BEFORE THE CANTERBURY REGIONAL COUNCIL

IN THE MATTER OF	the Resource Management Act 1991
AND	
IN THE MATTER OF	a submission on the partially operative Canterbury Land and Water Regional Plan - Plan Change 5 (Nutrient Management and Waitaki Sub-region)

STATEMENT OF EVIDENCE OF **HERBERT ROSS FAMILTON**

FOR THE DIRECTOR-GENERAL OF CONSERVATION

Dated 25 JULY 2016

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INTRODUCTION

1. My name is Herbert Ross Familton. I have been employed by the Department of Conservation (DOC) in the position of Resource Management Planner in its South Island Shared Services Office since 21 May 2012. I am responsible for providing information, advice, and analysis on resource management issues for plan and consent hearings and appeals at a national level as part of my job within the Department's Operations Group.

2. I am presenting planning evidence in support of the Director-General of Conservation's (D-G) submission on the Canterbury Land and Water Regional Plan (LWRP) Plan Change 5 (Nutrient Management and Waitaki Sub-region) (Plan Change 5). I hold a Bachelors of Arts Degree with Honours in Geography (1983) and a Masters in Regional and Resource Planning (1985) from the University of Otago. I have thirty years experience in the area of natural resources planning. I became a full member of the New Zealand Planning Institute (NZPI) in 1993.

3. Prior to my current employment with DOC, I was employed by the Auckland Council as a Senior, and Principal, Specialist (Air) from 2011 to 2012. In that role, I was responsible for policy work and drafting for the provisions of the air quality sections of Auckland Council's Unitary plan. I was employed by Environment Canterbury as a Senior Resource Management Planner in the Policy Planning team from 2010 to 2011 in the Air Quality area. From 2006 to 2009, I worked for Environment Canterbury in the Planning section, focusing on water resources planning on the Waipara, Hurunui, and Waiau catchments.

4. Prior to 2006, DOC and the Department of Lands and Survey employed me in a number of planning roles. I was the lead DOC official for the whole of Government submission that advised the Attorney-General for the Waitaki Catchment Water Allocation plan in 2005/2006. I processed restricted coastal activity coastal consents for the Minister of Conservation from 1997-2006 in the Southern Regional Office of DOC.

5. In my current role, I have prepared planning evidence for the Director-General of Conservation on:

    - the Proposed Hurunui and Waiau River Regional Plan;
    - the proposed Canterbury Land and Water Regional Plan - Plan Change 4 (Omnibus);
    - the proposed Canterbury Land and Water Regional Plan - Plan Change 3 (South Canterbury); and
    - the Proposed Canterbury Land and Water Regional Plan.

6. I also case-managed the Director-General's input into the proposed Canterbury Land and Water Regional Plan - Plan Change 2 (Hinds/Hekeo).

7. I am therefore familiar with Canterbury Regional Council's (ECan) Land and Water Regional Plan framework for water resource planning under the Resource Management Act 1991 (RMA) in Canterbury.

8. The data, facts, information and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

9. I have read the Environment Court's Code of Conduct for expert witnesses and I agree to comply with it. My qualifications as an expert are set out above. I confirm that the issues in this brief of evidence are within my area of expertise.

10. The literature or other material that I have used or relied upon in support of my opinions is listed in Appendix 2.

SCOPE OF EVIDENCE

11. My evidence will address planning matters focusing solely on four areas of the D-G's submissions on Plan Change 5. They are:

    A. General Provisions

    B. Dryland habitat/Indigenous Biodiversity provisions

    C. Threatened native fish and Freshwater Habitat

    D. Water Quality standards/limits

12. I have relied on the evidence presented by Dr Nicholas Dunn on threatened native fish.

13. The sections and page numbers I refer to throughout this evidence are the sections and page numbers in the section 42A report unless indicated otherwise. Appendix 3 lists the abbreviations used in my evidence.

14. I have proposed amendments to the rules that are the subject of my evidence. Those proposed amendments are attached as Appendix 1.

15. The format of my evidence is as follows:

Policy, Rule or Schedule Number

i. *D-G's Submission:* I briefly state the D-G's submissions and/or further submission.
ii. *Officer Comment and Recommendation:* I comment on any aspects of the section 42A report that are relevant.
iii. *Comment:* I provide commentary on the D-G's position in light of the section 42A report.
iv. *Recommendation:* I make a recommendation based on the previous points (i) to (iii).

16. Where I have not directly addressed a point raised in the D-G's submission in this evidence, it is because the planning rationale I set out in this evidence and justifications offered in the D-G's submission and/or in the section 42A report apply.

A. GENERAL PROVISIONS

17. The D-G's submissions and further submissions were generally supportive of Plan Change 5 and the approach taken in it of managing water bodies by establishing four freshwater management units (FMU), which are to align with freshwater objectives in the tables at 15B of the Plan Change.

i. D-G's SUBMISSION

18. The general provisions which D-G supports include:

a. The codification of good management practise with regards to water quality;
b. Setting cumulative limits for contaminants;
c. Ensuring Nitrogen load limits in the Waitaki catchment are accounted for and not exceeded;
d. Setting in-stream limits for particular water bodies;
e. Red-zoning the Ahuriri and Hakataramea zones to indicate no increase in nutrient load can be accommodated in those zones; and
f. The general zoning approach adopted in Figure One of the Plan Change.

19. In my opinion, that approach, including setting water quality limits for lakes and rivers in the catchment, and addressing cumulative effects of nutrients in the catchment will, generally, give effect to the NPS (Freshwater Management) (NPS FM).

20. The D-G proposed additional text to be included in the introductory section of Part 15B, outlining the values of public conservation land in the catchment and the DOC's role in management of that land.

ii. OFFICER COMMENT AND RECOMMENDATION

21. The section 42A report includes recommendations to include some additions based on the D-G's submission, and the inclusion of a sentence to acknowledge the smaller lakes in the Upper Waitaki (paragraph two of page 3-1 of the section 42A report).

iii. COMMENT

22. Sensitive lake zones are established as management zones under the LWRP. In my opinion, it would be appropriate for a plan which addresses water quality and which establishes sensitive lake zones to explicitly recognise that those shallow lakes are particularly vulnerable to water quality changes, and to include provisions to address their vulnerability.

23. I note that the list of technical reports relied on by Council officers in drafting the plan includes reference to Clarke (2015), which in turn relies on Kelly, Robertson and Allen (2014) (at page i) which is a report that was jointly commissioned by ECan and DOC.

24. According to Kelly, Robertson and Allen (2014), at page 52, and to Clark (2015), at page 2, one of the key management implications for shallow lakes is that they are vulnerable to water quality degradation.

25. In my opinion, inclusion in the plan of provisions which address the vulnerability of shallow lakes to water quality changes would give effect to NPS FM Objective A1, which state, respectively:

> *"Objective A1*
> *To safeguard:*
> *a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and*
> *b) the health of people and communities, at least as affected by secondary contact with fresh water;*
> *in sustainably managing the use and development of land, and of discharges of contaminants.*
>
> *Objective A2*
> *The overall quality of fresh water within a region is maintained or improved while:*

a) protecting the significant values of outstanding freshwater bodies;

b) protecting the significant values of wetlands; and

c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated."

26. The provisions I have proposed would also give effect to Policy 7.3.5 of the Canterbury Regional Policy Statement (RPS) which is:

> *"To avoid, remedy or mitigate adverse effects of land uses on the flow of water in surface water bodies or the recharge of groundwater by:*
>
> *(1) controlling the diversion of rainfall run-off over land, and changes in land uses, site coverage or land drainage patterns that will, either singularly or cumulatively, adversely affect the quantity or rate of water flowing into surface water bodies or the rate of groundwater recharge; [...]"*

27. These provisions are quite specific about the need to manage land uses to achieve water quality objectives in lower order plan instruments.

28. Principles 2, 5 and 8 of the Canterbury Water Management Strategy (CWMS), to which particular regard must be had, are also relevant.

29. Those principles include:

(i) to "integrate land management and enhance water quality" (principle 2);

(ii) to "protect indigenous flora and fauna and their habitats in ... lakes" (principle 5); and

(iii) to "ensure high quality water for contact recreation such as swimming, fishing, boating and other water sports" (principle 8).

30. The inclusion of provisions having regard to those principles will provide a policy basis for ensuring water quality is maintained and, importantly, will provide a management framework for considering the cumulative effects of contamination on water quality when assessing applications for resource consents for land use and discharges.

31. The inclusion of references to areas which are managed by DOC and to plans prepared under the Conservation Act 1987 and National Parks Act 1980 would be consistent with the requirement in section 66(2)(c)(i) of the RMA, which requires regional councils to have regard to management plans and strategies prepared under other Acts when changing a plan.

32. Much of the western catchment is public conservation land which is administered by DOC. While downstream water users are reliant on the naturally high quality water which has its source from that land, in areas further to the east of the catchment, land uses have effects on water quality in smaller water bodies, including those on public conservation land. Two examples are Lake Middleton, which is a Recreation Reserve, and Lake Alexandrina, which is largely surrounded by Scenic Reserve. Lake Alexandrina also has an overlay of wildlife refuge status over its catchment for the protection of birds.

33. The sensitive nature of those shallow lakes and their vulnerability provide a basis for setting water quality objectives at a suitably precautionary level to protect their water quality in a new policy 15B.3A as submitted by the D-G.

iv. RECOMMENDATION

34. I recommend that as well as the additions recommended in the section 42A report, further additions are made to:

i) the introductory text, as discussed above and outlined in Appendix 1, and
ii) the inclusion of a new policy 15B.3A outlining the key documents guiding management of public conservation land as outlined in paragraph 32.

B. INDIGENOUS BIODIVERSITY PROVISIONS

i. D-G's SUBMISSION

35. The D-G's submission sought amendments to policy 15B.4.23 (indigenous biodiversity) to include "habitat" and to apply across the plan catchment, and the insertion of new Policy 15B.4.23A for freshwater biodiversity.

36. Additionally, the D-G sought that all controlled activity rules for use of land for farming become restricted discretionary rules, with matters of control reserved over effects on significant indigenous terrestrial biodiversity and habitat and significant freshwater biodiversity and habitat. The same two matters of control were sought for the restricted activity rules.

37. The D-G also further submitted in support of Mackenzie District Council's submissions on Policy 15B.4.23

ii. OFFICER COMMENT AND RECOMMENDATION

38. The section 42A report recommends a number of changes to give effect to the Mackenzie District Council's submissions and the D-G's further submission on Policy 15B.4.23, but none directly addressing the D-G's submission on the rules in 15B.5.10 – 50.

iii. COMMENT

39. I have identified an error in the D-G's submission in that in reference to the controlled activity (CA) and restricted activity (RDA) use of land for farming activity rules, it referred to 4.12- 4-35 rather than Plan Change provisions 15B.4.12 - 35. It is clear from the next column in the D-G's submission that the rules being referred to are those which relate to land use for farming CA and RDA rules, and in the plan change the CA and RDA rules are actually in 15B.5.10—50.

40. Plan Change 5's rule framework is complicated by the plan nomenclature of having four general freshwater management units, comprising the Upper Waitaki, Valley and tributaries, Hakataramea, and Northern Fan FMUs as required by the NPS FM, into which various Plan Change 5 zones (such as the Haldon, Ahuriri, and Sensitive Lake zones) are divided.

41. This framework becomes complicated when implementing Policy 15B.4.23. Policy 15B.4.23 establishes an interim regime for Regional Council land use consents to consider indigenous biodiversity values until relevant District Council Planning provisions are notified and "given effect". I particularly support this addition by the Reporting Officer.

42. Principle 2 of the CWMS, which is a matter ECan needs to have "particular regard to" states that:

> *"There is a strong emphasis on the integration of water and land management including the protection of biodiversity and enhancement of water quality".*

43. Inclusion of the proposed provisions for indigenous biodiversity would in particular give effect to Objective 9.2.3 of the RPS which states:

> "*... significant habitats of indigenous fauna are identified and their values and ecosystem functions protected*".

44. Policy 9.3.2 of the RPS clearly identifies the lead responsibilities on indigenous biodiversity to territorial authorities in method 4 which states that territorial authorities should:

> *"(4) Recognise the national priorities for the protection of biodiversity through objectives, policies and methods in district plans"*

45. Plan Change 5 recognises this split between Regional and District functions. However, it has identified the need for an interim land use rule 15B.5.18B which would address indigenous biodiversity in an interim land use rule by requiring the identification and assessment of

significant indigenous biodiversity by a suitably qualified ecologist until relevant District Council land use provisions are established.

46. Waimate District Plan includes a schedule of terrestrial sites, (see Appendix 5) which appears to be reasonably comprehensive. Most of the upland sites are in "Areas of Conservation Merit" (see Appendix 5). However, no particular rule is attached to trigger a land use consent application which would require an assessment ofthe significance of the vegetation or the effects on it (pers. comm. Michael Sewell, Waitaki District). Clearly therefore, the Waitaki District Plan is not comprehensive in terms of addressing significant terrestrial indigenous biodiversity. I therefore recommend extending the interim rule regime for use of land for a farming activity to include any area within Waitaki District, with consequential amendments to Policy and Rules.

47. While land use for faming rules are a subset of potential landuse consent activities, failure to consider indigenous biodiversity would be inconsistent with principles, objectives and policies of the CWMS, RPS, and LWRP. This situation justifies an interim RDA rule for land use until Mackenzie and Waitaki district have complete schedules of significant sites of indigenous biodiversity established in their District Plans, and associated rules for their maintenance protection that have legal effect. This will, in planning terms, ensure that there is consistency with the principles, objectives and policies of the superior instruments, and ensure that consideration of applications for consents under the regional plan regime can include assessment of effects on biodiversity.

iv. RECOMMENDATIONS

1. I support the revised wording of the indigenous biodiversity policy (Policy 15B.4.232) recommended in the section 42A report. However, it could be improved by the insertion of "and habitat". I also recommend extending the application of rules for interim land use for farming to the Mackenzie and Waitaki District, for the reasons outlined above.
2. A new policy and methods framework on freshwater biodiversity is required and in my opinion a future plan change to address this matter may be required.
3. Matters of control are required in relation to significant indigenous biodiversity (terrestrial and freshwater) in the use of land for farming activity controlled and restricted discretionary activity rules (Rules 15B.5.10 to 15B.5.50) in order to give effect to CWMS principles and RPS objectives.

C. THREATENED NATIVE FISH AND FRESHWATER HABITAT

i. D-G'S SUBMISSION

48. The D-G has sought the inclusion of provisions referring to "habitat quality" in Policies 15B 4.18, 4.19, 4.20, 4.24, 4.25 and 4.26, and an amendment to policies 15B 19, 24, 25, and 26 to

include a requirement to "avoid adverse effects on threatened native fish habitats after 13th February 2016".

ii. OFFICER COMMENT AND RECOMMENDATION

49. The section 42A report has recommended amendments to Policy 15B 4.20 (d) to ensure that adaptive management conditions relate to the effects of the activity concerned and accord with the water quality limits in tables 15(B)(c)(d) and (e).

iii. COMMENT

50. Currently there are no provisions in the LWRP for protecting the specific threatened native fish species or the habitats of those species described by Dr Dunn in his evidence, notwithstanding the direction in section 6(c) of the RMA, the NPS FM, the Canterbury RPS and the principles of the CWMS, each of which are discussed in more detail below.

51. NPS FM Objective 1A is:

> *"To safeguard:*
> *a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and*
> *b) the health of people and communities, at least as affected by secondary contact with fresh water;*
> *in sustainably managing the use and development of land, and of discharges of contaminants."*

52. Objective A1, to safeguard ecosystems associated with freshwater species, can be achieved by including provisions regarding the habitat of those species in the plan. The fish species in Dr Dunn's evidence, are highly endangered and occupy relatively small areas of freshwater habitat, which equate to the ecosystem they rely on. These habitats currently have no specific protection under the LWRP. Managing nutrient and sedimentation will contribute to safeguarding the life-supporting capacity of the freshwater ecosystems of which threatened native fish are a component.

53. NPS FM Objective B1 is:

> "*To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water."*

54. Inclusion of provisions for the protection of freshwater fish habitat would give effect to Objective 9.2.1 of the RPS which states:

> "*The decline in the quality and quantity of Canterbury's ecosystems and indigenous biodiversity is halted and their life-supporting capacity and mauri safeguarded*"

and to Objective 9.2.3 of the RPS which states:

> "... *significant habitats of indigenous fauna are identified and their values and ecosystem functions protected*".

55. RPS Policy 10.3.2(7) is a matter to which this plan is required to "give effect". That Policy states:

> *To preserve the natural character of river and lake beds and their margins and protect them from inappropriate subdivision use and development, and where appropriate, to maintain and/or enhance areas of river and lake beds and their margins and riparian zones where:*
>
> *(7) Riparian zones provide spawning or other significant habitats for at risk or threatened species, such as inanga or Canterbury mudfish*

56. RPS Policy 10.3.2(7) is not limited in its application to inanga and Canterbury mudfish, it is also relevant to other threatened native fish species. While RPS Policy 10.3.2(7) specifically mentions Canterbury mudfish, it names that species as an example of at risk or threatened species. In my view, this Policy also applies to Upland and Lowland Longjaw galaxias which are other species which have similar threat status, to which the policy should apply. The policy discusses "providing spawning and other significant habitats for at risk and threatened species". Further, method 1 states that ECan may include methods in regional plans to "maintain and enhance river and lake bed values as appropriate". While appropriateness may depend on the context and location, in the Waitaki catchment where threatened endemic species exist, it is appropriate to protect the significant habitats of those species.

57. Additionally, the inclusion of provisions in Plan Change 5 for the protection of the freshwater fish habitats described by Dr Dunn would implement CWMS principle 5 concerning the protection and value of indigenous biodiversity, which is a matter to which ECan must have "particular regard" under section 63 of the ECan Act. Principle 5 states:

> *Indigenous flora and fauna <u>and their habitats</u>* (my emphasis) *in rivers, streams, lakes, groundwater and wetlands are <u>protected</u>* (my emphasis) *and valued.*

58. The combined effect of both the RPS and CWMS is that there is clear strategy and policy direction to ensure the protection of native fish habitat. The Plan Change 5 provisions proposed in the officer's report do not, in my opinion, adequately achieve the planning framework anticipated in the RPS and CWMS for threatened native fish.

59. The LWRP includes objective 3.17 and policy 4.31, which state:

> *Objective 3.17 The significant indigenous biodiversity values of rivers, wetlands and hāpua are protected, and*
>
> *Policy 4.31 Damage to the bed or banks of water bodies, sedimentation and disturbance of the*
> *waterbody, direct discharge of contaminants, and degradation of aquatic ecosystems is*
> *avoided by:*
> *(a) excluding intensively farmed stock from lakes, rivers and wetlands; and*
> *(b) excluding stock from swimming, salmon spawning and other sensitive waterbody areas and the waterbody bed and banks closely upstream of these areas; and*
> *(c) limiting access to wetlands, and the banks or beds of lakes and rivers to stock species that prefer to avoid water and at stocking rates that avoid evident damage.*

60. Section 67 (1) RMA requires rules, where appropriate, to implement the policies of the plan, and policies are required to implement the objectives of the plan.

61. The LWRP also includes matters of discretion in rules regarding indigenous biodiversity and significant habitats of indigenous fauna which will assist when deciding on applications for resource consent which affect threatened native fish.

62. As under any RMA plan framework, Objectives are intended to state the general outcomes, and Policies outline the methods by which the Objectives may be achieved. A logical planning extension of this is that one would have expected the regional plan to have methods that actively seeks to implement RPS Objective 9.2.3 and RPS Policy 10.3.2(7), and LWRP objective 3.17 and policy 4.31 so far as threatened native fish species are concerned.

63. In my opinion, the difficulty with the proposed Plan Change 5 provisions is that they will not adequately give effect to the provisions of the CWMS and RPS discussed above, and they are not consistent with the objectives and other policies in the LWRP as discussed above. In short, the plan as proposed does not do two things:

- firstly, it does not identify the locations of indigenous biodiversity and habitats of indigenous fish, and

- secondly, it does not include appropriate Policy and rule provisions which will implement Principles, Objectives, and Policies from the CWMS, RPS, and LWRP relevant to indigenous freshwater fish species and their habitat. As a result, habitat can be modified and significant habitats may be lost, sometimes perhaps completely unwittingly. As Dr Dunn's evidence illustrates, the consequence in the Waitaki may be the loss of threatened endemic species.

iv. RECOMMENDATIONS

64. My recommendations are that:

a) "Freshwater habitat quality" is included in Policies 15B 4.18, 4.19, 4.20, 4.24, 4.25.

b) It could be open to the Panel to recommend that a plan change be promulgated for protecting threatened fish habitats. Lowland and Upland longjaw galaxias and bignose galaxias habitat could be addressed in a future plan change to the Waitaki Catchment Water Allocation Regional Plan (and in plans for other catchments in the Canterbury region). A future plan change could address the habitat of Canterbury mudfish in the LWRP, as the distribution of that species extends a considerable distance north of the Waitaki Catchment (to the Ashley River) as explained in paragraph 15 of Dr Dunn's evidence.

c) Based on Dr Dunn's evidence and the CWMS principles RPS and LWRP Objectives and Policies as discussed above, amendments to Policy 15B 4.18 and Schedule 7 can be justified to address the protection of springheads, through requirements for riparian margins protection and constructed wetlands.

d) Including "avoiding adverse effects on threatened native fish habitat" (from 13 February 2016) in Policies 15B 4.19, 4.24, 4.25, 4.26.

D. WATER QUALITY STANDARDS/LIMITS

i. D-G'S SUBMISSION

65. The D-G sought to amend Tables 15B (b) and (d) to argue for alternative water quality limits and to include some specific water quality limits for Lake Ruataniwha.

ii. OFFICER COMMENT AND RECOMMENDATION

66. The section 42A report has recommended some changes to the sub-tables 15.6 and 15 .7 of Table 15B, but has not included any provisions for a separate specific water quality limits for Lake Ruataniwha.

iii. COMMENT

67. Firstly, a comment on Aoraki/Mt Cook village and its inclusion in Table 15B(h). The D-G's submission in its introduction supported accounting for all the nitrogen load limits in the catchment. The Amenities area established under section 15 of the National Parks Act 1980 has enabled the development of Aoraki/Mount Cook alpine village. The Amenities area is important in the Plan Change 5 context as Aoraki/Mount Cook Village has a wastewater treatment plant, and DOC holds resource consent for discharge from that plant. The nutrient discharge from Aoraki/Mount Cook alpine village wastewater treatment plan is factored in at its maximum discharge rate in the schedule 15B(h) Community Wastewater discharge limit included in the plan. It is significant in terms of community load limits in the catchment and I support its inclusion in table 15B(h) as outlined in Plan Change 5.

National Objectives Framework

68. The NPS FM, at Appendix 2, sets out the national attribute tables, which identify the attributes for the National Objectives Framework (NOF), discussed in Policy A2 of the NPS FM. Policy A2 of the NPS FM states that:

> *Where freshwater management units do not meet the freshwater objectives made pursuant to Policy A1, every regional council is to specify targets and implement methods (either or both regulatory and non-regulatory), in a way that considers the sources of relevant contaminants recorded under Policy CC1, to assist the improvement of water quality in the freshwater management units, to meet those targets, and within a defined timeframe.*

69. From a planning perspective there are at least two inconsistencies relevant to the NOF in the 15B table limits when applying the Kelly, Robertson, and Allen (2014) work.

70. One inconsistency relates to the measure of phosphorous and its effect on water quality in Lake McGregor. That lake is in Band "A" for TP in the Kelly, Robertson, and Allen (2014) table. However, setting it at <20 median mg/m^3 as is proposed in Plan Change 5 would put it close Band "C" in the Kelly, Robertson, and Allen (2014) figure 18 (see appendix 4). A shift from band A to Band C equates to a significant decrease in water quality.

71. The NOF requires that lakes do not change Bands. Consequently, a limit of <10 median mgs/m^3 is required to ensure Lake McGregor remains in Band "A", which it is identified as being in, in the Kelly, Robertson, and Allen (2014) report.

72. Kellands Pond (of which there appear to be two in the NZMS topographical map series) is modelled by Kelly, Robertson, and Allen (2014) as being below the national bottom line NOF for Chlorophyll-a. On that measure it would have to meet a long-term target of <12 mg/m^3 to meet the NOF band "C" for Chlorophyll-a to be above the national bottom line.

73. The NOF attribute tables (NPS FM, Appendix 2) state that where a value of 12 mg/m^3 is exceeded, "*lake ecological communities have undergone or are at high risk of a regime shift to a persistent degraded state, due to impacts of elevated nutrients leading to excessive algal and/or plant growth, as well as from losing oxygen in bottom waters of deep lakes*".

74. In Kellands Pond there appears to have been significant water quality degradation that needs to be addressed if long-term compliance with the NPS FM Policies A1 and A2 is to be achieved, as required by section 67(3) RMA.

75. RPS Policy 7.3.6 seeks to establish and implement appropriate water quality standards "which are appropriate for each water body". In my opinion, the planning framework requires water quality limits to be set for water bodies to give effect to this policy. It would be unusual, in my experience, to have a plan addressing water quality for lakes in a catchment to set standards for some lakes and not others. To be a comprehensive regime for water quality, Plan Change 5 should include Lake Ruataniwha, which ought to have its own set of water quality limits. Such an approach, in my view, would be consistent with NPS FM Objective A1 and A2 and the RMA's sustainable management purpose.

iv. RECOMMENDATION

76. I recommend that:

a) table 15B(h) be retained as notified,

b) Lake Ruataniwha be managed by including an appropriate set of water quality limits in table 15B(d),
c) Lake McGregor's TP limits should be <10 median mg/m^3 to ensure it remains within NOF "A" band limits, and
d) Kellands Ponds should desirably stay at a value of less than 12 mg/m^3 for Chlorophyll-a.

CONCLUSIONS

Relating to the Introduction

77. The addition of some more descriptive material would improve the Plan Change by providing scientific and ecological context. Extra descriptive material regarding recreational and tourism values and use trends in the very large Conservation Areas and *Aoraki* / Mt Cook National Park managed by the Department of Conservation in the west of the Waitaki basin would also be useful.

Relating to Significant Indigenous Biodiversity

78. The proposed policy as amended by the submissions will create an improved policy framework for an interim ECan land use regime to manage significant terrestrial indigenous biodiversity until appropriate District plan rules have been made operative. I support the changes recommended by the section 42A report in this regard. To give effect to this requirement interim rules are also required in the Waitaki District as well as the Haldon area (in Mackenzie District) to protect indigenous biodiversity.

79. One significant improvement sought by the D-G's submission clarifies that to address biodiversity comprehensively, and include both terrestrial and freshwater biodiversity, a further plan change may be required.

Relating to Threatened Native fish

80. NPS FM Objective A1, RPS Policy 10.3.2(7) and CWMS Principle 5 provisions mandate the identification and protection of significant habitat of threatened native fish species of Canterbury mudfish, Lowland and Upland Longjaw galaxias, and Bignose galaxias.

81. The habitats of these fish species currently have no specific protection under the LWRP. Therefore, I would support the use of the term "habitat" in Policies and rules in Plan Change 5.

82. Riparian protection and fencing around native fish habitats are also proposed as methods that will protect freshwater fish habitat. Provisions requiring those steps would help ensure the ongoing maintenance and protection of native fish habitat and, in my opinion, are therefore consistent with the superior RMA Principle, Objective and Policy Framework instruments.

Relating to Water quality standards and limits

83. The D-G's submission has proposed water quality standards/ limits for some lakes which were omitted from the notified version of plan change 5 seek to maintain existing water quality in these lakes in their appropriate NOF bands. The Kelly, Robertson and Allen (2014) and Clarke (2015) technical reports outline in particular the vulnerability of the shallow high country lakes to nutrient enrichment, and their vulnerability to major step changes in ecosystems functioning.

84. ECan has appropriately established sensitive lake zones in the plan change and I agree these provisions are necessary to maintain water quality. I agree that these lakes are substantial water bodies and establishing standards for them is highly desirable.

85. The proposed provision will, in my opinion, give effect to the NPS FM Objectives A1 and A2, having particular regard to CWMS Principle 2 which requires the actual or potential cumulative effects of using freshwater to be " recognised and managed within defined standards". In so doing, this will maintain the lake values, in particular of the smaller lake values, that are managed by the Department and others in the Waitaki catchment for current and future generations.

Herb R Familton

Planner

25 July 2016

APPENDIX 1:

Recommended Changes to Plan Change 5

Key to recommended changes

- **Strikeouts ~~indicate deleted text~~**
- **Red underline indicate additional text**

	Reference to Plan Provision	**Relief Sought** *(Note that references are to the section 42A report)*
A. General Provisions		
1	Section 15B Waitaki Sub-region, introductory text	On page 3-1 before the last sentence of paragraph two, add: The shallow lakes are particularly susceptible to nutrient enrichment from agricultural intensification.
2	Section 15B Waitaki Sub-region, introductory text	On page 3-2, alter the first paragraph as follows: "The Waitaki Sub-region includes the iconic Mackenzie Basin, an area recognised as nationally significant for its diverse range of dryland and aquatic ecosystems, which provide habitat to a large number of indigenous fish, invertebrates and birds. The Waitaki catchment is a distinct centre of endemism and diversity for native species.
3	Section 15B Waitaki Sub-region, introductory text	On page 3-2, add a new sentence to the second paragraph as follows: The public conservation land including National Park is managed in the catchment under the Canterbury Conservation Management Strategy (2016) and *Aoraki* /Mount Cook National Park Management Plan (2005) by the Department of Conservation.
4	Section 15B Waitaki Sub-region, after 15B.3	After 15B.3, add a new Policy 15B.3A as follows: 15B.3A DOC Management Plans that apply to the Waitaki Sub-region • Canterbury Conservation Management Strategy • Aoraki/ Mount Cook National Park Management Plan
B. Significant Indigenous Biodiversity		
5	Section 15B Waitaki Sub-region, Policy 15B.4.23	In 15B.4.23, amend as follows: *"Significant indigenous biodiversity and habitat is proteceted* ; Retain (a) and (b) After 15B.4.23, add a new Policy 15B.4.23A:

		15B.4.23A:*Significant indigenous freshwater biodiversity and habitat is maintained in the four freshwater management units by:* *(a) The implementation of a regional plan change to the Canterbury Land and Water Regional Plan notified after 13 February 2016 that requires the identification and protection of significant freshwater biodiversity and habitat.*
C. Threatened Native Fish and Freshwater Habitat Quality		
6	Section 15B Waitaki Sub-region, Policy 15B.4.18	Amend Policy 15B.4.18 as follows: "Within the Waitaki sub-region, water and freshwater habitat quality is maintained by requiring: Add after (a) a new (b) as follows: (b) the following freshwater protection mechanisms: i. Provision of riparian buffer strips on waterways ii. Native planting where appropriate iii. Fencing of springheads and spring-fed waterways iv. Use of artificial wetlands where appropriate; and Consequential renumbering of (b) to (c)
7	Section 15B Waitaki Sub-region, Policy 15B.4.20	Amend Policy 15B.4.20 as follows: "Water and habitat quality is maintained in the Upper Waitaki Freshwater Management Unit by: Delete existing section (d) and replace with a new (d) and (e) as follows: (d) avoiding increases in nitrogen losses from farming activities adjacent to and upstream of threatened native fish habitat, in particular, springs and spring fed rivers; and (e) applying to all resource consents granted for the use of land for a farming activity, aquaculture operation, or waste water activity, monitoring and response conditions providing for, but not limited to: 1. Water quality triggers 2. Receiving environment monitoring 3. Nutrient discharge allowances 4. Graduated nutrient discharge reductions

		to meet the water quality outcomes in the relevant table 15B(c), 15B(d) and 15B(e) and relates specifically to the effects caused by the activity, consistent with Policies 15B.4.13-16.
8	Section 15B Waitaki Sub-region, Policies 15B.4.19	Amend Policy 15B.4.19 as follows: "Water and Habitat quality in the Upper Waitaki Freshwater Management Unit is maintained by: Add a new (a) as follows: (a) after 13 February 2016, avoiding adverse effects on threatened native fish habitats; and Consequential renumbering of (a) and (b) to (b) and (c).
9	Section 15B Waitaki Sub-region, Policy 15B.4.24	Amend Policy 15B.4.24 as follows: "Freshwater and Habitat quality is maintained within the Hakataramea Freshwater Management Unit by: Add a new (a) as follows: (a) after 13 February 2016, avoiding adverse effects on threatened native fish habitats; and Consequential renumbering of (a), (b) and c) to (b), (c) and (d).
10	Section 15B Waitaki Sub-region, Policy 15B.4.25	Amend Policy 15B.4.25 as follows: "Freshwater and Habitat quality is maintained within the Valley and Tributaries Freshwater Management Unit by: Add a new (a) as follows: (a) after 13 February 2016, avoiding adverse effects on threatened native fish habitats; and Consequential renumbering of (a), (b) and (c) to (b), (c) and (d).
11	Section 15B Waitaki Sub-region, Policy 15B.4.26	Amend Policy 15B.4.26 as follows: "Freshwater and Habitat quality is maintained within the Greater Waikākahi Zone by: Add a new (a) as follows: (a) after 13 February 2016, avoiding adverse effects on threatened native fish habitats; and Consequential renumbering of (a) and (b) to (b) and (c).
12	Schedule 7	Amend Schedule 7, Management Area: In-stream Biodiversity Values as follows:

		Objective: To protect and enhance in-stream biodiversity values and avoid adverse effects on threatened fish species. Add two further new targets: *3. "Fence out spring heads and spring-fed streams to sustain threatened fish populations and fish habitat."* *4. "Fence out waterways from all stock and provide riparian buffers to mitigate the effects of P, N, e.coli, and suspended sediment."*
D. Water Quality		
13	Table 15B(d)	Amend Table 15B(d) as follows: Lake McGregor <10 ~~<20~~ TP mg/m^3 [annual median] Kellands Pond less than 12 mg/m^2 for Chlorophyll-a [annual median]
14	Table 15B(d)	Amend Table 15B(d) by inserting a new water body new water quality limits as appropriate: Lake Ruataniwha: • TLI X • TP <10 mg/m^3 [annual median] • TN < X mg/m^3 [annual median] • Chl-a <X mg/m^3 [annual median], and <X mg/m^3 [annual maximum]

APPENDIX 2: Literature

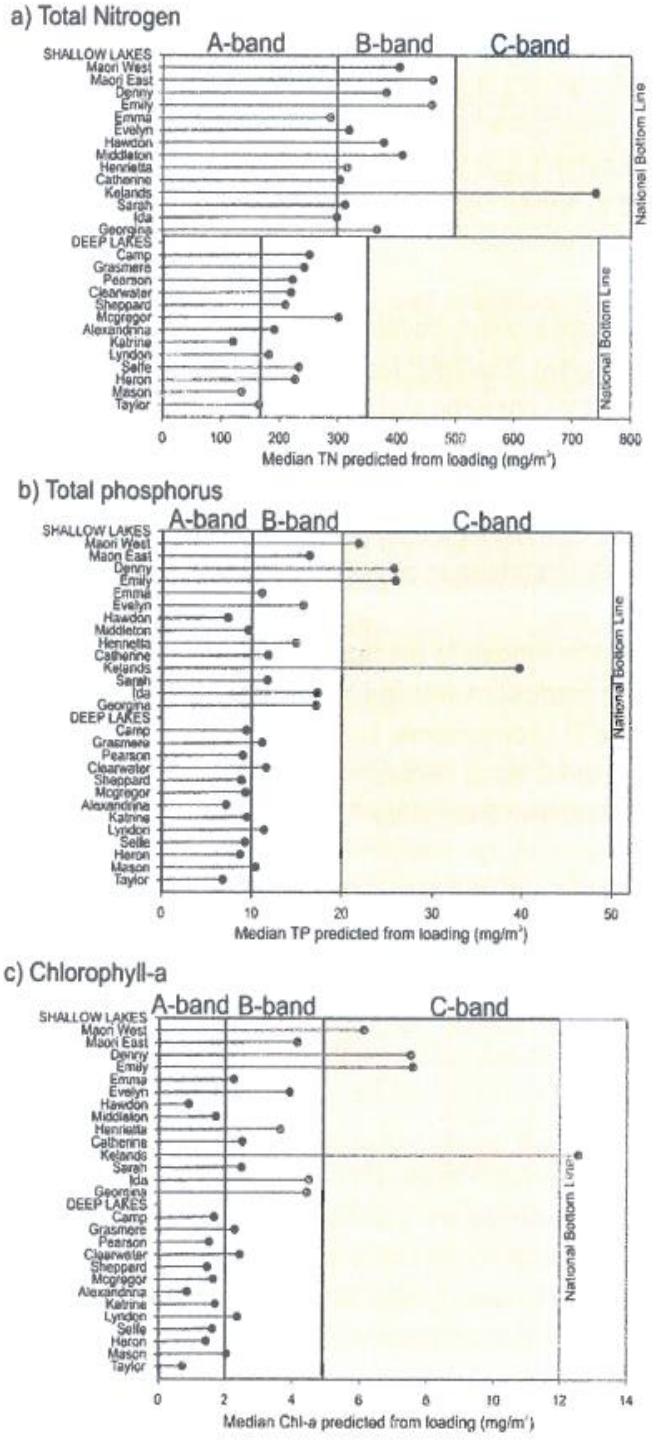
1. Resource Management Act 1991
2. National Policy Statement for Freshwater Management 2014
3. Kelly DJ, Robertson HA, Allen C (2014) Nutrient loading to Canterbury High Country lakes for sustaining ecological values (2014). Cawthron Institute Report No. 2557 prepared for the Department of Conservation and Environment Canterbury.
4. Tanner CC, Sukias JPS, Yates CR 2010. New Zealand Guidelines: Constructed Wetland Treatment of Tile Drainage. NIWA Information series No 75. National institute of Water and Atmosphere Research Ltd 48 p.
5. Wilcock RJ, Monaghan RM, Quinn JM, Srinivasan MS, Houlbrooke DJ, Duncan MJ, Wright-Stow AE, and Scarbrook MR. Trends in water quality of five dairy farming streams in response to adoption of best practise and benefits of long-term monitoring at the catchment scale. Marine and Freshwater Research 2013 64 401-412. CSIRO Publishing.
6. Clarke G. Upper Waitaki Limit setting process. Predicting consequences of future scenarios: Lake Water Quality. ECan Report R15/156. December 2015
7. The second and third report of the Land and Water Forum April and October 2012, Wellington, NZ.
8. The Parliamentary Commissioners report “Growing for Good” (2006)
9. Water Quality in New Zealand: Landuse and Nutrient Pollution. (November 2013). Parliamentary Commissioner for the Environment, Wellington.
10. The New Zealand Biodiversity Strategy (2000)
11. The Canterbury Regional Policy Statement (2013)
12. The Canterbury Conservation Management Strategy, DOC (2000)
13. The expert witness evidence of Dr Nicholas Dunn for the Director-General of Conservation
14. The ECan section 42A report R16/23 dated July 2016. Environment Canterbury.
15. The ECan section 32 report, dated February 2016. Environment Canterbury.

Appendix 3 Terms used in Evidence

CA	Controlled Activity
CWMS	Canterbury Water Management Strategy
ECan	Canterbury Regional Council
ECan Act	Environment Canterbury (Temporary Commissioners and Improved Water Management Act) 2010
DA	Discretionary Activity
D-G	Director-General of Conservation
DOC	Department of Conservation
FMU	Freshwater Management Unit
NPS FM	National Policy Statement Freshwater Management 2014
PA	Permitted Activity
LWRP	Partially operative Canterbury Land and Water Regional Plan (ECan 2012)
NCA	Non Complying Activity
RDA	Restricted Discretionary Activity
RMA	Resource Management Act
RPS	Canterbury Regional Policy Statement (January 2013)
TLA	Territorial Local Authority
TP	Total Phosphorus (expressed as median mg/m^2)
TN	Total Nitrogen (expressed as median mg/m^2)
ZIP	Zone Implementation plan

Appendix 4

Predicted median Water Quality attributes and the National Objectives Framework (NOF) numeric water quality bands (Figure 18 page 54 Kelly, Robertson, and Allen (2014)



APPENDIX 5

Waimate and Waitaki Schedules of Significant Nature Conservation Value