BEFORE THE HEARING COMMISSIONERS

DUNEDIN

IN THE MATTER	of the Resource Management Act 1991 (**the Act**)
AND	
IN THE MATTER	of Proposed Otago Regional Policy Statement – Non-Freshwater

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STATEMENT OF EVIDENCE OF LEANNE CLAIRE ROBERTS (INDUSTRY) FOR HORTICULTURE NEW ZEALAND

23 November 2022

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SUMMARY

1. The Otago Region is important for horticulture. The climate and soils provide ideal growing conditions for some crops. The Region is important nationally as a growing area for apples and cherries, predominantly for export. The Region is also important nationally as part of the national domestic food system. New Zealanders rely on Otago for their supply of summer fruits such as: apricots, peaches, nectarines, and plums.

2. Food production systems are coming under increased pressure from population growth, competing resource use and climate change.

3. HortNZ seeks a new issue statement for Food Production, Food Supply and Food Security. We also seek that Food Production, Food Supply and Food Security is referenced within the other issue statements because this issues staddles several of significant resource management issues identified within the proposed Otago Regional Policy Statement (**pORPS**).

4. Food is essential to human health. Fruit and vegetables grown in Otago support the health of the nation. Fruit and vegetables for domestic supply, should be recognised within the second priority obligation of Te Mana o te Wai.

5. The pORPS has an important role, in supporting emissions reductions by enabling land use change to lower emissions food production, such as horticulture.

6. The pORPS has an important role in enabling infrastructure, activities and practices that support climate change adaptation, and including adaption of our food system.

7. Highly Productive Land (**HPL**) must be protected for land based primary production. In Otago, some of the most productive soils are not LUC 1, 2 and 3. Recognition of all soils valued for horticulture, must be provided for within this pORPS.

8. Reverse sensitivity issues must be managed, so that horticulture on HPL is prioritised and not constrained.

INTRODUCTION

Qualifications and experience

9. My name is Leanne Claire Roberts. I am a Senior Advisor Environmental Policy at Horticulture New Zealand (**HortNZ**). I work within the Environmental Policy Team in national, regional, and district planning processes across New Zealand. I have been in this role since July 2022.

10. Ko Piripiri me Oteauheke ngā maunga, Ko Waitohi me Awaiti ōku awa, Ko Waikawa me ōnuku ōku marae, Ko Te Ātiawa me Ngāi Tahu ngā iwi. Nō Wairau ahau.

11. I hold a Bachelor of Arts (Honours) from Victoria University. I am a former hydroponic grower of salad and herb products with nine years growing experience in the horticultural industry. I am a former industry representative who served as an elected representative on the Vegetables New Zealand Inc. Board from 2015 until 2022.

12. I have worked in local government as a Policy Analyst and Deputy Electoral Official, Primary Health in Māori Health Development, as a consultant to community groups, projects and organisations and as a horticultural business owner.

13. Since beginning my role at HortNZ, I have met with growers across New Zealand to better understand their horticultural operations and how resource management issues impact them. I have travelled to Otago and met with growers and visited horticultural operations.

Involvement in the proceedings

14. When I joined HortNZ in July 2022, I took on the role of supporting pORPS proceedings.

15. I have had regular meetings and conversations with local growers, planners, and other advisors since July 2022, seeking information to support the HortNZ submission and evidence produced for this process.

16. In preparing my evidence I have read:

    (a) The non-Freshwater parts of the pORPS

(b) The Freshwater Planning Instrument Parts of Proposed Otago Regional Policy Statement (**pORPS FW**);

(c) The Section 42A report and appendices;

(d) The New Zealand National Policy Statement for Freshwater Management 2020 (**NPSFM**);

(e) The New Zealand National Policy Statement for Highly Production Land **(NPSHPL)**

(f) The New Zealand Government's Emissions Reduction Plan

(g) The New Zealand Government's National Adaptation Plan

(h) The following statements of evidence on behalf of HortNZ on the pORPS:

i. Vance Hodgson (planning);

ii. Lynette Wharf (planning); and

iii. Stuart Ford (economics).

PURPOSE AND SCOPE

17. HortNZ is the industry good body for the horticulture sector, representing growers who pay levies on fruit and vegetables sold either directly *by* growers to customers or through a post-harvest operator, as set out in the Commodity Levies (Vegetables and Fruit) Order 2013.

18. HortNZ is affiliated with the following key local associations representing growers within the Otago Region: Teviot Fruit Growers Association, Ettrick Fruit Growers Association, Central Otago Fruit Growers Association, Otago Vegetable and Produce Growers. Alongside these local associations, several Product Groups representing specific product categories are also affiliated to HortNZ, for example: Summerfruit NZ, and Vegetables New Zealand Incorporated.

19. My evidence describes the horticulture sector in the Otago region as follows:

    (a) The scale and key components of the Otago region horticultural production sector and its national significance;

    (b) A description of natural resources that underpin the sector, including matters relating to the non-freshwater aspects of pORPS; and

    (c) A summary of the HortNZ position on pORPS.

HORTICULTURE IN OTAGO

Food Production

20. There is an estimated 3442 hectares[1] of horticultural land in Otago. There has been an overall reduction in the horticultural land use area in Otago between 2002 – 2019.[2] Stuart Ford's evidence details the composition of horticulture in Otago.

21. The Otago region has a degree of crop diversity – pip fruit, summerfruit, brassicas and potatoes are significant crops within the region, in addition to other crops including berryfruit, tomatoes, and other vegetable crops.

22. Specialised post-harvest pack houses add significant value after the farm gate and many growing organisations are now integrated into the post-harvest chain. This is discussed further below.

Summerfruit

23. Summerfruit, includes cherries, apricots, nectarines, peaches and plums.

24. Central Otago is the largest summerfruit growing area in New Zealand, followed by Hawkes Bay. There is 1144 ha of

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1 www.freshfacts.co.nz/files/freshfacts-2021.pdf

2 Agricultural and horticultural land use | Stats NZ

summerfruit in Otago. Central Otago accounts for 50% of New Zealand's summerfruit production. [3]

25. About half of the summer fruit area in New Zealand is used to grow cherries. Cherries are 70% exported. The other summerfruit are mainly grown for the domestic market: Nectarines (100% domestic), peaches (97% domestic) and plums (99% domestic) and apricots (70% domestic).[4]

Pip fruit

26. Pip fruit refers to the apple and pear industry.

27. There is 470ha[5] of pip fruit production in Central Otago, up from 427 hain 2017.[6] Otago is the third largest production area of pip fruit in New Zealand, after Hawkes Bay and Tasman. Approximately 67% of New Zealand's apple crop is exported each year.[7]

28. New Zealand is one of the most efficient producers of apples in the world – producing 61 tonnes per hectare (compared to an international average of 23.4 tonnes per hectare).[8]

Fresh vegetables

29. Vegetable production occurs mainly in North Otago – Oamaru and Kakanui areas. There is approximately 428ha of vegetable growing in the Otago region and there can be slight variations year to year due to crop rotation.

30. Dunedin and surrounds – including Mosgiel, Taieri and Stirling have previously been vegetable growing hubs, however, land used for vegetable production in Otago has halved in the last twenty years.[9]

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3 www.freshfacts.co.nz/files/freshfacts-2020.pdf

4 www.freshfacts.co.nz/files/freshfacts-2020.pdf

5 Apple and Pear Board grower data.

6 www.freshfacts.co.nz/files/freshfacts-2020.pdf

7 www.freshfacts.co.nz/files/freshfacts-2020.pdf

8 https://www.tupu.nz/en/fact-sheets/apples-and-pears

9 Fresh Facts – 2001 - 2021

Post-harvest facilities

31. Packhouses and other post-harvest facilities enable crops to be appropriately washed and packed according to consumer and market specification.

32. Export markets have packing and import health standard requirements specific to each receiving country.

33. Fresh produce has a short-shelf life. Time is a critical factor to ensure produce reaches consumer in best condition and quality.

34. Post-harvest facilities and packhouses need to be located close to orchards and crops they specialise in packing to ensure produce is packed and handled in the most appropriate methods for each crop. Proper packing and post-harvest treatment of produce such as apples and cherries can help manage shelf-life and quality issues.

Research

35. Plant and Food research have two sites in Otago and a third site based in Gore.[10]

36. The Dunedin site is co-located in the chemistry department at Otago University. Research interests include bioactive natural products, Taonga native species and fast analytical methods. There are three staff based at this site.

37. The Clyde site is an important site for perennial research. Part of this research includes research orchards and is based over an area of 57ha. Research areas include breeding, bioprotection and production systems. There are nine full time staff employed here as well as several casual staff. Key crops include kiwifruit, summerfruit, and pip fruit crops.

Economic Contribution

38. As noted in more detail in the evidence of Mr Ford, in total, the horticultural sector accounts for approximately 4% of the Otago regions GDP.[11]

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[10] Locations · Plant & Food Research (plantandfood.com)

[11] S Ford Evidence pORPS

39. The area in summerfruit has grown considerably since the 2017 statistics. The expected short-term growth will mean that in a few short years the area in summerfruit will have effectively doubled.[12]

40. In total the investment in the combined fruit and vegetable sector and its ancillary post harvest facilities is over half a billion New Zealand dollars. This off farm industry is a significant contributor to and a significant employer in the Otago economy. The summerfruit and wine grape growing sectors are significant from a New Zealand perspective

41. A discussion of the economic contribution of horticulture to the Otago economy is discussed in the evidence of Stuart Ford.

New Zealand Food Supply and Food System

42. New Zealand and our Pacific Island neighbours are too remote to import many fresh vegetables from elsewhere in the world. Most vegetables that New Zealand imports are processed. In 2019, the most imported vegetables were preserved tomatoes and frozen potatoes.[13]

43. The vast majority of vegetables in NZ are produced for the domestic market, with most vegetable crops being over 90% for the domestic market. The notable exception being onions, of which are 85% exported.[14]

44. New Zealand also has an important role in exporting fresh vegetables to the Pacific Islands. For example, in 2016, 76% of total exported potatoes went to Fiji, 87% of exported kumara and 82% of exported cauliflower, 75% of exported cabbage went to the Pacific Islands. This demonstrates that NZ has an important role in the food security of our Pacific Islands.[15]

45. Some fruit crops such as apples, kiwifruit, and citrus travel well, and can be both exported and imported. Other fruit crops are perishable and cannot travel as far. Cherries, which are

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12 Summerfruit NZ

13 www.freshfacts.co.nz/files/freshfacts-2020.pdf

14 www.freshfacts.co.nz/files/freshfacts-2020.pdf

15 https://wits.worldbank.org/CountryProfile/en/Country/WSM/Year/2019/TradeFlow/Import/Partner/all/Product/16-24_FoodProd

predominately grown for export, are often air-freighted to premium Asian markets.

46. Many fresh fruit crops grown for the domestic market are perishable, such as summer fruit and berries, and are therefore more challenging to transport to New Zealand.

47. Horticultural regions function as part of a national food system, with different crops being harvested at different times in different regions.

48. Tangata whenua have had a long history of cultivating crops closer to population centres, or locating population centres / pā near abundant resources. Different parts of New Zealand were suited for growing different crops and varieties, there was an economy through trade of crops and resources between areas[16].

Otago's significance within the New Zealand food system

49. Otago fruit production plays an important role in the availability of seasonal fruit. Generally, harvest begins in the North Island areas and then finishes in Otago. This lengthening of the season is important as it means fruit such as apricots, plums, nectarines, peaches and cherries are available for four to five months rather than six weeks if all production was based in a single area.

50. The extended growing season achieved by an early harvest in the North Island, and then Otago, means the rolling harvest season enables New Zealand producers to secure access to export markets.

51. Similarly, for domestic markets summerfruit, such as nectarines and peaches grown in Otago, supply New Zealand consumers in an extended season - ensuring fruit is available after the North Island harvest season is finished. This regional food system supports a resilient and reliable domestic food system.

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16 Maori Gardening: An archaeological perspective - Louise Furey (doc.govt.nz)

52. Within this national food system, the Central Otago area within the Otago region stands out as being, without doubt, nationally significant for horticultural food production.

53. While the horticultural area in summerfruit and pipfruit production has grown in Otago, the horticultural area in vegetable production has declined over the past twenty years.

54. The decline of commercial vegetable production in the Otago region means much of the year-round produce needed to sustain the local population is produced in other regions and transported into the area. This means that Otago needs to be aware and mindful of what decisions are made in neighbouring production regions as this can have a significant impact on the availability of fresh produce for its population.

Food Security

55. Food, and in particular vegetables and fruit, are essential human health needs.

56. Low vegetable and fruit consumption is associated with increased risk of developing some cancers, type 2 diabetes, cardiovascular disease, and obesity.[17]

57. Data from the New Zealand Health Survey indicates that in 2018/19 and 2019/20, only 33 percent of adults in New Zealand met the combined fruit and vegetable intake guidelines (3+ vegetables, 2+ fruit servings per day), and this has been decreasing over time.[18]

58. The price of meeting micronutrient requirements is very expensive in New Zealand compared to other countries. Without changing the land use, the situation is unlikely to get better and could get worse.[19] Affordability is a key factor in why people eat less than the recommended intake of fruit and vegetables. If fruit and vegetable growing cannot expand to meet the growing demand with an increased population, the reduced availability of vegetables and fruit

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[17] www.health.govt.nz/system/files/documents/publications/adults-dietary-habits-oct22.pdf

[18] www.health.govt.nz/system/files/documents/publications/adults-dietary-habits-oct22.pdf

[19] Moore, D., Barton, B., & Young , M. (2019). The value of local vegetable production. Sapere.

and an increased price would impact on the health of the most vulnerable people.[20]

59. Otago University has recently modelled the potential health impacts of increased vegetable prices related to freshwater regulation, preventing vegetable growing area expansion. (Due to grandparenting and/or pastoral nutrient allocation frameworks). This study found that an increased in vegetable prices of 43 - 58 percent,[21] would result in a loss of 58,300 – 72,800 Quality Adjusted Life Years and health costs of $490 - $610 million across the population.[22]

THE NATURAL ENVIRONMENT OF OTAGO SUPPORTING HORTICULTURE

60. Horticulture, like all food systems is dependent on natural resources and has impacts on natural resources, including climate, soil, water, air, and biodiversity.

Climate

61. The Central Otago climate is very favourable for the growing of summerfruit and pipfruit.

62. Otago's climate is less favourable for most other fruit and vegetables compared with regions further north. Many fruits are unable to grow commercially in the Otago region, and most vegetable crops have shorter seasons and lower yields.

Rainfall

63. Rainfall in Otago varies greatly. However, in Central Otago, there is very little rainfall. Central Otago is not only the driest area of Otago but also of New Zealand.

Temperature and Sunshine

64. Central Otago has the greatest temperature variation between July and January in Alexandra compared with other parts of Otago. Sunshine hours in some parts of Otago are

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[20] Ibid.

[21] 2018 Deloitte The New Zealand Food Story, Pukekohe Hub

[22] Cleghorn, Cristina. 2020. The health and health system costs of increasing vegetable prices over time. Wellington: University of Otago, 2020.

more than 2000 hours per year. The further inland from the Otago coast, the greater the sunshine hours.[23]

65. There is great variation in climate across the Otago region with the notable factors in Central Otago being frosts and long hot dry summers. The extremes in temperature are key climatic contributors making Central Otago a unique horticultural production area. An important feature is the high diurnal temperature range (the difference between daytime and night-time temperatures).

66. Due to the continental-type climate in Central Otago, the diurnal temperature range is large and contributes to the sweetness and firmness of Central Otago cherries and is one of the main reasons why Central Otago is a highly desirable location for summerfruit production.[24]

67. Growing degree days (**GDD**) is a standard method of calculating accumulated temperature over a given period. This is used to describe how much temperature crops and varieties need to meet certain growth stages. Cherries (the predominant and growing horticultural crop in Otago) require 800-900 GDD.[25]

68. According to NIWA the average number of GDD totals over 10 degrees Celsius ranges from 844 – 1023 in Queenstown, Alexandra and Wanaka.[26]

Frost

69. Frost is a constraint for growing but also necessary to help meet the 1000-hour chilling requirement, or vernalisation, for plants dormancy requirements as part of a growth phase.[27]

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23 NIWA 2015. The climate and weather of Otago

24 Witheford, S. (2018). *Establishing and operating a sweet cherry orchard in Central Otago.* Kellogg Rural Leadership Programme.

25 Witheford (2018) Witheford Simon, Establishing and operating a Sweet Cherry orchard in Cen...pdf (dropbox.com)

26 NIWAsts67.pdf

27 Witherford (2018) Witheford Simon, Establishing and operating a Sweet Cherry orchard in Cen...pdf (dropbox.com)

70. Growers in the Otago region experience ground, air and hoar frosts.[28]

71. According to NIWA the coldest period is May – September each year in Alexandra, Wanaka and Queenstown with between 20 – 27 ground frosts per month in June, July and August[29].

72. Orchards are especially vulnerable to frost during initial growth phases of orchard crops. From late August – early September when summerfruit and pip fruit start the first phase in the new growth cycle – 'first swelling' – frost can effectively kill of buds and potential fruit for the coming season.[30] Frost protection is typically needed from August – November.

73. Frost protection is vital to ensuring a productive crop. growers use water or frost fans to fight -frosts.

74. Frost fans are preferred by many growers, because of water constraints and because wind results in lesser risks to crops. Frost Fans are an effective method for frost protection to temperatures of –2 degrees Celsius. Water for frost protection is effective to –6 degrees Celsius.[31]

Hail

75. Hail is a constraint to growing. The soft flesh of summer fruit is particularly vulnerable to hailstorms. Damage from hail events can cause significant losses if they occur at a critical time in the season.[32]

76. Many growers use crop protection materials, such as artificial crop protection structures with netting for birds, to reduce the risk of hail damage to their crops

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28 NIWAsts67.pdf

29 NIWAsts67.pdf

30 Witheford Simon, Establishing and operating a Sweet Cherry orchard in Cen...pdf (dropbox.com)

31 Witheford Simon, Establishing and operating a Sweet Cherry orchard in Cen...pdf (dropbox.com)

32 Witherford (2018) 'Establishing and operating a sweet cherry orchard ion Central Otago. Kellogg Report

Greenhouse Gas emissions

77. Approximately 50% of New Zealand's greenhouse gas emissions are produced by agriculture, but only 1% of agricultural emissions are produced by horticulture.[33]

78. Fertiliser is the main source of agricultural emissions from horticulture. Managing emissions and non-point source discharges is achieved through the implementation of good management practices, and is managed though Farm Plans.

Soils

79. Summerfruit and pip fruit orchards do not require LUC 1-3 land to be productive. The free draining soils encompassed in other LUC classes allow as good and often better growing conditions for summer fruit and pipfruit orchards.

80. Vegetable growing requires fertile and free draining soils and is predominately located on LUC 1 and 2 land. Vegetables growers need access to good soils and the ability to rotate across these soils.

81. Crop rotation is important because growing the same crop in the same location results in poor crop performance due to soil nutrients being depleted over time. Crops with deep roots open channels deeper in the subsoil. A pasture phase improves soil structure by adding organic matter to the soil. Rotating crops breaks pest and disease cycles by removing host material and reducing pest populations. Some crops and their residues can act as soil bio-fumigants.

82. To achieve crop-rotation, commercial vegetable production incorporates the use of lease-land.

83. The use of leased land can present difficulties for commercial vegetable growers if water reliability is not guaranteed or is based on prior use of the land. Furthermore, leased land ideally needs to be located near the base operations of a business to ensure efficiency in production.

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[33] BERG 2018 Report of Biological Emissions Reference Group.

84. The evidence of Stuart Ford discusses the importance highly productive land and including classes other than LUC 1, 2 and 3 in supporting horticulture.

Water

85. Plants need water to grow, horticulture relies on rainfall and abstractions, and non-point source discharges.

86. Access to reliable, good quality water is fundamental to growing. Horticultural production requires significant investment, and it is commonly accepted that water reliability of at least 95% is required to sustainably provide for these investments.

87. Central Otago, where many horticultural operations are based, is typically drier and has low rainfall. In addition, the soils tend to be stony and free draining. Land being irrigated does not receive enough rainfall to ensure crop survival.[34]

88. Summerfruit and pip fruit production are long-term operations. Tree-crops are planted with a long-term view as once in place a tree cannot be moved. All the key requirements for fruit production at a site need to be secure and planned for at the time of planting.

89. The evidence of Stuart Ford discusses the importance reliable water supporting horticulture, and the efficiency of horticultural irrigation.

Air

90. Growers discharge substances to air, such as agrichemicals and fertiliser, and can also be adversely affected by discharges to air, such as dust or smoke on fruit prior to harvest. Greenhouses also use heating sources for their facilities some of which will result in discharges to air

91. The evidence of Lynette Wharfe discusses horticultural activities and discharges to air.

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[34] Irrigation in New Zealand : IrrigationNZ

Biodiversity and Biosecurity

92. Pest species and biosecurity incursions pose an ongoing threat to indigenous biodiversity, food production and food security, economic activities, and landscapes.

93. Climate change will compound the impacts of existing pests and providing opportunities for new pests to establish themselves due to changed conditions potentially threatening food production systems and food supply.

94. Growers utilise crop protection measures including bird - scaring, infrastructure such as cloth covers, agrichemical and biological control and the management of vegetation.

PROPOSED OTAGO REGIONAL POLICY STATEMENT – NON-FRESHWATER

Te Mana o te Wai

95. HortNZ note that while the concept of Te Mana o te Wai comes from the NPS-FM in the context of the pORPS it is noted that it has a Long-Term Vision that takes it cue from Te Mana o te Wai. While this is likely to be a result of the original development of the pORPS when it was considered to be a freshwater planning instrument as a whole, HortNZ does not have a difficulty with the concept applying more broadly.

96. HortNZ will revisit its position in the freshwater discussions but suffice to say for now that the following matters are ones which HortNZ will be asking the decision makers on the pORPS as a whole to consider and determine:

    (a) Te Mana o te Wai establishes a hierarchy of obligations. The first priority is to the health and wellbeing of water bodies and freshwater ecosystems.

    (b) The six principles of Te Mana o te Wai provides guidance on who makes resource management decisions and the matters to be considered.

    (c) HortNZ supports Kai Tahu's position that each waterway, has its own mauri, and as such, approaches to each waterway should be approached individually when assessing freshwater outcomes and limits.

(d) The second priority obligation under the Te Mana o te Wai framework is the health needs of people (such as drinking water).

(e) Food, and in particular vegetables and fruit, are essential human health needs.

(f) HortNZ seeks that the production of vegetables and fruit for domestic supply are recognised within the second priority obligation of the Te Mana o te Wai hierarchy and will return to this in the freshwater provisions processes.

(g) The Te Mana o te Wai principles most relevant to providing for the health needs of people are Manaakitanga, and Care and Respect.

(h) Recognising fruit and vegetables within the second priority obligation of Te Mana o te Wai, doesn't negate the need for fruit vegetable growers to manage their environmental effects through good management practices and to operate within the freshwater limits of the catchments they are located within.

(i) HortNZ seeks that the Proposed Otago Regional Policy Statement acknowledge the national importance of the summer fruit sector in Otago in supporting national food security and the health of the nation, by including a new issue statement for Food Production, Food Supply and Food Security.

(j) Otago consumers rely on growers elsewhere in New Zealand for most of their year-around fresh fruit and vegetables. The vegetable sector in Otago has contracted and is not large enough to support the nutritional needs of the Otago population.

(k) The people of Otago will rely on other Regional Policy Statements, when they apply the principles of Manaakitanga, and Care and Respect to make sufficient provision to produce enough fruit and vegetables to supply fresh fruit and vegetables to regions such as Otago, that have less favourable climates for year-around growing, within the freshwater limits of the water bodies they exercise the

principles of Mana Whakahaere and Governance over.

(l) The value of domestic food supply in resource allocation decision making, has been recognised within a series of policy instruments including: NPSFM specified vegetable growing areas; Waikato PC1 Policy 3; Horizons PC2 Policy 14-6; Canterbury PC7 section 42A reply, Policy 4.36A.

(m) The policy framework sought to recognise the importance of food production, food supply and food security, and a suggested new definition of essential human health is discussed further in the evidence of Vance Hodgson.

(n) The third hierarchy of Te Mana o te Wai is the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

(o) Except for food produced for the domestic market, most food production and primary production more generally is managed within the third priority obligation of Te Mana o te Wai.

(p) The regional value of food production is expressed specifically in the Visions of four of the five Freshwater Management Units.

i. Clutha Mata-au FMU;

ii. North Otago FMU;

iii. Taieri FMU; and

iv. Catlins FMU.

(q) Achieving these freshwater visions requires a policy framework that recognises and supports food production. This framework includes freshwater limits, but other non-freshwater policy settings have a considerable impact on food production.

(r) Freshwater visions and food production is discussed in the evidence of Vance Hodgson.

97. HortNZ will cover our position on Te Mana o te Wai in more detail in our pORPS Freshwater submission as we feel it is more appropriately aligned with freshwater provisions.

Climate change

98. The RMA Amendment Act 2020 includes the requirement to have regard to the Emissions Reduction Plan and the National Adaptation Plan when making and amending regional policy statements, regional plans and district plans.[35]

99. The Emissions Trading Scheme and the system for pricing agricultural emissions, that will come into effect in 2025, provide a market system for disincentivising higher emissions activities.

100. Analysis to support He Waka Eke Noa, has shown there is a strong link between achieving freshwater outcomes and reducing agricultural emissions.[36] The link between freshwater and climate requires an integrated approach to freshwater and climate policy.

101. The pORPS approach to climate change should complement the disincentive provided by emissions pricing, by enabling lower emissions activities and enabling infrastructure, activities and practices that support climate change adaptation.

Emissions Reduction Plan

102. The Emissions Reduction Plan includes a key action to transition to lower emissions land uses and practice.[37]

103. The Biological Emissions Reference Group report found that very large-scale diversification into horticulture could be as effective as a methane vaccine in tackling New Zealand's greenhouse gas emissions.[38]

104. Supporting land use diversification to lower emissions land uses such as horticulture is critical to New Zealand achieving our

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35 See the RMA Amendment Act 2020 section 18 amending section 66 of the RMA.

36 /https://hewakaekenoa.nz/wp-content/uploads/2022/06/FINAL-He-Waka-Eke-Noa-Recommendations-Report.pdf

37 /https://environment.govt.nz/assets/publications/Aotearoa-New-Zealands-first-emissions-reduction-plan.pdf

38 https://www.mpi.govt.nz/dmsdocument/32125-BERG-Report-FINAL-for-release-6-Dec

2050 emissions reduction targets within the Climate Change Response Act.

105. The opportunity horticultural expansion provides for reducing emissions was canvased in the Climate Change Commissions advice to Government. This advice assumed conversion of 2,000ha to horticulture annually between 2025 and 2035 (and noted that land use change would need to play a larger role than this if new technologies to reduce livestock emissions do not eventuate).[39]

National Adaptation Plan

106. The National Adaptation Plan recognises the important role our planning and investment systems have in guiding how we use our land and resources, and that currently regulatory systems do not always account for changing risks.[40]

107. It is important that pORPS, is mindful of our changing climate, and provides direction and flexibility to support and enable the climate change adaptation.

108. According to Plant and Food Research, climate change is expected to have an impact on the future suitability of growing areas in New Zealand. The Otago region, and in particular, Central Otago, will see their growing areas suitability increase as the effects of climate change become apparent.[41]

109. Horticultural adaptation will include:

(a) Plant breeding (more heat/drought resistant varieties), and the use of crop protection products such as agrichemicals, biopesticides and biological controls to manage new and increasing pest threats.

(b) Infrastructure investment, including crop protection structures, such as wind and hail shelters and plastic and glasshouses, to protect crops from more erratic weather. Infrastructure investment will also include

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[39] www.climatecommission.govt.nz/our-work/advice-to-government-topic/inaia-tonu-nei-a-low-emissions-future-for-aotearoa/

[40] /https://environment.govt.nz/assets/publications/climate-change/MFE-AoG-20664-GF-National-Adaptation-Plan-2022-WEB.pdf

[41] Plant and Food Research (November, 2021). *Fact sheet: Climate change impacts on cherry*

water storage to provide irrigation reliability while supporting the freshwater ecosystem health.

(c) Land use change, crop changes within growing systems and crop rotations to match crops with the changing climates and manage new and increasing pest threats.

110. The policy framework sought and relevance of climate change to food production is discussed in the evidence of Vance Hodgson.

Land and Soil

111. The objective of the National Policy Statement of Highly Productive Land (**NPSHPL**) is: highly productive land is protected for use land-based primary production, both now and future generations

112. In Otago, soils other than LUC 1, 2 and 3 are highly productive. Those soils that support horticulture and viticulture, should be recognised through the pORPS, to ensure these highly productive soils are not lost before the mapping required by the NPSHPL is complete.

113. The NPSHPL requires an integrated approach for the management of highly productive land, freshwater and urban development.

114. The NPSHPL requires an integrated approach for the management of highly productive land, freshwater and urban development.

115. The NPSHPL seeks that reverse sensitivity is managed so as not to constrain land-based primary production activities on highly productive land. Horticultural practices such as frost-fans, bird scarers, crop protection products and crop protection infrastructure, should be provided for to ensure horticulture is not constrained in highly productive land.

116. The policy framework sought to implement the National Policy Statement for Highly Productive Land and to manage reverse sensitivity is discussed further in the evidence of Lynette Wharfe.

Urban Form and Development

117. New housing and lifestyle development should be located away from highly productive land, to protect the soil resource for future generations.

118. The NPSHPL includes policies for urban development and lifestyle development, to restrict and avoid inappropriate use and development on highly productive land.

119. Appropriate use and development of highly productive land, includes supporting activities. In the context of horticulture supporting activities include workers accommodation, packhouses and cool stores.

120. The policy framework sought to manage effects from urban form and development is discussed further in the evidence of Lynette Wharfe.

Infrastructure, Energy, Transport

121. Infrastructure Energy and Transport can adversely impact on horticulture, by restricting the productive use of highly productive land.

122. Consistent with the NPSHPL where there is a functional need, it may not always be inappropriate to locate specified infrastructure on highly productive land. At the same time the use of highly productive land for land-based primary production should be prioritised and supported.

123. The policy framework sought for infrastructure, energy and Transport is discussed further in the evidence of Lynette Wharfe.

Air

124. The horticulture sector relies on the ability to discharge contaminants to air and seeks that these discharges are provided for where there are no significant localised adverse effects on human health, amenity and mana whenua values and the life supporting capacity of ecosystems.

125. There needs to be clear direction in the pORPS that the location of activities is an important consideration in terms of likely adverse effects on people from discharges to air and that new sensitive activities locating in proximity to existing

consented or permitted discharges to air is likely to lead to reverse sensitivity effects.

126. The policy framework sought for air is discussed further in the evidence of Lynette Wharfe.

CONCLUSION

127. The planning evidence of Vance Hodgson and Lynette Wharfe provide detailed recommendations for how the pORPS should be amended to address the matters raised in the HortNZ submission. The changes HortNZ seeks are related to the following themes:

(a) The health of the nation is provided for, by recognising the importance of Food Production, Food Supply and Food Security and the contribution Otago growers make to the New Zealand food system;

(b) Land use change to lower emissions food production and adaptation of food production systems is enabled; and

(c) Primary production is prioritised on highly productive land, including though restricting and avoiding inappropriate activities on highly productive land, and managing reverse sensitivity issues, so that primary production on highly productive land is not constrained.

Leanne Claire Roberts

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