is 6 hectares and we only treated 0.25 hectare. Even if it is only useful in a smaller scale it could be used on site specific areas maybe in Okawa Bay. We will see what benefits we can get. This is a decision that the community can make. This is why we go to hui, to involve people. I am not making decisions for the community. I can show you lakes. I have taken plenty of Iwi to see lakes and I can show you photos. I am happy to sit down with you and show you much more detail if you are interested.

Warren Webber, LWQS: This is not a question. It is more a comment. I am looking forward to the trialling on larger water bodies. We have seen all afternoon that weed exists in the littoral zone of the lake. We do not have to treat the whole lake, in fact nothing deeper than 15 metres. We only have to treat the side of the lake. I am looking

forward to the application of endothall on large water bodies and see the proof of the pudding. I commend you for the work you are doing. Thank you

Ann Green, LWQS: We have lived or visited Te Weta Bay since 1994 and every year we got the letter to say there is to be spraying, sometimes twice a year. When considering the cost of using something like endothall, included in the calculation should be the costs of all those years of using diquat. I suggest that the cost would be equivalent, or maybe even better using endothall just the once.