

BEFORE THE HEARING COMMISSIONERS

IN THE MATTER of the Resource Management Act
1991 ("**the Act**")

AND

IN THE MATTER of the Resource Management Act 1991
and the Environment Canterbury
(Temporary Commissioners and
Improved Water Management) Act
2010

AND

IN THE MATTER of the hearing of submissions on the
Variation 2 to the Proposed Land and
Water Regional Plan

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

15 MAY 2015



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QUALIFICATIONS AND EXPERIENCE

1. My name is Angela Phyllis Halliday. I am the Advisor, Natural Resources and Environment with Horticulture New Zealand. I have been in this role since April 2014. I am on the Product Development Group for the Matrix of Good Management Project and am currently involved with development of the industry agreed Good Management Practices.
2. Prior to that I was in a compliance role at the Southland District Council which focused on Resource Management and Environmental Health. 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 2006 – 2008.
3. I have qualifications in science (BSc) with a major in Zoology from Otago University and a graduate Diploma of Wildlife Management. I am currently studying extramurally towards a Graduate Diploma of Environmental Health at Massey University. I am involved with District and Regional Council policy and planning processes throughout New Zealand in both the pre-plan collaborative process and post plan facilitation process.
4. In my role at Horticulture New Zealand I am responsible for implementing Horticulture New Zealand's wider resource management and research programme.
5. 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. In this evidence I have tried to outline the issues regarding land and water resource management and primary production from an industry perspective in relation to Canterbury and in particular the Hinds catchment.

BACKGROUND TO HORTICULTURE NEW ZEALAND AND ITS RMA INVOLVEMENT

6. Horticulture New Zealand was established on 1 December 2005, combining the New Zealand Vegetable and

PotatoGrowers' and New Zealand Fruitgrowers' and New Zealand Berryfruit Growers Federations.

7. On behalf of all active growers Horticulture New Zealand takes a detailed involvement in resource management planning processes as part of its national environmental policy. Horticulture New Zealand works to raise growers' awareness of the RMA to ensure effective grower involvement under the Act, whether in the planning process or through resource consent applications. The principles that Horticulture New Zealand considers in assessing the implementation of the Resource Management Act 1991 (RMA) include:
 - The effects based purpose of the Resource Management Act;
 - Non-regulatory methods should be employed by councils;
 - Regulation should impact fairly on the whole community, make sense in practice, and be developed in full consultation with those affected by it;
 - Early consultation of land users in plan preparation;
 - Ensuring that RMA plans work in the growers interests both in an environmental and economic production sense.

HORTICULTURE IN NEW ZEALAND

8. The sector represents 5600 growers producing around 110 crops (focused on producing food for people). Roughly \$2.9 billion in domestic revenue is generated yearly, and another \$3.2 billion of fresh on board value is produced for export.
9. The industry body is committed to continuous environmental improvement, and has spent significant resource on a good management practice program for growers, covering issues of significance to markets and regional councils, known as NZGAP.
10. Horticulture NZ manages issues that cover and affect the whole horticulture industry (excluding winegrowers and winemakers), and is currently active in 48 local and regional government plan processes throughout the country.

11. Many of the issues are common between plans, so Horticulture NZ also provides input to policy at the national level focussing currently on matters that affect growers in District and Regional Planning processes.
12. Horticulture New Zealand is the umbrella organisation for 21 separate product groups covering 110 crops that are outlined in the Commodity Levies (Vegetables and Fruit) Order 2007. Product groups are also levy collecting organisations working on sector specific matters in collaboration with Horticulture New Zealand working on industry specific matters. The two key vegetable product groups for the Canterbury region are the Process Vegetable Product group and the Fresh Vegetable Product Group (VegetablesNZ). These groups are significant contributors to our research efforts on nutrient management.

HORTICULTURE IN THE CANTERBURY REGION

13. With over 16,800 ha of production, Canterbury is the third largest horticultural sub region in New Zealand. It is particularly significant for vegetable production, with the main crops including onions, peas, potatoes, pumpkin, green beans, carrots and broccoli. There is also significant fruit production with the main crops being blackcurrants, berry crops, apples and grapes for wine production.
14. There are 497 registered vegetable growers in the Canterbury region, and 54 fruitgrowers.
15. Generally speaking the 2012 figures for the year ending 30 June indicate that Canterbury production was approximately 5700 ha of potatoes, 4200 ha of peas and beans, 1,000 ha of onions, 255 ha of sweetcorn, 323 ha of brassicas, 823 ha of carrots, 29 ha of asparagus, and 23 ha of lettuce. "Other" vegetable crops comprising 651 ha. The approximate total hectares planted for vegetable cropping in 2012, were around 13,048 ha.

THE SIGNIFICANCE OF CANTERBURY'S HORTICULTURAL PRODUCTION TO NEW ZEALAND HORTICULTURAL PRODUCTION.

16. Horticultural production in New Zealand makes up roughly 8.3% of total fresh on board export value, with the main categories for export being in wine, kiwifruit and apples.

Onions, other fresh vegetables and potatoes are also significant contributors to a total export value in 2010 of over \$3 billion. Equally important to note are the contributions to domestic food supply and domestic food production with approximately the same value again from horticultural production in terms of domestic value (\$2.9 billion). Canterbury domestic vegetable supply is integrated with approximately 9 other vegetable production nodes across the country. These are all interrelated parts of the domestic food supply chain.

HORTICULTURE IN HINDS

17. Horticulture is not a major farming type in the Hinds catchment. The horticulture that is undertaken is usually part of a mixed farming system paired with arable, sheep and beef and dairy grazing.
18. Blackcurrants and raspberries are grown in Hinds. Raspberries are grown independently from other crops whereas blackcurrants are grown in conjunction with arable crops, dairy grazing and sheep/beef (as shown in Appendix A – information on a mixed farming system provided by Mike Read).
19. Vegetable cropping varies by rotation, by season and by property. One typical aspect of broadacre vegetable cropping is the use of shared and leased land with as much as 100% of the land sometimes being shared or leased.
20. There is huge variety in the rotational structure of farms, the crops grown, the methods applied and the scale of operation. In Hinds potatoes and carrots are typically planted in a one in 6 - 8 year rotation with pasture on sheep and beef or dairy grazing land. For an outline of the type of operation please see the statement of evidence of Hamish McFarlane.
21. Whilst there is arable cropping in Hinds at present there is very little (if any) process cropping done in the catchment. Having said this that does not mean that process cropping may not occur in future and market and business needs and demands dictate. Therefore, a regulatory regime that ensures business flexibility is important to the sector.

MAIN ISSUES FOR HORTICULTURE UNDER THE PROPOSED REGIME

22. The main issues for horticulture in this catchment relate to landuse flexibility and the uncertainties that arise from the proposed rules. These issues may adversely affect the ability of growers to change crops to meet market demand or lease land to plant crops due to the potential of such crops to impact on the OVERSEER limits proposed. Understandably the focus in the catchment has been on dairy based systems being the major land use type in the catchment. However the rules as recommended do place major hurdles and reduce flexibility for low leaching and mixed farming systems which do not appear to be as well understood. Horticulture New Zealand is keen to pave the way for horticulture to sustain and thrive in the region.
23. Horticultural and arable systems are complex and are often incorporated into other systems. These mixed systems, whilst complex and difficult to model, are robust systems that can respond to market demand and future-proof farmers from major setbacks such as disease, climate change, biosecurity issues and major market fluctuations.
24. I set out below a list of uncertainties that may affect horticulture that Horticulture New Zealand would like to address:
- The Matrix of Good Management and how this will be addressed under the proposed regime
 - OVERSEER for horticulture, version control and the issues for cropping in the current model
 - Landuse flexibility – the flexibility ‘cap’ and how this might work in the proposed plan
 - The balance within the proposed catchment cap considering new irrigation, intensification and farmer flexibility.

Matrix of Good Management (MGM)

25. Horticulture New Zealand has been involved in the development of the Matrix of Good Management (MGM).
26. The complexity of the industry has posed some problems for classifying farming systems and some of the farms in the Hinds catchment (for example those with blackcurrants) will not be able to be modelled as the focus for horticultural

crops in the MGM project has been solely on vegetable crops.

27. It is noted that Variation 2 goes well beyond what is provided for in MGM into a significant clawback regime. MGM is, however, the first step on the continuum for this regime. As noted in Lynette Wharfe's evidence it is very unlikely that under the proposed rule regime that a farming activity or enterprise that includes horticulture will not require a resource consent unless they are under 5 hectares and/or do not move from their baseline number which is under 20kg per hectare per annum.
28. This does create some confusion from an implementation perspective as the MGM project portal and the matrix itself is being developed to help identify where nutrient based resource consents may be required by identifying where the level of N leaching should be under 'Good Management Practice'. As this limit will be calculated using OVERSEER® it will move with versions and therefore will reflect the changes in the model.
29. The current rules which are being written prior to the launch of the matrix are for an overallocated catchment to claw back the total load which has been calculated of 3400 tonnes of nitrogen per annum. As outlined in Mr Conland's evidence there are some questions around the accuracy of this figure. Other hard limits have been identified based on this total load (20kg and 27kg per hectare per annum for trigger levels for consent and maximum allowable intensification under a resource consent) these are hard limits which do not move with OVERSEER® versions and essentially trump any resource consent trigger levels being identified under the MGM project. This raises some issues in terms of the model accurately reflecting what is happening underneath the rootzone (as outlined below).

OVERSEER®

30. Horticulture New Zealand is very supportive of a regime to move all farmers to Good Management Practice and has developed a Code of Practice for Nutrient Management and have several research projects looking at nitrogen and phosphorous management on cropping farms. The MGM project relies heavily on being able to model these practices in OVERSEER®. However as discussed below and by Mr Ford

this is very difficult if not impossible under the current cropping model in OVERSEER®.

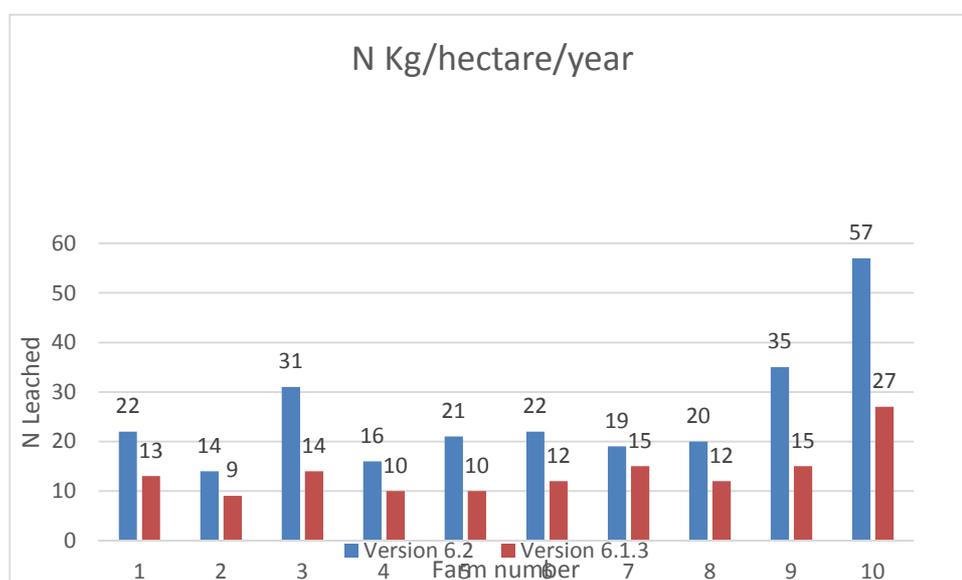
31. As outlined by Mr Ford in his evidence there are issues with the cropping model in OVERSEER® these include the problem that not all crops are represented and some crops have to have a surrogate chosen to represent them – for example blackcurrants are modeled using grapes as a surrogate. Also it is not possible to model sequential planting and harvesting of a paddock with the inputs averaged out monthly this does not always fit with the way horticultural crops are planted and harvested.
32. Mr Ford's evidence highlights the limitations of OVERSEER® for horticultural crops. Of particular concern in the Hinds catchment is the ability of the model to accurately predict leaching losses for land in berry crops which, as outlined in Mr Ford's evidence, is not available at present.
33. The Section 42A report acknowledges this limitation and the concern of the industry as follows:

A number of submitters have a fundamental concern with respect to the modelling processes, and in particular changes in the OVERSEER® version, which may lead to different numbers for individual farms or the Hinds/Hekeao Plains Area when aggregated, such that the targets or limits are unable to be met despite improvements in farming practice. Several of these submitters have suggested a formula type approach to identifying a limit or a target that may change from year to year. The Canterbury Regional Council is aware of the issues that will occur with its planning documents with changes in OVERSEER® versions that lead to individual farms and aggregated catchment modelling changing leaching levels through only changes in OVERSEER® versions. This is an issue that is causing difficulties throughout the region, not just the Hinds/Hekeao Plains Area. While it is of potentially little comfort to the submitters, I understand that a resolution is near, which may require a Plan Change process. Such a resolution would be applied region-wide. On this basis, and without considering whether any particular formula is appropriate, I am not recommending any change to the table. (9.140)

34. Horticulture New Zealand recognises the difficulty with the model may well be resolved over time, however for crops that are not included in the current model it is advisable that, to avoid leaching numbers that are completely

unrepresentative (such as some of those predicted under the berry crops in question), a substitute number such as a leaching rate from SPASMO is used until such a time as the model accurately reflects the crop in question.

35. Horticulture New Zealand is concerned that the proposed regulatory regime will stifle potential for this particular catchment to diversify into cropping or berry production due to the issue of modelling being too difficult or the leasing out of blocks being fraught with compliance and regulatory red tape due to modelling difficulties. This may put growers off leasing land for crops and diversifying that in a catchment that is heavily reliant on one type of farming should be encouraged.
36. Version control in OVERSEER is an issue that has been and will continue to be a concern to the horticulture industry as outlined in Mr Ford's evidence below is a graph prepared by Plant and Food Research of 10 farms in Canterbury that have been run through the version 6.1.3 and 6.2 these were modelled over the same soil type with the same climate to make the comparison more comprehensive. The farms were put into version 6.2 identically. All were fertilised at GMP and irrigated with 'linear and centre pivot' at GMP (variable depth and return period based on soil moisture). There were 94 crop blocks in total with arable and horticulture represented. There was an average increase over the 10 farms from 14kg/hectare/year to 26kg/hectare/year. This highlights the difficulty of a model providing a moving target and a limit in the Variation providing a solid target.



Landuse flexibility

37. Landuse flexibility is key in the dynamic environment with fluctuating markets, climates and other pressures such as climate change and biosecurity.
38. Horticulture production has decreased in many areas in New Zealand and the Hinds catchment is no exception. The ability and potential of horticulture to grow in the catchment and throughout New Zealand is of key concern to Horticulture New Zealand.
39. As rules in the Plan and Variation have been written without the benefit of the hindsight of what pressures and opportunities the market and the environment may bring it is requested that consideration be given to encouraging cropping and mixed farming systems rather than these systems falling into the 'too hard basket' in terms of regulations. This has resulted in a regime that will essentially foreclose any consideration of such cropping systems in future as it will lock in current land activities.
40. A flexibility cap approach has been proposed by many submitters below which no further reductions would be required as outlined in the Section 42A report
- While some submitters consider that there should be a lower 'floor', such as 25kg/ha/ha, beyond which no further reductions should be required, the leaching data from the dairy support and dairy sectors indicates that most properties are well above that level, and a 'floor' would only benefit a very small number of properties. Further, a resource consent process is required to implement the policy position, so a unique circumstance could be accounted for. On this basis, I do not recommend this approach (9.161)*
41. Horticulture New Zealand is supportive of a flexibility cap below which there is flexibility to increase the N leaching number of the property from the baseline. It is preferable that lower emitters be given flexibility rather than allowing further intensification over and above that already taken up by the irrigation schemes as part of their consented load. It is not clear what a 'unique circumstance' would be, it is clear however that these provisions are potentially going to require every farm to get a resource consent and it would be advisable that the feasibility and practicality of this process be considered.

42. Horticulture New Zealand is currently working closely with Horizons Regional Council on the implementation of the One Plan. The approach for horticulture in this instance was to require farm plans that are focused on Good and Best Management Practices recognising the difficulties and gaps in the ability to model the majority of the cropping operations in the region using OVERSEER currently. Implementation of this plan has been a long slow process one that has been facilitated in part by the industry organisations.
43. The implementation regime, the resource consenting requirements and the capacity to deliver and ensure compliance of these rules needs to be a key consideration of the panel during this process. The flexibility can be considered at the implementation phase as anomalies with the modelling ironed out and new compliance regimes are developed to meet the new policies and rules.
44. In light of this process and recognising the requirement to keep a balance Horticulture New Zealand would encourage a balanced view and further research on the OVERSEER cropping model to be done for those crops that are not represented prior to hard and fast limits or baselines being developed for the farms in question, in the meantime proxies could be developed using expertise on these crops to ensure they are not misrepresented.
45. Keeping the balance is important and this should be considered not for the now but also for the future. The decisions made in this process will dictate the ability of farms to adapt and change to meet future demands and may determine if farms are economically viable moving into the future. Horticulture New Zealand considers that the ability to intensify should not be limited to irrigation scheme members alone and that if necessary transfer and trading be considered in the future to address inequities that may develop as farm systems change to accommodate the new rules.

Survival water

46. Horticulture New Zealand sought in its original submission for 100% reliability for crop survival water the officers in the section 42A report consider that this is less relevant in the Hinds catchment as follows:

The Horticulture NZ request for crop survival water is possibly less relevant to this Hinds/Hekeao Plains Area, taking into account the widespread availability of highly reliable groundwater in the areas of more productive soils, the low prevalence of horticultural root stock or horticultural crops and the policy and rule framework to enable substitution of surface water with more reliable groundwater.

47. The very reasons that it is considered inconsequential are the very reasons that Horticulture New Zealand propose that it should be granted for horticultural crops in Hinds.
48. As outlined in Mr Ford's there is good justification for horticultural use to be granted priority status at times of water shortages or low flows over all other users. The current proposed rule structure and Schedule 10 disadvantages horticultural land use as it treats horticultural irrigation rights the same as irrigation rights from all other land uses when it is obvious that their reliance on irrigation is much higher than other uses and their return to irrigation is much greater.
49. As mentioned there is a low prevalence of horticultural root stock and crops in Hinds therefore elevating horticulture to a position of priority in this catchment should have little to no effect on the flow regimes of rivers and/or groundwater. A preferential regime for horticultural crops providing 100% reliability will provide a reassurance to farmers looking to diversify into crops such as blackcurrants which are a lower leaching alternative to other land uses.

CONCLUSION

50. Finally as outlined above and in the planning, science and technical evidence provided by Ms Wharfe. Mr Conland and Mr Ford the main issue of concern to Horticulture New Zealand is ensuring that the growing of horticultural crops in Hinds is allowed for in the rule framework and the farming systems and complexities of managing using the OVERSEER model under the rule framework are provided for so as to not unduly restrict growing, diversification of farming systems to include growing and leasing land for growing.

Angela Halliday

15 May 2015