

**BEFORE THE HEARING COMMISSIONERS  
AT WELLINGTON REGIONAL COUNCIL**

**IN THE MATTER**

of the Resource Management Act  
1991 ("**the Act**")

**AND**

**IN THE MATTER**

of the Proposed Natural Resources Plan for  
Wellington Region Hearing Stream Three:  
Water Allocation, Natural Form and  
Function

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**STATEMENT BY ANGELA PHYLLIS HALLIDAY FOR  
HORTICULTURE NEW ZEALAND**

**12 September 2017**

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## QUALIFICATIONS AND EXPERIENCE

1. My name is Angela Phyllis Halliday. I am the Manager, Natural Resources and Environment with Horticulture New Zealand ("HortNZ"). I have been in this role since July 2016 and prior to this I was Advisor, Natural Resources and Environment with HortNZ from April 2014. I manage Horticulture New Zealand's involvement in regional and district planning processes in regions where fruit and vegetables are grown, and national policy involvement relating to legislation that may impact the sector (especially relating to land and water).
2. Previously I have had experience in a compliance role at the Southland District Council which focused on Resource Management and Environmental Health and prior to this I worked in an Economic Development Agency in Southland in a marketing based role and was a member of the Southland Conservation Board from 2008 – 2010.
3. I have qualifications in science (BSc) with a major in Zoology, a graduate Diploma of Wildlife Management from Otago University, a Graduate Diploma in Environmental Health from Massey University and I am currently studying extramurally towards a Masters in Resource and Environmental Planning.
4. As a result of this role, my qualifications, and previous experience, I consider that I have an understanding of farming systems and the impacts of water related policy decisions from both a farming/growing perspective and a from an environmental health/ecosystem health perspective.

## **MAIN ISSUES FOR HORTICULTURE IN PNRP – HEARING STREAM THREE**

5. In my statement to Hearing Stream One I provided an overview about horticulture in the Wellington Region which is relevant to all hearing streams so will not be repeated here.
6. The matters of concern to HortNZ that are addressed in Hearing Stream Three relate to mechanisms for water allocation.
7. In preparing this statement I have relied on the planning assessment by Lynette Wharfe as to how the matters addressed in Hearing Stream Three of the proposed Natural Resources Plan (“pNRP”) will affect horticultural operations.
8. The main issues for horticulture in Wellington Region are:
  - a) Rootstock survival water
  - b) Calculating MALF
  - c) Efficient allocation and use of water
  - d) Permitted takes
  - e) Otaki River
9. Water allocation is an important issue for HortNZ because it is critical for growing systems.
10. Key components for a water allocation system that are important for horticulture are:
  - Reliability of supply
  - Provision for transfer
  - Equitable allocation
  - Efficiency of allocation and use

### **Rootstock survival water**

11. HortNZ supported provisions in the pNRP which provides for rootstock survival water.
12. The provision for rootstock is similar in concept to “survival water” for livestock farming, but applies to the rootstock of permanent horticultural crops. The provision of this water is very important for growers because of the inability to move the crops in times of drought to maintain farm viability.
13. There is no alternative to water for the survival of rootstock during drought periods. No water means plants die. This results in lost income and constraints on food supply to market. There are potential long term effects on productive capacity with horticulturalists giving up and walking away from former productive units. If the water is not there, there is little compelling reason to

replant rootstock with no security for survival and economic return. Potential alternatives include less productive rural land use or lifestyle use with residents' incomes sourced offsite and loss of onsite rural employment opportunities.

14. The provision of rootstock survival water is an issue not just for the Wellington Region. This is a matter being considered and in some regions, already provided for, as the country works through freshwater quantity and quality review processes. In the Tukituki catchment the Board of Inquiry recognised the need for rootstock survival water as an important aspect of maintaining food production values and included it in the decisions on PC6.
15. The effects of the inability to irrigate in times of water shortage will lead to significant losses as with rootstock it takes often many years to establish an orchard. Therefore the total loss is significant for the grower's business and local food production capabilities for the region.
16. These losses are caused by the potential loss of a number of years' worth of production, as well as the considerable cost and time taken up with replanting the lost rootstock and waiting up to 7 years until it reaches full production again. Protecting the ability of the horticultural industry to produce food for the region and beyond is an important consideration.
17. As outlined in the evidence of Ms Wharfe, the s42A Report is recommending changes to the provisions in the pNRP that weaken the provision of rootstock survival water. HortNZ does not support the recommended changes and seek that the provisions be retained as notified, subject to changes as a result of the HortNZ submission.

#### **Mean Annual Low Flow (MALF)**

18. Ms Wharfe has outlined in her evidence concerns with the s42A Report recommending that the definition of MALF be amended to refer to 'naturalised MALF'.
19. I agree with Ms Wharfe that this is a significant shift in how the calculation of MALF would be derived.
20. We have undertaken some analysis of other regional plans to determine the extent to which naturalised MALF is used. Attached as Appendix 1 is a table that sets out the analysis.
21. Most plans rely on using available records and existing data as a basis for the calculations.

22. Calculating a naturalised MALF requires assumptions, as the data does not exist so modelling needs to be undertaken to derive the figures.
23. I understand that Mr Williamson has presented evidence for Wairarapa Water Users Group which as has shown that the Lower Valley groundwater assumptions are invalid and that caucusing has been undertaken with Council staff on this issue.
24. While HortNZ has not been involved with the caucusing, the issue at stake is wider than the Lower Valley, as it raises questions about the methodology and assumptions on which the MALF provisions in the Plan are based.
25. I also understand that GWRC hasn't completed the naturalised flow scenario in a model that has been developed for that purpose.
26. Therefore I consider that the issue of calculation of MALF needs to be put on hold pending caucusing of experts wider than the Lower Valley so a modified position can be developed that is appropriate for the Plan and naturalised MALF figures recalculated using this agreed methodology or have a MALF figure based on existing records.

#### **Efficient allocation and use of water**

27. HortNZ seeks that the Plan give appropriate recognition to efficient allocation and efficient use of water.
28. Efficient allocation refers to the allocation process and efficient use is how the water is actually used.
29. Ms Wharfe has identified issues with the s42A Report that does not appropriately provide for both efficient allocation and use of water.
30. It is important where water may be in short supply that appropriate provisions are included for both efficient allocation and use of water.

#### **Permitted takes**

31. Many horticulture properties are small with good economic return off a small area.
32. However such blocks require access to water for a range of matters aside from irrigation – such as mixing agrichemicals, washing machinery and washing produce.

33. However the horticultural sector is unfairly penalised in the pNRP because of the 20ha threshold that is applied to permitted takes.
34. HortNZ sought that there are specific provisions for permitted takes for small horticultural properties.
35. The s42A Report does not consider the issue of equity that this raises and so does not reasonably consider the HortNZ submissions on this issue.
36. There are extensive provisions for permitted takes for dairy farming, including dairy shed washdown and cooling water as well as stock drinking water.
37. Yet the small amount that HortNZ sought for horticultural properties is rejected. Therefore HortNZ seeks that the hearing panel address this matter through decisions.

#### **Otaki River**

38. The s42A Report is recommending that the allocation amounts for the Otaki River (and Mangaone Stream) are reduced (para 251) apparently over and above the "default" formula.
39. The approach taken with other rivers is that the current allocation is rolled over pending the Whaitua process.
40. But in the case of the Otaki the s42A Report is recommending that the allocation be reduced through the Plan process without waiting for the outcome of the Whaitua process.
41. As I understand the situation, the Otaki River is sufficiently under allocated that there will still be plenty of water available for new users.
42. The effect of the reduced allocation would be that any new users are unlikely to be granted resource consent (para 249).
43. The rationale appears to be that it is considered that the existing minimum flow is too low to sufficiently protect the habitat of trout.
44. HortNZ considers that the Whaitua process is the appropriate forum to consider the minimum flows to provide for all values for the Otaki River. The current recommendation is based on providing for one value without due consideration of other values for the river.
45. Therefore I consider that it is inappropriate to reduce the allocation for the Otaki River through the pNRP process.

**Angela Halliday**

**12 September 2017**





Regional Council	MALF	Naturalised Flow	Method	Allocation
<p><b>Northland</b></p> <p>(Proposed Northland Regional Plan, operative Sept 2017.)</p>	<p>For the purposes of these policies, the MALF is obtained by averaging the lowest daily flow (or the best estimate thereof) for each year of record. This average estimates a natural minimum which generally occurs in the summer.</p>	<p>Representative of 'naturalised, not defined.</p>	<p>The Design Minimum Flow is based on range of factors, but rely on MALF.</p> <p>The lowest average daily flow of each year of record, arithmetically meaned over the length of record</p> <p>Or</p> <p>The 1 in 5 year 7 day low flow)</p>	<p>Minimum flows for rivers</p> <p>Apply the following minimum flows for Northland's rivers, unless a lesser minimum flow is approved under D.4.19 'Exceptions to minimum flows or levels':</p> <ol style="list-style-type: none"> <li>1) for outstanding rivers, 100% of the seven-day mean annual low flow, and</li> <li>2) for coastal rivers, 90% of the seven-day mean annual low flow, and</li> <li>3) for small rivers, 80% of the seven-day mean annual low flow, and</li> <li>4) for large rivers, 80% of the seven-day mean annual low flow.</li> </ol> <p>Note:</p> <p>Apply minimum flows, minimum levels and allocation limits set for rivers, lakes and natural wetlands to water takes from aquifers that are directly or highly connected. An application to take water from an aquifer with direct or high hydraulic connectivity to a fully allocated river or which would result in flows or levels to be</p>

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Regional Council	MALF	Naturalised Flow	Method	Allocation
Auckland Council (The Auckland Unitary Plan became operative in part on 15 November 2016.)	7D MALF used as Q5	Not mentioned	Q5 5 year 7day minimum low flow	reduced below a minimum flow or minimum level will generally not be granted.  A resource consent may be granted under D.4.19 'Exceptions to minimum flows or levels.'
Waikato (Waikato regional Plan Inc. Variation 6 operative 10 April 2012)	The minimum flow shall be set at 90% of the one in five year 7-day low flow for streams with a mean flow greater than 5 cumecs and 95% of the Q5 for streams with a mean flow less than 5 cumecs.	Not mentioned	Policy 2: Determining the level of minimum flows, primary, secondary and water harvesting allocable flows  Exceptions for Policy 1 pathway	
<b>BOP RC</b>  Version 3.8:18 October 2016 Region-wide Water Quantity - Proposed Plan Change 9 to the Bay of Plenty Regional Water and Land Plan (Track Change Version from Operative Plan)	Q5	Not mentioned in PC9 or RWLP	To use the following interim allocation limits, until permanent limits are set through regional and/or sub-regional plans within each WMA: (a) Instream flows: 90% of Q5 7 day low flow for each river or stream. (b) Allocation limit for surface water: 10% of Q5 7 day low flow for each river or stream.	See adjacent.

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<p>Taranaki Regional Fresh Water Plan for Taranaki 2001</p>	<p>MALF (note plan is 2001)</p>	<p>Policy 3.1.2 "have regard to natural flow characteristics"</p>	<p>Habitat protection for brown trout using bespoke model for habitat protection.</p>	<p>Allocation required to be consistent with Policy 3.1.2</p>
<p>Hawkes Bay Regional resource management Plan Aug 2006</p>	<p>7D MALF</p>	<p>Policy 73 To sustain the natural character of the surface water body when determining the minimum flows and allocable volumes for surface water bodies in Table 9.</p>	<p>Means Mean Annual Low Flow of a river and the average of the annual low flows occurring over 7 consecutive days for the years where river flow records are available for a river.</p>	<p>In order to determine the maximum amount of water that could be sustainably allocated from a river the HBRC has selected the 7-day average flow that is exceeded 95% of the time over the summer period November-April as the key statistic.</p> <p>This statistic (the 7-day Q95) was selected because:</p> <ul style="list-style-type: none"> <li>(a) It takes account of the natural availability of water within rivers.</li> <li>(b) The November–April period is both the period of lowest flows and the time of greatest water demand in Hawke’s Bay.</li> <li>(c) The seven day averaged flow smooths out short-term variations that can skew low flow estimates.</li> <li>(d) When a river is fully allocated and fully used the river should not drop below its minimum flow for more than 5% of the summer low flow period.</li> </ul>

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Regional Council	MALF	Naturalised Flow	Method	Allocation
Gisborne Freshwater Plan, Oct 2015 (decision version Aug 2017)	7D MALF	No mentioned, was raised by DOC in evidence as method.	The 7-day mean annual low flow. In any year, the 7-day low flow is the lowest average flow over 7 consecutive days for every 7 consecutive day period in the year. The 7-day mean annual low flow can be determined by adding the lowest 7-day low flows for every year of record and dividing by the number of years of record.	Policy 4.1.4 c. Where the waterbody is identified as an Aquatic Ecosystem Waterbody within Schedule 1, minimum flow conditions in water permits shall be set at no less than the Mean Annual Low Flow. d. For all other surface water takes, minimum flow conditions in water permits shall be set at no less than 90% of Mean Annual Low Flow.
<b>Horizons</b> One Plan, Nov 2014 (Minor amendments were made to the One Plan through Plan Change 1, with effect from 28 April 2016)	1D MALF (exception of 7D MALF)	Mentioned as maintaining the naturalised flow regime in assessing secondary flow allocation	MALF means the one-day mean annual low flow calculated as the average of the lowest flow of the river <sup>a</sup> for each year (1 July to 30 June) of record.	Generally 10% of 1D MALF, some 5% of 7D MALF
<b>Wellington</b>				
Marlborough Marlborough Sounds Resource Management Plan, March 2003	7D MALF	No mention	7D low flow is allocated for abstraction.	The cumulative abstraction from the proposed and all existing authorised takes from the river does not exceed 10 percent of the 5-year, 7-day low flow

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Nelson Nelson Resource Management Plan (NRMPP), March 2007	7D MALF	Not mentioned	Minimum flows, below which no further water should be taken, have been set in order to leave enough water in the rivers and streams to protect instream values.	10-33% of MALF
Tasman Tasman Resource Management Plan, November 2008	7D MALF (1D MALF for Waimea Dam proposal)	30.1.3.2 ... taking into account:  (c) "natural flow characteristics"  Minimum flow for Waimea states a calculated natural MALF		
West Coast Land and Water Plan, May 2014	7D MALF	Policy 7.3.2 A minimum flow of 75% of MALF will provide for the natural character, and life supporting capacity of the aquatic ecosystem.	MALF is determined at the point of take, but needs to take account of the cumulative water takes at other points in the catchment. Once calculated, the MALF for a river will be fixed for the duration of the plan. For smaller streams with high in stream values the location and rate of take and the seasonal timing of the take can be controlled by conditions on the consent.	Where the cumulative volume allocated from a river for permitted and/or consented takes reaches or exceeds 15% of mean annual low flow (MALF) the Council will review the application of the rule to the affected river, and a plan change may be required to address the issue.
Canterbury	MALF means the average, for a number of years, of the annual lowest daily flows. This is	Freshwater Outcomes from Selwyn Waihora PCI.	Unless the proposed take is the replacement of a lawfully established take affected by the	

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Regional Council	MALF	Naturalised Flow	Method	Allocation
<p>The Canterbury Land and Water Plan, August 2017</p>	<p>determined by selecting the 7 lowest daily flow (average over 24 hours) for each year of record, summing those values and then dividing the total by the number of years of record.</p>	<p>“Observed minimum river flows of 80 to 90% of the naturalised 7DMALF on average”</p>	<p>provisions of sections 124-124C of the RMA,  if no limits are set in Sections 6 to 15 for that surface waterbody, the take, both singularly and in addition to all existing consented takes meets a flow regime with a minimum flow of 50% of the 7-day mean annual low flow (7DMALF) as estimated by the CRC and an allocation limit of 20% of the 7DMALF.</p>	
<p><b>Otago</b>  Regional Plan, Water for Otago – Jan 2004 to March 2016.</p>	<p>7D MALF</p>	<p>Not mentioned</p>	<p>The 7DMALF for a specific location is estimated using a generally accepted calculation method undertaken by a suitably experienced and qualified person.</p> <p>For new takes in a catchment outside Schedule 2A, until the minimum flow has been set by a plan change, the minimum flow conditions of any primary allocation consents will provide for the maintenance of aquatic ecosystems and the natural character of the source water body.</p>	<p>If the consented take is less than 50% of the 7-day mean annual low flow, more water can be allocated as primary allocation under this policy until that limit is reached.</p>

Regional Council	MALF	Naturalised Flow	Method	Allocation
<p><b>Southland</b></p> <p>Southland Water and Land Plan June 2016 (proposed)</p>	<p><b>Policy 22</b></p> <p>“avoiding allocating water to the extent that the base flow of any waterway is depleted, in order to protect the mauri of that waterway and mahinga kai or taonga species”</p>	<p><b>Definition: Natural mean flow</b> = The total flow divided by the duration of the record.</p> <p><b>Flow is naturalised through the incorporation of the total volume of water allocated through current resource consents. It includes the stream depletion effect of each consented groundwater abstraction greater than 2 litres per second with a direct, high or moderate degree of hydraulic connection in accordance with Policy 29 “Stream Depletion Effects”.</b></p> <p>Also refer to naturalised instantaneous flow in the surface water body at the time of the take.</p>	<p>Such that up to 50% of flow at the catchment main stem, minus the assessed actual take, is available for allocation subject to a minimum flow set to ensure that no less than 50% of the natural flow remains in-stream;</p> <p>The Min Flow will be established at the point of take or in the case of surface waterbodies where flow is lost to groundwater along the length of the surface waterbody, the most flow sensitive point downstream.</p> <p>The minimum flow will be as follows:</p> <ul style="list-style-type: none"> <li>(i) for takes from the primary allocation the minimum flow will be Q95;</li> <li>(ii) for takes from the secondary allocation the minimum flow will be the natural median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;</li> </ul>	<p>Minimum flows are to be developed through gauging of river flows correlated with Southland Regional Council approved water level monitoring sites, rated flow recording sites, or hydrologic modelling.</p> <p>Allocation based on the minimum flow will be as follows:</p> <ul style="list-style-type: none"> <li>(i) for takes from the primary allocation, the minimum flow will be Q95;</li> <li>(ii) for takes from the secondary allocation, the minimum flow will be the median flow during the period from 1 April to 30 November each year and the natural mean flow during the period from 1 December to 31 March each year;</li> </ul>

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			<p>(ii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained within Appendix K.</p> <p>In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values.</p> <p>The process for undertaking an assessment of environmental effects is defined using instream habitat analysis (method 1 and 2).</p>	<p>(iii) for takes outside of the primary or secondary allocation, the minimum flow will be derived on a case-by-case basis using the guidance contained in Appendix K.</p> <p>In situations where surface water and groundwater interact, a minimum groundwater level may also be set to maintain instream values (see appendix K).</p>