

A 10 Year Lagarosiphon Management Plan for Lake Wanaka

Analysis of Submissions received on the Consultation Draft

20 July 2005

The Submission Process

The 10 Year Lagarosiphon Management Plan (draft for consultation) was released by the Lake Wanaka Management Group on 27 April 2005. The media release contained information about the submission period (28 April - 27 May 2005) and where the draft plan could be accessed, together with encouragement to respond by making a submission.

A small number of submissions resulted in a further media release from the Management Group on 24 May urging those with an interest in the draft plan to have their say.

On 25 May the Upper Clutha Messenger devoted a full page to a message headed “No Diquat in our Lake”. This asked readers to empower themselves by indicating which statements they disagreed with in the accompanying form and sending their response to the Queenstown Lakes District Council. (Appendix 1)

When submissions closed on 27 May the Queenstown Lakes District Council had received submissions from 56 respondents.

The form of submissions

Three types of submissions were received:

- Letters (5 submissions).
- Submission forms from the draft Plan with instructions to return to QLDC and featuring the QLDC logo (19 submissions).
- Forms listing 19 statements for submitters to make a selection from - otherwise identical to the Plan forms including the QLDC logo. This form appeared in the Messenger on 25 May (41 submissions).

Note: There was no indication of who, whether an individual or group, had created and inserted the alternative submission form in the Messenger. Accordingly that form will be referred to as the “Messenger form” in this submission analysis.

Number of submissions received

A total of 65 submissions were received. The difference in number of submissions and submitters is the result of seven respondents making two submissions. In each case both

the “Messenger form” and the Plan form were submitted. In one case three submissions were made, one “Messenger form” and two Plan forms.

Where submitters live

Almost all respondents live locally in and around Wanaka and Hawea Flats. The exceptions were one respondent from Dunedin and two from France.

When submissions were received

All but three submissions were received on 26/27 May, the final two days of the submission period. The statements that appeared in the Messenger on 25 May and the Management Group’s media release of 25 May appear to have promoted this response.

Implications of the “Messenger form” on submissions

That the “Messenger form” was almost identical to the Plan form - apart from the list of statements - served to confuse respondents (statements made in submissions). From the QLDC logo and directions to send the form c/o Chris Hawker, QLDC a number of respondents assumed that QLDC was seeking responses to the list of statements rather than the draft 10 Year Plan.

The 41 respondents who submitted the “Messenger form” can be grouped as follows:

1. Respondents who signed the form unchanged (12).
2. Respondents who indicated which statements they did not agree with (26).
3. Respondents who modified the actual statements and added other statements to express their views (1).
4. Respondents who attempted modifying the statements but then added a written submission because their views could not be accommodated (1).

Submitters in groups 1 and 2 (38 submissions), were responding to prescribed statements that focused on limited aspects of the draft 10 Year Plan. For instance, of the 19 statements made on the “Messenger form” 12 are directly to do with, or associated with the use of Diquat/chemicals in Lake Wanaka.

Other prescribed statements dealt with issues that extend beyond the scope of the draft 10 Year Plan. For instance detailed requirements about the operation of the Management Group do not belong in the 10 Year Plan, nor do detailed operational requirements - these belong in the annual Control Programmes. These statements will not be included in the analysis of responses to the 10 Year Plan.

In summary the “Messenger form” carrying the QLDC logo introduced an alternative consultation (both selective and extended) within the formal consultation over the draft 10 Year Lagarosiphon Management Plan. This caused confusion amongst submitters, confounded the consultation process and complicated the analysis.

Analysis of Submissions

All submissions that relate directly to 10 Year Lagarosiphon Management Plan for Lake Wanaka were included in the analysis.

In light of the complexity introduced by the “Messenger” form, submissions were divided into two groups:

- Submissions contained in letters and on the submission form enclosed with the 10 Year Plan.
- Submissions on “Messenger” forms.

Whereas individual views were able to be identified from letters and forms associated with the Plan, submitters using the “Messenger” form were constrained by the listed statements. Two respondents who used the “Messenger” form included views about topics in the Plan that were not listed on the form. Accordingly their submissions were included with the first group.

Operational matters that fall outside the scope of the draft 10 Year Plan

A number of operational issues were raised by submitters in both groups that are outside the scope of the draft 10 Year Plan. These matters will be considered separately by the Lake Wanaka Lagarosiphon Management Group.

Analysis of submissions (letters) and forms enclosed with the draft 10 Year Management Plan

- Letters, Plan forms and two ‘Messenger forms (that included topics outside those listed) were read and the points raised were assigned to the appropriate section of the 10 Year Plan.
- Each submission was analysed against the section of the Plan according to whether it supported that particular section, introduced a new perspective or did not support that section.
- A response was provided to each submission that acknowledged support, commented on points raised and provided an explanation if the points were not considered to be correct.

Table 1. Submissions (letter and Plan form) by section of the 10 Year Plan

Sect No.	Section Title	No. of Subm	Submission views	Lake Wanaka Lagarosiphon Management Group response
	10 Year Management Plan - whole document	2	<p><i>Support:</i> Support management and control measures including Diquat. Get on with implementing the plan.</p> <p>It is critical for the Wanaka area, community and lake to have a major campaign to effectively get rid of Lagarosiphon including: maximum effort in a concentrated time, combo of chemicals, effective suction dredging and where practical, hand weeding. Just do it!</p> <p>There seems to be a gap between the plan and the actual.</p> <p><i>Should do more:</i> Lagarosiphon is so voracious and has an enormous ability to reproduce - more of the same will not work. Carry out trials with methods to see if Lagarosiphon can</p>	<p>Your encouragement to implement the Plan is acknowledged</p> <p>The urgency to take comprehensive action is acknowledged.</p> <p>Lagarosiphon control operations are currently being monitored, evaluated and improved. Agree about the urgency of controlling Lagarosiphon. Trials to find the most effective combination of methods for containing Lagarosiphon in defined areas of the lake will be</p>

			be contained. Need to trial and register systemic herbicides. The public don't appreciate what we're up against. <i>Treatment worse than problem:</i> Lagarosiphon may not be as much of a problem as has been presumed - no evidence provided - the treatment could be worse. Are you sure you will do more good that harm with this programme?	2	considered when the monitoring results from NIWA and ORC are provided to the Management Group. We agree that suitable systemic herbicides need to be identified, trialed and registered. These issues are addressed in Proceedings of the Lagarosiphon Workshop (2003), An Interim Control Programme for 2004/05 (2004), particularly Appendix 1 "Why Diquat for Lake Wanaka", and the draft 10 Year Management Plan 2005.
1	Introduction	1	<i>Comment:</i> "Vision" unrealistic but submitter supports control and containment (Goals)		The vision provides long term direction and motivation. Whereas visions may not be easily attainable, goals certainly should be.
2	Background	-			
3	Responsibilities of the parties to the MOU	-			
4	Goals	1 1 1	<i>Support:</i> control and containment. Contain the northern front and minimize spread up the lake by diver surveillance. <i>Definition of pristine:</i> Lake not pristine - trout.		Support for Goals acknowledged. Acknowledge support for top treatment priority. Pristine is a relative term - there are probably no lakes in NZ that are pristine in a purist sense. However, according to a scale of lake health developed by NIWA, Wakatipu and Wanaka are well ahead of other lakes on a range of measures used. Lake Wanaka has fallen behind L Wakatipu because of the invasion of Lagarosiphon. There is no residual effect from the use of Diquat
5	Controlling Lagarosiphon in Lake Wanaka		How can a lake be pristine after it's been sprayed?		
5.1	Component 1 : treating Lagarosiphon in the lake	1	<i>Supports:</i> Supports priorities except controlling high biomass beds - stop		It is necessary to treat high biomass beds because they are the source of fragments dislodged by wind

<p>and waves that then drift and re-infest. They are also the source of fragments that are transported around the lake by boats. These issues are compounded if the beds are surface reaching.</p>		treatment.	
<p>See An Interim Control Programme for 2004/05 (2004), particularly Appendix 1 “Why Diquat for Lake Wanaka”.</p> <p>For high biomass beds a reduction in Lagarosiphon can only be effectively achieved by using herbicide. No group of energetic people or people from community service would be able to remove that kind of biomass from that depth of water in any other way.</p> <p>See response to first statement.</p>	<p>1</p> <p>1</p> <p>1</p>	<p>Developing the approach (use of herbicide currently Diquat)</p>	<p>1</p> <p>1</p> <p>1</p>
<p>See response to first statement.</p> <p>Your view is noted. The participants of the 2003 Lagarosiphon workshop agreed unanimously that the problem was so serious all available tools were needed.</p>	<p>1</p> <p>4</p> <p>1</p>	<p>Do not support use of chemicals: Do not use chemicals - cause health problems.</p> <p>No chemicals - man’s laziness.</p> <p>No pesticides - put people on the job, community service a good idea.</p> <p>Opposed to any chemical control – potential for accumulation thru the food chain</p> <p>invertebrates - trout - humans + downstream effects on other towns using the Clutha as water supply.</p> <p>No chemical applications in the lake.</p> <p>No chemicals - a mandate is still in force re no herbicides.</p>	<p>1</p> <p>4</p> <p>1</p>
<p>Working to control an invasive undesirable weed that is spreading throughout the lake is consistent with the Purpose of the Preservation Act.</p> <p>Agree about treating the weed at the fastest possible rate. Lagarosiphon grows and spreads rapidly.</p> <p>Your view is noted.</p>	<p>1</p>	<p>Breaches L Wanaka Preservation Act - purpose and S 8(1).</p> <p>No chemicals without referendum</p>	<p>1</p>
<p>That scenario is part of the adaptive management approach when various control methods are trialed and assessed under controlled conditions.</p>	<p>1</p>	<p>Support: Chemicals should be applied at maximum safe levels to achieve clearance at the fastest possible rate.</p>	<p>1</p>

		2	Repetitive applications of Diquat should be made if that prohibits growth and spread.	Agree - trials will be considered as soon as the Diquat monitoring results are with the Management Group.
		1	At least 6 years is a realistic period over which trials to determine the effectiveness of Diquat can take place before making decisions about future use. Alternative methods of control must be investigated	Timeframes will be determined by the trial process if that is the best way of making decisions. Every available method and combination of methods is being considered.
5.1.1	Developing the approach (suction dredging)	2	That the Beacon Point - Roys Bay - Waterfall Creek area be suction dredged following spraying and also monitored with a hand weed follow up.	Currently Diquat is not used in that area, but the combination of treatments you suggest provides a comprehensive way of treating an area that is high biomass and presents the highest risk of boats transporting weed.
		1	<i>Observation:</i> Dredging results in 5x growth (Marina)	The habitat under the marina is very suitable for Lagarosiphon - shallow water and suitable substrate from the Bullocks Creek delta. However, suction dredging can be effective when applied properly and followed up regularly.
		1	Amenity areas should be suction dredged	Amenity areas are being suction dredged but this method is not entirely effective in such area where biomass of weed is high.
		2	That a credible suction dredging contractor be employed and looks at new technology eg deepwater disposal	Suction dredging operations are being evaluated and improved. Investigating deepwater disposal has been recommended by NIWA.
5.1.2	2004/05 interim control programme	-		
5.1.3	The interim and the ideal treatment scenarios for 2004/05	-		
5.1.4	An adaptive management approach for Lagarosiphon control	1	<i>Support:</i> The treatment programme should include regular monitoring of the most effective combinations of chemicals and dredging and the programme adjusted accordingly.	Once the Management Group has the NIWA and ORC monitoring results for both Diquat and suction dredging treatments, consideration will be given to the value of trials using combinations of methods in defined areas of the lake. This is part of the adaptive

		1	<p><i>Support:</i> The level of monitoring detail in the 10 Year Plan.</p> <p>Draw on experience elsewhere as to what works best</p>	management approach advocated in the Plan and will incorporate advice from those with expertise in controlling Lagarosiphon.
5.1.5	Monitoring - a fundamental component of adaptive management	1	<p><i>Monitoring needs:</i> Need to monitor fish populations.</p> <p>Presume herbicides kill all aquatic weeds - what will be the result of repeated spraying.</p>	NIWA is providing the Management Group with this type of advice from NZ and overseas.
5.1.6	Lagarosiphon control in Lake Wanaka: 2005/06 – 2014/2015	-		See An Interim Control Programme for 2004/05 (2004), particularly Appendix 1 “Why Diquat for Lake Wanaka”. What about ecological effects P 16.
5.2	Component 2: preventing the spread of Lagarosiphon with Lake Wanaka and to other lakes	-		No, Diquat does not affect all aquatic plants. Some native plants such as Chara and Nitella that are widespread in Lake Wanaka were not affected even when directly exposed in the Paddock and Parkins Bay treatment areas.
5.2.1	How Lagarosiphon is spread	1	<p><i>ID another possible vector:</i> Control waterfowl - geese in Paddock Bay.</p> <p>We may lose trout and that will be a shame but this requires a drastic measure.</p>	Your view is noted.
5.2.2	Prevention of Lagarosiphon spread objective (Goal 4)	-		Trout will not be lost to Lake Wanaka by either Lagarosiphon or Diquat treatment.
5.2.3	How to prevent the spread of Lagarosiphon	1 1 1 1	<p><i>Support:</i> Boat cleaning facilities should be provided and their use enforced.</p> <p>Boat launching restricted to certain ramps</p> <p>Prohibiting boats from areas of the lake for periods of time is a small price to pay for long term control of Lagarosiphon.</p> <p>At a minimum, access to parts of the lake where contractors are clearing weed be restricted.</p>	<p>Your support for boating measures in the Plan is acknowledged.</p> <p>It may be feasible to separate boats and high density weed beds in Paddock Bay and this will be considered.</p> <p>The feasibility of this will need to be investigated.</p>

		1	Boat users should be restricted to areas not infested with weed.	This is not practical given the distribution of Lagarosiphon in the lake.
5.3	Component 3: preventing the accidental introduction of Lagarosiphon into lake Wanaka	-		
5.3.1	How Lagarosiphon gets into the lake accidentally	1	<i>Question:</i> Queried why the sale of Lagarosiphon is still legal?	The sale of Lagarosiphon is an offence under Section 4.1 of the Biosecurity Act and Sections 5.2 and 5.3 of the Otago Regional Council's Pest Management Strategy.
5.3.2	Controlling accidental introductions	-		
6	Annual planning process	-		
6.1	Lagarosiphon treatment and monitoring process	2	Application time is optimum from March to September, a longer period than indicated.	The optimum time is now under further discussion. There are a number of conflicting variables to integrate. This will be amended in the Plan.
		2	Scientific advice should determine the number of applications.	Yes, advice about the number of applications is being provided by NIWA.
6.2	Lake users awareness process	1	<i>Support:</i> Agree with the actions in the Plan.	Support acknowledged
6.3	Retail outlets and pond owners process	-		
6.4	Public release of annual control process			
7	Funding	2	<i>Support:</i> Funding should be available for Lake Wanaka - a National Icon Sufficient funding should be made available for dredging and manual control only.	In 2004/05 Government and local authorities contributed more than \$250 000 to controlling Lagarosiphon. Unfortunately a comprehensive programme requires significantly more than that amount - suction dredging in particular is very costly. See 7.1.1 and 7.1.2.
7.1	Funding requirements: treatment of Lagarosiphon in the lake	-		
7.1.1	The interim control programme	-		
7.1.2	2005/06 funding	-		
7.1.3	Funding from 2005/06 onwards	-		

7.1.4	Funding implications 2006/07 – 2014/15	2	This requirement should apply to all but Paddock and Parkins Bays.	Preventing Lagarosiphon from reaching the surface is a priority in these two high biomass bays given implications for drift and attachment to boats. An amendment to the Plan will be considered.
7.2	Finding requirements: prevention of transport within Lake Wanaka and to other lakes	-		
7.3	Funding requirements: prevention of accidental introductions	-		
7.4	Funding sources	-		
7.4.1	Government funding			
7.4.2	Local authority funding	2	<i>Support:</i> A lake user levy should be charged to help with weed control. Boat user levies - \$5.00/day ramp fee, \$80-90.00 for season pass. Rates should be increased to subsidise costs	We acknowledge your views about a user levy and the suggested amounts. We acknowledge your views about funding from rates.
7.4.3	Combined national and local funding	-		
7.4.4	Funding from other sources	1	Lake Wanaka Tourism to contribute and other organizations involved in the tourism industry. Public fund raising	Your suggestions about funding sources are acknowledged

Analysis of submission forms published in the Upper Clutha Messenger

- To analyse “Messenger” form submissions the 19 statements were first aligned to sections of the draft 10 Year Management Plan where possible.
- Statements that fell outside the scope of the Plan have not been included in the analysis (Table 2) but are listed following the table.
- The instructions were to cross out the statements respondents’ *disagreed* with rather than indicate which statements respondents *agreed* with. That meant all un-marked statements had to be counted as representing the views of respondents. This caused confusion and distorted the results. Voting patterns indicated that many statements would not have been counted had the usual method of indicating preferences been used.
- For instance, 12 “Messenger” form respondents *simply signed the form*. According to the instructions, respondents agreed with all 19 statements despite some containing contradictory elements. However, 12 respondents have been added to the number of submissions for all statements.
- The nature of some statements meant respondents were faced with choices that were inconsistent. For instance, a number who opposed chemical control then agreed with statements that contained several threads one of which implied the use of chemicals. Clarity for respondents can be compromised by such complexity.
- Otherwise the analysis is the same as described for submissions in Table 1.

Table 2. “Messenger” form submissions by section of the 10 Year Plan

Section No.	Section Title	Submiss in support	Submission statements	Analyst’s response
	10 Year Management Plan - whole document			
1	Introduction			
2	Background			
3	Responsibilities of the parties to the			

	MOU			
4	Goals			
5	Controlling Lagarosiphon in Lake Wanaka			
5.1	Component 1: treating Lagarosiphon in the lake			
5.1.1	Developing the approach (use of herbicide currently Diquat)	12+21 6 12+13	Oppose chemical control. Support chemical control That it be acknowledged by the LWLMT that diquat has demonstrably not worked as quoted by Minister Pete Hodgson (ODT 28.4.05) and Wanaka Sun (5.5.05) and that this impacts on statement 7.1.3 in the LWLMT draft plan which states that “as lagarosiphon responds to treatment diquat will be removed as the first control method to be removed”. That it be acknowledged by LWLMT that their draft document therefore states that diquat will always be used. That the wording of statement 7.1.3 be changed to “That there be a specific timeframe in which to establish the effectiveness of diquat by scientific measurement (eg. 3 yrs.) as the no 1 treatment and that if it is to be found ineffective within this timeframe that diquat be removed as a control method”.	Your views are noted. There are a number of reasons why Diquat may be more or less effective. Once the Management Group has the NIWA and ORC monitoring results for both Diquat and suction dredging treatments, consideration will be given to the value of trials using combinations of methods in defined areas of the lake. This is part of the adaptive management approach advocated in the Plan and will incorporate advice from those with expertise in controlling Lagarosiphon. <i>See Adaptive Management, especially Micro management. 5.1.4 p12 draft Plan.</i>
		12+22	That diquat no longer be considered treatment No 1 against lagarosiphon, instead suction dredging and manual weeding must be the predominant treatment and that funding for manual suction dredging and hand weeding be provided instead of any chemical application	Diquat is not considered to be the number 1 treatment for Lagarosiphon. Suction dredging and hand weeding are equally important. Decisions about which method, or combination of

					methods to use are based on the nature of lagarosiphon growth. See p7 draft Plan.
5.1.1	Developing the approach (suction dredging)				
5.1.2	2004/05 interim control programme				
5.1.3	The interim and the ideal treatment scenarios for 2004/05				
5.1.4	An adaptive management approach for Lagarosiphon control	12+25		That the specifics of adequate monitoring of the LWLMT be addressed and that the monitoring specifics include independent photographic documentation and empirical scientific measurements to replace the present anecdotal format and in house monitoring.	The results of independent scientific monitoring and ORC monitoring are currently being documented and will be publicly available. See 5.1.5 p13 draft Plan
5.1.5	Monitoring - a fundamental component of adaptive management				
5.1.6	Lagarosiphon control in Lake Wanaka: 2005/06 – 2014/2015				
5.2	Component 2: preventing the spread of Lagarosiphon with Lake Wanaka and to other lakes				
5.2.1	How Lagarosiphon is spread				
5.2.2	Prevention of Lagarosiphon spread objective (Goal 4)				
5.2.3	How to prevent the spread of Lagarosiphon	12+17		That there be no restrictions on access to parts of the lake for lake users	Your view is noted.
5.3	Component 3: preventing the accidental introduction of Lagarosiphon into lake Wanaka				
5.3.1	How Lagarosiphon gets into the lake accidentally				
5.3.2	Controlling accidental introductions				

6	Annual planning process	12+8	That any chemical application be restricted to the time period as set out in the Annual planning process document ie Aug/Sept and that only one application per site be permitted each year.	The optimum time for chemical application is under further discussion. There are a number of conflicting variables to integrate such as lake level, sediment content, surface conditions, temperature etc.
6.1	Lagarosiphon treatment and monitoring process			
6.2	Lake users awareness process			
6.3	Retail outlets and pond owners process	12+22	That lagarosiphon be banned for sale in retail outlets in the district.	The sale of Lagarosiphon is an offence under Section 4.1 of the Biosecurity Act and Sections 5.2 and 5.3 of the Otago Regional Council's Pest Management Strategy.
6.4	Public release of annual control			
	Process			
7	Funding			
7.1	Funding requirements: treatment of Lagarosiphon in the lake			
7.1.1	The interim control programme			
7.1.2	2005/06 funding			
7.1.4	Funding from public and private sources 2014/15	12+8	The use of diquat in a treatment area of Lake Wanaka be conditional upon the approved	In bays where Lagarosiphon forms high density, surface

				<p>funding for follow up suction dredging and/or hand weeding in this same treatment area within the same treatment year.</p>	<p>reaching beds the aim is to prevent boats picking up the weed and transporting it elsewhere around the lake. Further, wind and waves break off surface reaching Lagrosiphon that drifts to other locations. Both situations can be treated by applying a herbicide that reduces the height of Lagrosiphon beds. Follow up suction dredging is not currently a practical option in the Paddock and Parkins Bays situation.</p>
7.2	Finding requirements: prevention of transport within Lake Wanaka and to other lakes.				
7.3	Funding requirements: prevention of accidental introductions				
7.4	Funding sources				
7.4.1	Government funding				
7.4.2	Local authority funding				
7.4.3	Combined national and local funding				
7.4.4	Funding from other sources				